



Rodeo Sanitary District

VOLUME 2 OF 2  
SPECIFICATIONS

2024 WPCP Primary Clarifier Improvement Project

Bid Set Submittal

March 2024

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APPENDIX A: Prebid Information

DOCUMENT 00007

SEALS PAGE

Prepared By:

**Eric L. Jones, P.E**  
Project Engineer  
HydroScience Engineers

Civil Engineer No. **C68550**  
Expires 09/30/25



03/01/2024

**Thinh T. Le**  
Electrical Engineer  
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Electrical Engineer No. **E18362**  
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03/01/2024

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## SECTION 00010

### NOTICE INVITING BIDS

Notice is hereby given that sealed bids will be received by the Rodeo Sanitary District in their office located at 800 San Pablo Avenue, Rodeo, CA 94572, at any time prior to **11:00 AM on Wednesday, April 10, 2024** for furnishing all labor, materials, equipment, and services for the construction of improvements designated as:

#### **2024 WPCP Primary Clarifier Improvement Project**

Bids will be publicly opened, examined and declared at the time a date as noted above, and will be referred to the District Board of Directors for subsequent action.

A prebid conference will be held at **11:00 AM on Tuesday, April 2, 2024** at the Rodeo Water Pollution Control Plant, 800 San Pablo Avenue, Rodeo, CA, 94572. The prebid conference is mandatory.

The project work is generally described as:

Replacement of the primary clarifier wear items, supply of spare wear items, and replacement of the bridge and handrail, with handrail replacement to include all of older existing handrail and a new area above the headwork structure. Surface repair of concrete walkways above the headworks structure and installation of a new coating system to protect the primary clarifier concrete. The existing above grade junction box, electrical conduits and conductors servicing the primary clarifier will be replaced and a new disconnect switch and a new lighting system will be installed for the primary clarifier. The Engineer's opinion of probable construction cost is \$520,000.

All of the work is to be done in accordance with the Contract Documents, at the places and in the particular locations, of the form, sizes and dimensions and of the materials, and to the lines and grades and at the elevations as shown on the Plans and Specifications made therefore and approved by the District.

The successful Bidder will have the opportunity to enter into a partnering agreement with the District. Partnering consists of a voluntary effort by all parties to develop joint goals and establish a cooperative rather than adversarial atmosphere while executing the Contract. The objective of partnering is effective completion of the work on schedule, within budget, and in accordance with the Contract Documents. Partnering shall commence and be conducted in accordance with industry practice.

Under California Laws and Regulations the District shall inform all prime contractors of public works, to the extent feasible of relevant public work requirements. Therefore the District hereby advises all bidders that the successful bidder shall:

1. Employ the appropriate number of apprentices on the job site as set forth in California Labor Code 1777.5;

2. Provide worker's compensation coverage, as set forth in California Labor Code Sections 1860 and 1861;
3. Keep and maintain the records of work performed on the public works project, as set forth in California Labor Code Section 1812;
4. Keep and maintain the records required under California Labor Code Section 1776 which shall be subject to inspection pursuant to California Labor Code Section 1776 and California Code of Regulations, Division 1, Chapter 8, Subchapter 3, Article 6, Section 16400 (e); and
5. Be subject to other requirements imposed by law.

Bidders are hereby notified that, pursuant to the provisions of California Labor Code, Sections 1770 et. seq., the District has obtained from the Director of the Department of Industrial Relations, the general prevailing rate of per diem wages and a general prevailing rate for holidays, Saturdays and Sundays, and overtime work in the locality in which the work is to be performed for each craft, classification, or type of worker required to execute the contract. A copy of the prevailing rate of the per diem wage is on file at the offices of the Rodeo Sanitary District, 800 San Pablo Avenue, Rodeo, CA 94572. The prevailing rate of per diem wages will be made available to any interested party upon request, and a copy thereof shall be posted at the job site.

The District will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the prevailing wage rates on file. The possibility of a wage increase is one of the elements to be considered by the contractor in determining his/her or its Bid and will not, under any circumstances, be considered as the basis of a claim against the District on the Contract.

The successful Bidder and its subcontractors shall employ workers which consistently display and demonstrate proper moral, ethical and professional conduct to all fellow workers, employees and representatives of the District and other involved parties.

Copies of the Contract Documents are now on file and available for public inspection at the Rodeo Sanitary District, 800 San Pablo Avenue, Rodeo, CA 94572 where they may be obtained for a non-refundable \$150.00 charge. Bid packages will be mailed upon request and receipt of the non-refundable charge and the bidder's UPS or FedEx account number. Requests for information on receiving bid packages should be directed to the District Offices at (510) 799-2970. Bid packages will also be available at the Builder's Exchange website.

Each Bid must conform and be responsive to the invitation, the Plans and Specifications, and all documents comprising the pertinent Contract Documents. Each Bid shall be presented under sealed cover and shall be accompanied by a certified check, cashiers check, cash or bidder's bond, made payable to the District, in an amount not less than ten (10) percent of the bid. The check shall be given as a guarantee that the Bidder will execute the Contract in conformity with the form of agreement contained within the Contract Documents, and will furnish bonds and insurance policies as specified within ten (10) days after notification of the award of the Contract to the successful Bidder.



Addenda issued during the time of bidding shall be covered in the Contractor's Bid and shall become part of the Contract Documents.

Bidders shall develop and submit bids at their own expense. The District will not reimburse any costs associated with the development and submittal of any and all Bids.

The District reserves the sole right to reject any and all Bids and to waive any informality in a Bid.

No Bidder may withdraw its bid for a period of ninety (90) days after the date set for the opening thereof.


Any Bid protest must be submitted in writing to Rodeo Sanitary District, 800 San Pablo Avenue, Rodeo, CA 94572, 4:30 p.m. of the 5<sup>th</sup> business day following Bid opening. The initial protest document must identify the protestant and contain a complete statement of the basis for the protest with reference to any portion of the bid documents which the protestant relies on as the basis of the protest. The above time and content requirements are mandatory, and failure to comply therewith shall constitute a waiver of any further right to pursue a bid protest, including filing a Government Code claim or legal proceedings. Bid protests shall be acted upon by the District's Board.

At the successful Contractor's option, securities may be substituted for the required retention, in accordance with the provisions of Section 22300 of the State of California Public Contract Code.

In accordance with the provisions of California Public Contract Code Section 3300, the District has determined that the Contractor shall possess a valid **Class A – General Engineering**.

In accordance with the provisions of California Business and Professions Code Section 7028.15, a Bid submitted to the District by a Contractor who is not licensed in accordance with Chapter 9 of the California Business and Professions Code shall be considered non-responsive and shall be rejected by the District.

Questions regarding the bid package should be directed in writing as soon as possible (but no later than five (5) working days prior to the opening of bids to: Steven S. Beall, PE, District Manager, at [bealls@rodeosan.org](mailto:bealls@rodeosan.org). Where appropriate, the District may respond to such questions by addenda transmitted to all bid package recipients.

By:   
Steven S. Beall, P.E., District Manager  
Rodeo Sanitary District

Date: 3/13/2024

**\*\*\* END OF SECTION \*\*\***

**SECTION 00100**

**INSTRUCTIONS TO BIDDERS**

**ARTICLE 1 – GENERAL**

The work to be performed is described in the Contract Documents titled, 2024 Water Pollution Control Plant (WPCP) Primary Clarifier Improvement Project dated March 2024 and prepared by the Rodeo Sanitary District.

All Bidders shall carefully examine the Contract Documents and satisfy themselves as to their sufficiency; and shall not at any time after the submission of the bid dispute or complain of such Contract Documents and the directions explaining them or interpreting them, nor assert that there is any misunderstanding in regard to the location, extent, nature of amount of work to be performed. The Bidder shall notify the District of any discovered conflicts, errors or discrepancies in the Contract Documents prior to the submission of its Bid. Intended Bidders shall have visited the site of the Work and familiarized themselves with the conditions there existing as well as all other conditions relating the construction and labor under which the work will be performed and affecting cost, progress or performance of the Work. The submitting of a Bid shall be considered an acknowledgement on the part of the Bidder of its familiarity with conditions at the site of work.

Bids for the Work shall be made on the forms contained in the following sections and shall include the following completed documents:

<u>SECTION</u>	<u>TITLE</u>
00300	BID FORM
00310	BID SCHEDULE
00410	BID GUARANTY BOND
00420	BIDDER’S EXPERIENCE AND QUALIFICATIONS
00430	DESIGNATION OF SUBCONTRACTORS
00440	PROJECT SITE VISIT AFFIDAVIT
00480	NON-COLLUSION AFFIDAVIT
00490	SAFETY COMPLIANCE AFFIDAVIT (do not include Part A through D)

A complete set of Bid forms shall be placed in an envelope, sealed, and addressed to:

RODEO SANITARY DISTRICT  
Attn: District Manager  
800 San Pablo Avenue, Rodeo, CA 94572  
BID: 2024 WPCP Primary Clarifier Improvement Project

A pre-bid conference will be held at the time and place stipulated in Section 00010, **NOTICE INVITING BIDS**. The conference will be conducted by the District. Subcontractors and other

interested parties are invited and encouraged to attend. A tour of the site of the Work will be conducted if so requested by any of the persons attending the conference.

The District reserves the right to postpone the date and time for receiving and/or opening of Bids at any time prior to the date and time established in the Notice Inviting Bids. Postponement notices may be faxed and will subsequently be mailed to planholders of record in the form of addenda.

Addenda may be issued to all planholders during the Bid period. Any and all addenda issued shall become a part of the Contract Documents and shall be fully considered by all Bidders during formation of Bids.

Bids shall give the prices proposed in figures, shall give all other information requested herein, and shall be signed by the Bidder or an authorized representative, including address. By submission of a proposal on the separate forms provided by the District, the Bidder attests that the Bidder has purchased a complete set of these Contract Documents and is aware of its entire contents. Bidder is required to provide a complete Bid on all schedules listed in Section 00310, **BID SCHEDULE**.

Bids shall be delivered to the District at the above address before the time set for the opening of Bids as provided in Section 00010, **NOTICE INVITING BIDS**.

After the expiration of the time for submission of Bids, all Bids will be publicly opened, read, declared, and referred to the District Board of Directors for action.

## **ARTICLE 2 – BID PRICES**

Bid prices shall include everything necessary for the completion of construction and fulfillment of the Contract. Bid prices shall include all federal, state and local taxes. Costs for developing, submitting, and presenting Bids are the sole responsibility of the Bidder and claims for reimbursement will not be accepted by the District.

If the product of a unit price and an estimated quantity does not equal the extended amount quoted, the unit price shall govern, and the correct product of the unit price and the estimate quantity shall be deemed to be the amount Bid. If the sum of two or more items in a bidding schedule does not equal the total amounts quoted, the individual item amounts shall govern and the correct total shall be deemed to be the amount Bid.

## **ARTICLE 3 – BIDDER’S SIGNATURE AND AUTHORITY**

If the Bid is made by an individual, Bidder’s name, signature, and post office address must be shown; if made by a firm or partnership, a list of the partners, and the signature of at least one of the general partners must be shown; if made by a corporation, the Bid shall show the name of the state under the laws of which the corporation is chartered, the name and post office address of the corporation, and the title of the person who signs on behalf of the corporation. If the Bid is made by a corporation, a certified copy of the bylaws or resolution of the Board of Directors of the corporation shall be furnished showing the authority of the officer signing the Bid to execute contracts on behalf of the corporation. If the Bid is made by a joint venture, the Bid shall be

signed by a representative of one of the joint venture firms. Additionally, the Bid shall include a copy of the resolution or agreement empowering the representative to execute the Bid and bind the joint venture.

#### **ARTICLE 4 – BID IRREGULARITIES**

Each Bid and the information requested shall be enclosed in a sealed envelope and labeled as specified herein. Bidders are warned against making erasures or alterations of any kind, and Bids which contain omissions, erasures, or irregularities of any kind may be rejected. No oral, telegraphic, electronic (including E-Mail), facsimile, or telephonic bids or modifications will be considered.

#### **ARTICLE 5 – MODIFICATION OF BID**

Modification of a Bid already received will be considered only if the modification is received prior to the time established for receiving Bids. Modifications shall be made in writing, executed, and submitted in the same form and manner as the original Bid.

#### **ARTICLE 6 – SUBCONTRACTORS AND MAJOR SUPPLIERS**

In accordance with California Public Contracting Code Section 4100, et. Seq., each Bid shall have listed in Section 00430, **DESIGNATION OF SUBCONTRACTORS**, the name, portion of work to be performed, and location of the place of business of each subcontractor who will perform work or labor or render service to the Bidder in or about the construction of the Work or improvement, or of any subcontractor licensed by the State of California who, under subcontract to the Bidder, will specifically fabricate and install a portion of the Work or improvement according to detailed drawings contained in the Contract Documents, in an amount in excess of one-half of one percent of the Bidder's total bid or \$10,000, whichever is greater.

If the Contractor fails to designate in its proposal a subcontractor for any portion of the Work as required above, the Bidder shall be deemed to have agreed to perform such portion of the Work itself and shall not be permitted to subcontract the portion of the Work without the written permission of the District in accordance with applicable law.

## **ARTICLE 7 – BID GUARANTY BOND AND CONTRACT AWARD**

Bids shall be accompanied by one of the following forms of Bidder's Security: Cash or; a certified or cashier's check payable to the District; or a Bidder's Bond (Bid Guaranty Bond) executed by an admitted surety made payable to the District. The Bidder's Security shall be in an amount not less than ten (10) percent of the aggregate of the Bid. The Bidder's Security shall be a guarantee that the Bidder, if awarded the Work, will within ten (10) days after award: (1) enter into a Contract in specified form, (2) furnish a bond of faithful performance and a labor and material bond, and (3) furnish specified insurance policies. In case of refusal or failure to enter into the Contract, or to provide the bonds and insurance policies the Bidder's Security shall be forfeited to the District, the proceeds therefrom being hereby agreed upon as liquidated damages to the District on account of the delay in the execution of the Contract and required bonds and the performance of the Work thereunder, and the necessity of accepting a higher or less desirable Bid resulting from such failure or refusal to execute the Contract and the bonds as required.

Upon the execution of the Contract and the approval on behalf of the District of the accompanying bonds and insurance policies, all certified checks that accompany Proposals and that have not heretofore been returned, will be returned, each to its maker.

Award of the Contract will be made within ninety (90) days after the opening of Bids to the lowest responsive, responsible bidder complying with these instructions, the Section 00010, **NOTICE INVITING BIDS**, and such other pertinent provisions of the Contract Documents as may apply. The Award of the Contract may be made after the ninetieth (90<sup>th</sup>) day after the opening of the Bids if mutually agreed to by both the District and the successful Bidder in writing. If award is made, it will be based on the lowest responsive, responsible Bid whose base Bid and alternate(s) as listed in Section 00300, **BID FORM**, yields the lowest total Contract price. Selection of any or all alternates shall be at the sole discretion of the District. The District, however, reserves the right to reject any or all Bids, and to waive any informality in Bids received.

## **ARTICLE 8 – CONTRACTOR'S LICENSE**

Each Bidder shall be licensed in accordance with the provisions of the Contractors License Law of California as stipulated in Section 00010, **NOTICE INVITING BIDS**.

## **ARTICLE 9 – WORK PERCENTAGES**

The Contractor shall perform with its own organization no less than the work percentage specified in Section 01010-1.07, **WORK PERCENTAGES**.

## **ARTICLE 10 – COLLUSION**

If the District has reason to believe that collusion exists among Bidders, the District will reject the Bids of the known participants in such collusion and may, at its option, require that all Bidders certify under penalty of perjury, that no collusion has occurred or exists. The District also, at its option, may reject all Bids received. In accordance with Public Contract Code Section 7106, the Contractor shall complete and file with its proposal the Non-Collusion Affidavit in

Section 00480. Public Contract Code Section 7106 requires that the affidavit must be duly sworn.

## **ARTICLE 11 – INTERPRETATIONS**

No oral representations or interpretations will be made to any Bidder as to the meaning of the Contract Documents. Requests for an interpretation shall be made in writing and delivered to the following address at least five (5) days before the Bids are opened as provided in Section 00010, **NOTICE INVITING BIDS.**

**Requests should be made to Steven S. Beall, P.E., Rodeo Sanitary District at 800 San Pablo Avenue, Rodeo, CA 94546 by mail, or by e-mail at [bealls@rodeosan.org](mailto:bealls@rodeosan.org).**

## **ARTICLE 12 – WITHDRAWAL OF BID**

In accordance with Public Contract Code Section 5101 and 5103, within five (5) days after the opening of Bids, a Bidder may withdraw its Bid providing the Bidder can establish to the District's satisfaction that a mistake was made in preparing the Bid. A Bidder desiring to withdraw shall give written notice to the District, specifying, in detail, how the mistake occurred and how the mistake made the Bid materially different than it was intended to be. Withdrawal will not be permitted for mistakes resulting from errors in judgment or carelessness in inspecting the site of the Work or in reading the Contract Documents.

## **ARTICLE 13 – BID PROTEST**

Any Bid protest must be submitted in writing to the District Manager before 4:30 p.m. on the fifth (5<sup>th</sup>) working day following Bid opening.

- A. The initial protest document must contain a complete statement of the basis for the protest, and all supporting documentation.
- B. The party filing the protest must have actually submitted a Bid for the Work. A subcontractor of a party submitting a Bid for the Work may not submit a Bid protest. A party may not rely on the Bid protest submitted by another Bidder, but must timely pursue its own protest.
- C. The protest must refer to the specific portion of the Bid document which forms the basis for the protest.
- D. The protest must include the name, address and telephone number of the person representing the protesting party.
- E. The party filing the protest must concurrently transmit a copy of the initial protest document and any attached documentation to all other parties with a direct financial interest which may be adversely affected by the outcome of the protest. Such parties shall include all other Bidders who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

- F. The District will give the protested Bidder five (5) working days after the receipt of the protest to submit a written response. The responding Bidder shall transmit the response to the protesting Bidder concurrent with delivery to the District.
- G. The procedure and time limits set forth in this paragraph are mandatory and are the Bidder’s sole and exclusive remedy in the event of Bid protest. The Bidder’s failure to comply with these procedures shall constitute a waiver of any right to further pursue the Bid protest, including filing a Government Code Claim or legal proceedings
- H. If the District determines that a protest is frivolous, the protesting Bidder may be determined to be non-responsible and that bidder may be determined to be ineligible for future contract awards.

**ARTICLE 14 – BIDDERS CHECKLIST**

This checklist has been prepared and furnished to aid Bidders in including all necessary supporting information with their Bid. Bidder’s submittals shall include, the following, in addition to any other materials which Bidder may wish to submit:

<u>Item</u>	<u>Checked</u>
Bid Form (Section 00300)	_____
Bid Schedule (Section 00310)	_____
Bid Guaranty Bond (Section 00410)	_____
Certification of Experience (Section 00420)	_____
Designation of Subcontractors (Section 00430)	_____
Project Site Visit Affidavit (Section 00440)	_____
Non-Collusion Affidavit (Section 00480)	_____
Safety Compliance Affidavit (Section 00490) (do not include Part A through D)	_____

**\*\*\* END OF SECTION \*\*\***



**SECTION 00200**

**INFORMATION AVAILABLE TO BIDDERS**

**ARTICLE 1 – SUBSURFACE CONDITIONS**

A subsurface investigation was not conducted for the work included in this project.

**ARTICLE 2 – RECORD DRAWINGS AND ADDITIONAL INFORMATION**

Previous construction activities have occurred at portions of the site(s). Section 00800-Article 5, **RECORD DRAWINGS AND ADDITIONAL INFORMATION**, lists known available information for review by Bidders.

**ARTICLE 3 – ACCESS FOR CONTRACTOR’S PRE-BID SITE INVESTIGATION**

Additional access to the site(s) for investigations may be desired to assist the Bidders in the development of their Bid. This access shall be scheduled in advance with the District. These access requests shall be made through the District contact, as provided in Section 00100-Article 11, **INTERPRETATIONS**.

**\*\*\* END OF SECTION \*\*\***

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**SECTION 00300**

**BID FORM**

To the:

Date: \_\_\_\_\_

Rodeo Sanitary District  
800 San Pablo Avenue  
Rodeo, CA 94572

Name of Bidder: \_\_\_\_\_

Business Address: \_\_\_\_\_

The undersigned, as Bidder, declares that it has a complete set of the Contract Documents and carefully examined the location of the proposed Work, the Contract Documents, and the Plans and Specifications therein referred to, and the Bidder proposes and agrees if this proposal is accepted, that it will execute the Agreement specified in Section 00500 and contract with the Rodeo Sanitary District to provide all labor, materials, necessary machinery, tools, apparatus, and other means of construction and services, and do all the work specified in the Contract in the manner and time hereinafter set forth required for the construction of the Work involved in the improvements designated as:

**2024 WPCP Primary Clarifier Improvement Project**

ADDENDUM RECEIPT: The receipt of the following Addenda to the Contract Documents is acknowledged:

Addendum No. \_\_\_\_\_ Addendum No. \_\_\_\_\_ Addendum No. \_\_\_\_\_  
Addendum No. \_\_\_\_\_ Addendum No. \_\_\_\_\_ Addendum No. \_\_\_\_\_

The Bidder proposes and agrees to contract with the Rodeo Sanitary District to perform all the above work, including subsidiary obligations as defined in the Contract Documents for the prices indicated in Section 00310, **BID SCHEDULE**.

Further in submitting its Bid, the undersigned Bidder understands and agrees that the Total Base Bid amount is determined by the sum total of all Bid Item Amounts in the Bid Schedule. Bid Items include all work as defined in Section 01025, **MEASUREMENT AND PAYMENT**. No Bid items will be excluded from the awarded Contract. If award is made, it will be based on the lowest responsive, responsible Bid. Only one Contract will be awarded.

The undersigned has filled in all information required herein and understands that failure to do so is grounds for rejecting the Bid by the District.

The District reserves the right to change, delete or add new work to the Contract as per the terms of the General Conditions of the Contract Documents.

The undersigned has checked carefully all the above figures and understands that the District will not be responsible for any errors or omissions on the part of the undersigned in making up this proposal.

If the product of a unit price and an estimated quantity does not equal the extended amount quoted, the unit price shall govern, and the correct product of the unit price and the estimate quantity shall be deemed to be the amount bid. If the sum of two or more items in a bidding schedule does not equal the total amounts quoted, the individual item amounts shall govern and the correct total shall be deemed to be the amount bid.

The undersigned understands that the District reserves the sole right to reject any or all Bids and to waive any informality in Bids received. Award will be made which, in the judgment of the District, is in the best interest of the District.

It is agreed that this proposal may not be withdrawn within a period of ninety (90) days after the date set for the opening thereof, except as allowed in Public Contract Code 5101 and 5103.

Enclosed herewith is the Bidder's Security in the form of a \_\_\_\_\_ (specify form i.e. cash, certified check, cashier's check, or bidder's bond) for not less than ten percent (10%) of the total amount of this proposal and the undersigned agrees that, in case of its default in executing the Agreement and providing the necessary bonds and insurance policies after award and due notice thereof, the Bidder's Security shall be forfeited to the District, and the Bidder's Security thereon shall become and remain the property of the District, as liquidated damages without proof of loss after ten (10) days of notice of default by District. In the event Bidder provides the District with a Bid Guaranty Bond (Bidder's Bond), it shall be on the form enclosed herewith in Section 00410, **BID GUARANTY BOND** and be issued by an admitted surety insurer. The admitted surety insurer shall be authorized to conduct business in California. At its discretion, the District may request that a certified copy of the certificate of authority of the surety issued by the Insurance Commissioner of the State of California be submitted by the surety to the District. At its discretion, the District may also require the surety to provide copies of its most recent annual statement and quarterly statement filed with the Department of Insurance pursuant to Article 10 (commencing with Section 900) of Chapter 1 of Part 2 of Division 1 of the Insurance Code. The Bond and Corporate Surety will be reviewed and approved by the District's counsel.

In accordance with the Contract Documents, the undersigned further agrees to so plan the Work and to prosecute it with such diligence that the Work shall be commenced within ten days after the date of Contract execution and notice to proceed and shall be substantially completed within the time specified in Section 00800-1.01, **TIME ALLOWED FOR COMPLETION**.

The undersigned agrees, if awarded the Contract, that there shall be paid by the undersigned and by all subcontractors under him, to all laborers, workers and mechanics employed in the execution of such Contract or any subcontract thereunder, not less than the general prevailing rate of per diem wages, and rates for overtime and legal holidays in the locality in which the work is to be performed, as ascertained and determined, pursuant to California Labor Code Sections 1770, 1773, 1773.1, 1773.6, and 1773.7 as amended. The Director of the Department of Industrial Relations has determined the general prevailing rate of per diem wages in accordance with the standards set

forth in Section 1773 for the locality in which the Work is to be performed. A copy of the wage rates is available on-line at [www.dir.ca.gov/DLSR/PWD](http://www.dir.ca.gov/DLSR/PWD). It shall be mandatory upon the Contractor to whom the Work is awarded and upon any subcontractor under the Contractor to pay not less than the specified rates to all workers employed by them in the execution of the Work. The prevailing rate of per diem wages will be made available to any interested party upon request, and a copy thereof shall be posted at the job site by the Contractor. The representations made herein, including the Bidder's licensing information hereinafter furnished, are made under penalty of perjury. The undersigned understands that any bid not containing the licensing information, or containing any information which is subsequently proven false, may be considered non-responsive, and be rejected by the District.

The representations made herein, including the Bidder's licensing information hereinafter furnished, are made under penalty of perjury. The undersigned understands that any Bid not containing the licensing information, or containing any information, which is subsequently proven false, shall be considered non-responsive, and shall be rejected by the Rodeo Sanitary District.

Signed \_\_\_\_\_  
Name \_\_\_\_\_  
Contractor \_\_\_\_\_  
By \_\_\_\_\_  
Title \_\_\_\_\_  
Contractor License No. \_\_\_\_\_  
License Classification \_\_\_\_\_  
Expiration Date \_\_\_\_\_  
Dated \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_

**\*\*\* END OF SECTION \*\*\***

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**SECTION 00310**

**BID SCHEDULE**

**2024 WPCP Primary Clarifier Improvement Project**

**ARTICLE 1 – BASE BID**

<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>Estimated Quantity</b>	<b>Unit Bid Price</b>	<b>Total Bid Price</b>
1	Mobilization	LS	1		
2	Demolition	LS	1		
3	Primary Clarifier Equipment	LS	1		
4	Primary Clarifier Allowance	LS	1	\$5,000	\$5,000
5	Bridge Replacement	LS	1		
6	Handrailing	LF	90		
7	Protective Coating System for Primary Clarifier	LS	1		
8	Concrete Surface Repair	LS	1		
9	Electrical, Instrumentation, and Controls	LS	1		
	<b>TOTAL BASE BID</b>	<b>\$</b>			

Total amount bid (the summation of bid items 1 through 9),

Base Bid for \_\_\_\_\_ dollars (amount in words)

\$ \_\_\_\_\_ (amount in \$).

Bid amount of each of the above Bid Items must be filled in and completed.

Bid items shall be as specified in the Contract Documents.

**\*\*\* END OF SECTION \*\*\***

Name of Bidder: \_\_\_\_\_

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**SECTION 00410**

**BID GUARANTY BOND**  
(To Accompany Bid)

KNOW ALL PERSONS BY THESE PRESENTS:

THAT \_\_\_\_\_, hereinafter called the principal, and \_\_\_\_\_, hereinafter called the Surety, are jointly and severally held and firmly bound unto the Rodeo Sanitary District, Rodeo, California, a public entity, hereinafter called the Obligee, each in the penal sum of ten percent of the total amount of the Base Bid Proposal of the Principal for the Work, this sum not to exceed \_\_\_\_\_ dollars of lawful money of the United States for the payment whereof unto the Obligee, the Principal and Surety jointly and severally bind themselves forever.

WHEREAS, the Principal is herewith submitting its offer for the fulfillment of Obligee’s Contract for:

**2024 WPCP Primary Clarifier Improvement Project**

NOW, THEREFORE, the condition of this obligation is such that if the Principal is awarded the Contract, and if the Principal within the time specified in the proposal for such Contract enters into, executes and delivers to the Obligee an agreement in the form specified in the Contract Documents complete with evidences of insurance specified in the Contract Documents, and if the Principal within the time specified in the proposal gives to the Obligee the payment and performance bonds specified in the Contract Documents, then this obligation shall be void; otherwise, the Principal and Surety will pay unto the Obligee the difference in money between the total amount of the proposal of the Principal and the amount for which the Obligee legally contracts with another party to fulfill the Contract if the latter amount be excess of the former, but in no event shall the Surety's liability exceed the penal sum hereof.

AND IT IS HEREBY DECLARED AND AGREED that the Surety shall be liable under this obligation as Principal, and that nothing of any kind or nature whatsoever that will not discharge the Principal shall operate as a discharge or a release of liability of the Surety.

IT IS HEREBY FURTHER DECLARED AND AGREED that this obligation shall be binding upon and inure to the benefit of the Principal, the Surety and the Obligee and their respective heirs, executors, administrators, successors and assigns.

SIGNED AND SEALED THIS \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**\*\*\* END OF SECTION \*\*\***

Name of Bidder: \_\_\_\_\_

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**SECTION 00420**

**CERTIFICATION OF BIDDER'S  
EXPERIENCE AND QUALIFICATIONS  
(To Accompany Bid)**

The undersigned Bidder certifies that it is, at the time of bidding, and shall be, throughout the period of the Contract, licensed under the provisions of Chapter 9, Division 3, of the Business and Professions Code of the State of California, to do the type of work contemplated in the Contract Documents. Bidder shall further certify that it is skilled and regularly engaged in the general class and type of work called for in the Contract Documents.

The Bidder represents that it is competent, knowledgeable, and has special skills on the nature, extent, and inherent conditions of the work to be performed. Bidder further acknowledges that there are 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.

**1 ARTICLE 1 – ESSENTIAL REQUIREMENTS FOR QUALIFICATION**

If the answer to any of questions 1 through 3 is “no”, or if the answer to any of questions 4 through 7 is “yes”, the Bidder will be disqualified from being awarded the Contract. Where the bidder is unable to certify to any of the statements in question 8, the bidder shall attach an explanation to this section. Instructions for certification in question 8 and requirements for subcontractor certifications under question 8 are listed in Section 00800-Article 11.

**1. Bidder possesses a valid and current California Contractor’s license for the project for which it intends to submit a bid.**

 Yes No

**2. Bidder will comply with and provide all insurance as defined in Section 00800-Article 2, INDEMNITY AND INSURANCE.**

 Yes No

**3. Bidder has current Workers’ Compensation insurance policy as required by the Labor Code or is legally self-insured pursuant to Labor Code section 3700 et. seq.**

 Yes No

**4. Has your contractor’s license been revoked at any time in the last five (5) years?**

 Yes No

**5. Has a surety firm completed a contract on your behalf, or paid for completion because your firm was default terminated by the project owner within the last five (5) years?**

Yes       No

**6. At the time of submitting this qualification form, is your firm ineligible to bid on or be awarded a public works contract, or perform as a subcontractor on a public works contract, pursuant to either Labor Code section 1777.1 or Labor Code section 1777.7?**

Yes       No

**7. At any time during the last five (5) years, has your firm, or any of its owners or officers been convicted of a crime involving the awarding of a contract of a government construction project, or the bidding or performance of a government contract?**

Yes       No

**8. Bidder certifies to the best of its knowledge and belief, that it and its principals:**

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency;*
- b. Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;*
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and*
- d. Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.*

Yes       No

**2 ARTICLE 2 – PROJECT EXPERIENCE**

The Bidder shall list below at least five (5) projects completed in the last five (5) years of at least \$400,000 in Contract Amount involving water or wastewater treatment facilities that indicate the

Name of Bidder: \_\_\_\_\_

Bidder's experience as a Contractor. If the Bid is submitted by a Joint Venture, list at least four (4) completed projects. It is acceptable to submit this information on other forms as long as the information required below is included. Failure to provide this information with the Bid may render the Bid non-responsive and may be the basis for rejection of the Bid.

**1. Project Name:** \_\_\_\_\_

Owner: \_\_\_\_\_

Construction Cost: \$ \_\_\_\_\_

Construction Time: \_\_\_\_\_ Calendar Days

Owner's Representative: \_\_\_\_\_

Owner's Telephone No: (\_\_\_\_) \_\_\_\_\_

Date of Substantial Completion: \_\_\_\_\_

**2. Project Name:** \_\_\_\_\_

Owner: \_\_\_\_\_

Construction Cost: \$ \_\_\_\_\_

Construction Time: \_\_\_\_\_ Calendar Days

Owner's Representative: \_\_\_\_\_

Owner's Telephone No: (\_\_\_\_) \_\_\_\_\_

Date of Substantial Completion: \_\_\_\_\_

**3. Project Name:** \_\_\_\_\_

Owner: \_\_\_\_\_

Construction Cost: \$ \_\_\_\_\_

Construction Time: \_\_\_\_\_ Calendar Days

Owner's Representative: \_\_\_\_\_

Owner's Telephone No: (\_\_\_\_) \_\_\_\_\_

Date of Substantial Completion: \_\_\_\_\_

Name of Bidder: \_\_\_\_\_

**4. Project Name:** \_\_\_\_\_

Owner: \_\_\_\_\_

Construction Cost: \$ \_\_\_\_\_

Construction Time: \_\_\_\_\_ Calendar Days

Owner's Representative: \_\_\_\_\_

Owner's Telephone No: (\_\_\_\_) \_\_\_\_\_

Date of Substantial Completion: \_\_\_\_\_

**5. Project Name:** \_\_\_\_\_

Owner: \_\_\_\_\_

Construction Cost: \$ \_\_\_\_\_

Construction Time: \_\_\_\_\_ Calendar Days

Owner's Representative: \_\_\_\_\_

Owner's Telephone No: (\_\_\_\_) \_\_\_\_\_

Date of Substantial Completion: \_\_\_\_\_

**3 ARTICLE 3 – SAFETY QUALIFICATION CRITERIA**

The following information will be used to determine if you meet the minimum safety requirements for this project. To qualify to bid and be awarded the project, the contractor’s three year average Workers’ Compensation Experience Modification (EMR) must not be greater than 1.1 (110%). The Bidder shall list its Experience Modification Rate for the last three (3) complete years (available from your insurance carrier).

<u>Year</u>	<u>EMR</u>
_____	_____
_____	_____
_____	_____

Three Year Average = \_\_\_\_\_

Name of Bidder: \_\_\_\_\_

To verify the above information, the District will contact the Bidder's Workers' Compensation Insurance carrier. The Bidder shall authorize its carrier to release this information. Failure to release this information will result in the bid being non-responsive and result in automatic disqualification of the bid.

Worker's Compensation Insurance Company: \_\_\_\_\_

Contact Person for Insurance Company: \_\_\_\_\_

Telephone Number: ( \_\_\_\_\_ ) \_\_\_\_\_

Signed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Name of Bidder

\_\_\_\_\_  
Contractor's License No.

\_\_\_\_\_  
Expiration Date

\_\_\_\_\_  
Signature of Bidder

\_\_\_\_\_  
Title of Signatory

**\*\*\*END OF SECTION\*\*\***

Name of Bidder: \_\_\_\_\_

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Name of Bidder: \_\_\_\_\_

**SECTION 00430**

**DESIGNATION OF SUBCONTRACTORS**

(To Accompany Bid)

In accordance with California Public Contract Code, Section 4100 et. seq., as amended, the following is submitted concerning subcontractors: Each Bidder shall set forth below (a) name and the location of the place of business of each subcontractor who will perform work or labor, fabricate a portion of the Work or improvement according to the Contract Documents, or render service to the Contractor in or about the construction of the Work in an amount in excess of one-half (1/2) of one percent (1%) of the Contractor's total bid; and (b) the portion of the Work (type and trade) which will be done by each such subcontractor.

If a Contractor fails to specify a subcontractor or, if a Contractor specifies more than one subcontractor for the same portion of work to be performed under the Contract in excess of one-half (1/2) of one percent (1%) of the contractor's total Bid for any portion of the Work as above stated, the Contractor agrees that he/she is fully qualified to perform that portion himself/herself, and that the Contractor shall perform that portion himself/herself. Subcontractors work for which no subcontractor was designated in the original Bid and which is in excess of one-half (1/2) of one percent (1%) of the total Contract Price, will be allowed only with written consent of the District in accordance with applicable law.

If not provided on this form, the Contractor shall provide to the District the license number of each listed subcontractor within 24 hours after the deadline established by the District for receipt of bids.

Name of Subcontractor	Subcontractor License Number	Business Location	Description of Work to Perform	*Status

Name of Bidder: \_\_\_\_\_

\*Status      M = Minority Owned Business Enterprise  
                  W = Women Owned Business Enterprise  
                  DV = Disabled Veteran  
                  DBE = Disadvantage Business Enterprise

Additional supporting data may be attached to this section. Each page shall be sequentially numbered, headed "Proposed Subcontractors" and shall be signed.

**\*\*\* END OF SECTION \*\*\***

Name of Bidder: \_\_\_\_\_

**SECTION 00440**

**SITE VISIT AFFIDAVIT TO BE EXECUTED  
BY BIDDER, NOTARIZED AND SUBMITTED WITH BID  
(To Accompany Bid)**

State of California )  
 ) ss.  
County of \_\_\_\_\_ )

\_\_\_\_\_, being first duly sworn, deposes and says that he or she  
(Contractor's Authorized Representative)

is \_\_\_\_\_ of \_\_\_\_\_  
(Title of Representative) (Contractor's Legal Name)

the party making the foregoing Bid, has visited the Project site as described in the Contract Documents and has examined and familiarized themselves with the existing conditions, as well as all other conditions relating to the construction which will be performed. The submitting of a Bid shall be considered an acknowledgment on the part of the Bidder of familiarity with conditions at the site of the Work and that the site examination has provided adequate and sufficient information related to existing conditions which may affect cost, progress or performance of the Work.

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_  
Type/Print Name of Bidder

\_\_\_\_\_  
Type/Print Representative's Name

\_\_\_\_\_  
Type/Print Title

\_\_\_\_\_  
Date

(Certificate of Acknowledgment to be executed by Notary on following page)

Name of Bidder: \_\_\_\_\_

State of California )  
 ) ss.  
County of \_\_\_\_\_ )

On \_\_\_\_\_, before me, \_\_\_\_\_ the  
(Date) (Name and Title of Officer)

undersigned, a notary public in and for the state, personally appeared

\_\_\_\_\_,  
(Name(s) of person(s) signing above document)

[ ] personally known to me [ ] proved to me on the basis of satisfactory evidence  
(check appropriate box)

to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity, and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

\_\_\_\_\_  
Notary Public

**\*\*\* END OF SECTION \*\*\***

Name of Bidder: \_\_\_\_\_

**SECTION 00480**

**NON-COLLUSION AFFIDAVIT TO BE EXECUTED  
BY BIDDER, NOTARIZED AND SUBMITTED WITH BID  
(To Accompany Bid)**

\_\_\_\_\_, being first duly sworn, deposes and says that he or she  
(Contractor's Authorized Representative)

is \_\_\_\_\_ of \_\_\_\_\_ the party making the foregoing Bid;  
(Title of Representative) (Contractor's Name)

that the Bid is not made in the interest of, or on behalf of, any undisclosed person, partner-ship, 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.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Subscribed and sworn to before me this  
\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_

Notary Public in and for the State of California

Public Contract Code Section 7106  
Code of Civil Procedure Section 2015.5

**\*\*\* END OF SECTION \*\*\***

Name of Bidder: \_\_\_\_\_

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**SECTION 00490**

**AFFIDAVIT OF SAFETY COMPLIANCE**  
(To Accompany Bid)

**2024 Water Pollution Control Plant Primary Clarifier Improvement Project**

The Contractor agrees in accordance with the requirements of Section 00700-4.07, **SAFETY**, that for purposes of California Labor Code Section 6400 and related provisions of law the Contractor, the Contractor's privities and any other entities acting pursuant to this Contract will be “employers” responsible for furnishing employment and a place of employment that is safe and healthful for the employees, if any, of such entities acting pursuant to this Contract and that the District will not be responsible for having hazards corrected and/or removed at the location where the work under the Contract is to be performed.

The Contractor hereby acknowledges District concerns regarding safety at its facility and at the Project worksite. The Contractor shall conduct its operations to eliminate or reduce hazards and risks associated with Contractor’s activities, to prevent accidents and injuries, and to prevent property damage. Therefore, the Contractor is fully responsible for and shall be in compliance with all of the most current safety, health and environmental regulations (federal, state and local). Non-compliance with these regulations may result in suspension or termination of work in progress. The Contractor’s Safety Programs must accomplish the foregoing objectives. The Contractor certifies that its Safety Programs comply and will satisfy these requirements. The Contractor also certifies that each Subcontractor and Sub-subcontractors and other parties with which it has agreements to perform work on the Project worksite will also comply and will satisfy these requirements.

Parts A, B, C and D of the attached Contractor Safety Operations Requirements are **not** required to be completed and submitted with the Bid. The completed forms shall be submitted for the District’s review with the Contractor’s Safety Program prior to commencement of work on the Project as required in Section 00700-4.07B, **SAFETY PROGRAM**. The Contractor certifies that it can furnish satisfactory evidence of compliance with the elements identified in the attached Contractor Safety Operations Requirements and the Contractor’s Safety Program. The Contractor further acknowledges that its Subcontractors and Sub-subcontractors will provide all Safety Compliance documents to Contractor in accordance with this Section 00490, **AFFIDAVIT OF SAFETY COMPLIANCE** and Section 00700-4.07, **SAFETY**.

Name of Bidder: \_\_\_\_\_

The Contractor acknowledges it has a confined space entry program understands the existing facilities identified as confined spaces therein and will comply with the safety considerations applicable to this Project. The District does not have a confined space entry program and District staff cannot enter confined spaces.

Executed On: \_\_\_\_\_, \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of Bidder

\_\_\_\_\_  
Name (Print)

\_\_\_\_\_  
Title

*(Attach a Certificate of Acknowledgement for the Notary to the Affidavit)*



Name of Bidder: \_\_\_\_\_

**CERTIFICATE OF ACKNOWLEDGMENT**

State of California )  
 )  
County of \_\_\_\_\_ )

On \_\_\_\_\_ before me, \_\_\_\_\_,  
*Date Name, Notary Public*

personally appeared \_\_\_\_\_,  
*Name, Title of Officer*

personally known to me - OR - proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

Witness my hand and official seal.

\_\_\_\_\_  
Signature of Notary

**CONTRACTOR SAFETY OPERATIONS REQUIREMENTS**  
**(To be submitted with Contractor’s Safety Program prior to commencing work)**

**PART A - Safety Programs**

Please indicate below whether your firm has the following written safety programs. If any of the programs listed do not apply to your operations or this project, please make note of this in the “Comments” column. Include any information that you think would be helpful to us in making this assessment. Those programs that are indicated as mandatory must be available for review before commencing work on this project. Other safety programs may be requested if it is later determined that they are applicable to the Project, and as such, must be made available for review upon request, at no additional charge to the District.

Program		Written Program		Program meets Cal/OSHA Criteria		Sub will Provide	Project Employees Trained		Training Documented		Comments
Mandatory	Name	Yes	No	Yes	No		Yes	No	Yes	No	
YES	Injury and Illness Prevention										
YES	Hazard Communication										
YES	Confined Space Operations										
	Respiratory Protection										
YES	Emergency Response										
YES	Hearing Conservation										
YES	Lockout/Tagout										
YES	New Employee Orientation										
YES	Excavation Safety										
YES	Code of Safe Practices										
YES	Personal Protective Equipment (PPE)										
YES	Drugs/Alcohol										
YES	Traffic Control Safety										
YES	Fall Prevention Plan <sup>1</sup>										

<sup>1</sup> If conventional fall protection measures cannot be used.

Name of Bidder: \_\_\_\_\_

**PART B - Safety Equipment**

Identify what safety equipment will be available and used for this project.

<b>Type</b>	<b>Description / Comments</b>
<input type="checkbox"/> Gas Detectors	
<input type="checkbox"/> Ventilation Equipment	
<input type="checkbox"/> Approved Harnesses and Lanyards	
<input type="checkbox"/> Mechanical Hoists	
<input type="checkbox"/> Fire Extinguishers	
<input type="checkbox"/> First Aid Kits	
<input type="checkbox"/> Respirators	
<input type="checkbox"/> Hard Hats	
<input type="checkbox"/> Hearing Protection	
<input type="checkbox"/> Safety Goggles	
<input type="checkbox"/> Steel Toed Footwear	
<input type="checkbox"/> Hand Protection	
<input type="checkbox"/> Fall Protection	
<input type="checkbox"/> Confined Space Rescue Equipment	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

Name of Bidder: \_\_\_\_\_

**PART C - Specialized Training and Certification**

Identify the areas of specialized training or certification that will have been completed by employees who will be assigned to this project. Be prepared to provide documentation as requested.

<input type="checkbox"/>	CPR / First Aid	<input type="checkbox"/>	Fork Lift Operation
<input type="checkbox"/>	Cranes / Hoists Operation	<input type="checkbox"/>	Heavy Equipment Operation
<input type="checkbox"/>	Powder-Actuated Tools Use	<input type="checkbox"/>	Confined Space Operations and Rescue
<input type="checkbox"/>	Respirators	<input type="checkbox"/>	Trenching and Shoring Competent Person
	<input type="checkbox"/> Air-Supplying	<input type="checkbox"/>	Welding
	<input type="checkbox"/> Air-Purifying	<input type="checkbox"/>	Asbestos Abatement
<input type="checkbox"/>	Scaffolding	<input type="checkbox"/>	Flagging
<input type="checkbox"/>	Traffic Control		

**PART D – Jobsite Safety Practices**

1. Name of person who will have responsibility for jobsite safety?

\_\_\_\_\_

2. Who will be responsible for conducting and documenting accident investigations?

\_\_\_\_\_

Does your company perform near-miss investigations? \_\_\_\_\_  
Please provide sample copy of investigation forms.

3. How often are jobsite safety audits or inspections performed, \_\_\_\_\_  
and by whom? \_\_\_\_\_

4. Does the person who is responsible for jobsite safety have authority to take immediate action to correct unsafe conditions of work practices? \_\_\_\_\_

5. Who will be designated the competent person for excavation safety on the project?

\_\_\_\_\_

Provide substantiation of training for the competent person.

6. How often are jobsite tailgate or toolbox safety meetings held? \_\_\_\_\_

7. Briefly describe how you will ensure that workers comply with safety programs and Cal/OSHA requirements? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

8. Please list any Cal/OSHA citations and penalties you have received in the last three years.

\_\_\_\_\_

\_\_\_\_\_

9. Have there been any on-the-job fatalities at any job site managed by the Contractor in the last five years? \_\_\_\_\_ If yes, please explain.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10. Does your company have a safety incentive program? \_\_\_\_\_

If yes, please explain. \_\_\_\_\_

\_\_\_\_\_

Name of Bidder: \_\_\_\_\_

**PART E – Evaluation Worksheet  
(FOR USE BY THE DISTRICT ONLY)**

<b>Item</b>	<b>Mandatory Program</b>	<b>Contractor has Written Program</b>	<b>Contractor States Program Meets Cal/OSHA Criteria</b>	<b>Comments</b>
Part A: Safety Programs				
Part B: Safety Equipment				
Part C: Training & Certification				
Part D: Jobsite Safety Practice				
Responsible Person Named				
Accident Investigations				
Worksite Safety Inspections				
Competent Person				
Safety Meetings				
Compliance w/ Safety Requirements				
Cal/OSHA Citations/Penalties				
Fatalities				
Safety Incentives				

**\*\*\* END OF SECTION\*\*\***

**SECTION 00500**

**AGREEMENT FOR THE CONSTRUCTION OF**

**2024 WPCP PRIMARY CLARIFIER IMPROVEMENT PROJECT**

THIS AGREEMENT, made and concluded, in triplicate, this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, between the RODEO SANITARY DISTRICT (“District”), Rodeo, California, party of the first part, and \_\_\_\_\_ (“Contractor”), party of the second part.

The District and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

**WITNESSETH:**

1. That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the said party of the first part, and under the conditions expressed in the two bonds, bearing even date with these presents, and hereunto annexed, the said party of the second part agrees with the said party of the first part, at his/her own proper cost and expense, to do all the work and furnish all the materials necessary to construct and complete in good workmanlike and substantial manner the project entitled: **2024 Water Pollution Control Plant Primary Clarifier Improvement Project**, in strict conformity with the Contract Documents prepared therefore, which said Contract Documents are hereby specially referred to and by said reference made a part hereof.
  
2. Now, therefore, in consideration of the mutual covenants and agreements of the parties herein contained and to be performed, the Contractor hereby agrees to complete the Work in accordance with the terms and conditions stipulated in the Contract Documents for the sum of \_\_\_\_\_ (\$\_\_\_\_\_) computed in accordance with Contractor’s accepted proposal dated \_\_\_\_\_, 20\_\_\_\_, which accepted proposal is incorporated herein by reference thereto as if herein fully set forth. Compensation shall be based upon any lump sum bid items plus the unit prices stated in the Bid Schedule times the actual quantities or units of work and materials performed or furnished. The further terms, conditions, and covenants of this Agreement are set forth in the Contract Documents, each of which is by this reference made a part hereof. Payments are to be made to the Contractor in accordance with the provisions of the Contract Documents and the Technical Specifications in legally executed and regularly issued warrants of the District, drawn on the appropriate fund or funds as required by law and order of the District thereof.

3. The party of the first part hereby promises and agrees with the said Contractor to employ, and does hereby employ, the said Contractor to provide the materials and to do the Work according to the terms and conditions herein contained and referred to, for the prices aforesaid, and hereby contracts to pay the same at the time, in the manner and upon the conditions above set forth; and the said parties for themselves, their heirs, executors, administrators, successors and assigns, do hereby agree to the full performance of the covenants herein contained.
4. The Contractor and any subcontractor performing or contracting any work shall comply with all applicable provisions of the California Labor Code for all workers, laborers and mechanics of all crafts, classifications or types, including, but necessarily limited to the following:
  - (a) The Contractor shall comply with all applicable provisions of Section 1810 to 1815, inclusive, of the California Labor Code relating to working hours. The Contractor shall, as a penalty to the District, forfeit the sum of twenty-five dollars (\$25) for each worker employed in the execution of the Contract by the Contractor or by any subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one (1) calendar day and forty (40) hours in any one calendar week, unless such worker receives compensation for all hours worked in excess of eight (8) hours at not less than 1-1/2 times the basic rate of pay.
  - (b) Pursuant to the provision of California Labor Code, Sections 1770 et. seq., the Contractor and any subcontractor under him shall pay not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations. Pursuant to the provisions of California Labor Code Section 1773.2, the Contractor is hereby advised that copies of the prevailing rate of per diem wages and a general prevailing rate for holidays, Saturdays and Sundays and overtime work in the locality in which the work is to be performed for each craft, classification, or type of worker required to execute the Contract, are on file in the office of the District, which copies shall be made available to any interested party on request. The Contractor shall post a copy of said prevailing rate of per diem wages at each job site.
  - (c) As required by Section 1773.1 of the California Labor Code, the Contractor shall pay travel and subsistence payments to each worker needed to execute the Work, as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed in accordance with this Section.
  - (d) To establish such travel and subsistence payments, the representative of any craft, classification, or type of workman needed to execute the contracts shall file with the Department of Industrial Relations fully executed copies of collective bargaining agreements for the particular craft, classification or type of work involved. Such agreements shall be filed within ten (10) days after their execution and thereafter shall establish such travel and subsistence payments whenever filed thirty (30) days prior to the call for bids.



- (e) The Contractor shall comply with the provisions of Section 1775 of the California Labor Code and shall, as a penalty to the District, forfeit up to two hundred dollars (\$200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rate of per diem wages for each craft, classification, or type of worker needed to execute the contract. The Contractor shall pay each worker an amount equal to the difference between the prevailing wage rates and the amount paid worker for each calendar day or portion thereof for which a worker was paid less than the prevailing wage rate. Contractor is required to pay all applicable penalties and back wages in the event of violation of prevailing wage law, and Contractor and any subcontractor shall fully comply with California Labor Code Section 1775, which is incorporated by this reference as though fully set forth herein.
  
- (f) As required under the provisions of Section 1776 of the California Labor Code, Contractor and each subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, and straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work. Said payroll shall be certified and shall be available for inspection at all reasonable hours at the principal office of the Contractor on the following basis:
  - (1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.
  - (2) A certified copy of all payroll records enumerated in Paragraph 4(f), herein, shall be made available for inspection or furnished upon request to the District, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.
  - (3) A certified copy of all payroll records enumerated in Paragraph 4(f), herein, shall be made available upon request by the public for inspection or for copies thereof; provided, however, that a request by the public shall be made through the District, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to Paragraph 4(e) herein, the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the Contractor, subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal offices of the Contractor.

The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the division.

Each Contractor shall file a certified copy of the records, enumerated in Paragraph 4(f) with the entity that requested the records within ten (10) days after receipt of a written request. Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the District, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of the Contractor awarded the contract or performing the contract shall not be marked or obliterated. The Contractor shall inform the District of the location of the records enumerated under Paragraph 4(f) including the street address, city and county, and shall, within five (5) working days, provide a notice of change of location and address. The Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects the Contractor must comply with this Paragraph 4(f). In the event that the Contractor fails to comply within the 10-day period, he or she shall, as a penalty to the state or the District, forfeit \$100.00 dollars for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. Responsibility for compliance with Paragraph 4(f) lies with the Contractor.

- (g) The Contractor and any subcontractors shall, when they employ any person in any apprenticeable craft or trade, apply to the joint apprenticeship committee administering the apprenticeship standards of the craft or trade in the area of the construction site for a certificate approving the Contractor or subcontractor under the apprenticeship standards for the employment and training of apprentices in the area or industry affected; and shall comply with all other requirements of Section 1777.5 of the California Labor Code. The responsibility of compliance with California Labor Code Section 1777.5 during the performance of this contract rests with the Contractor. Pursuant to California Labor Code Section 1777.7, in the event the Contractor willfully fails to comply with the provisions of California Labor Code Section 1777.5, the Contractor shall be denied the right to bid on any public works contract for up to three (3) years from the date noncompliance is determined and be assessed civil penalties.
- (h) In accordance with the provisions of Article 5, Chapter 1, Part 7, Division 2 (commencing with Section 1860), and Chapter 4, Part 1, Division 4 (commencing with Section 3700) of the California Labor Code, the Contractor is required to secure the payment of compensation to its employees and for that purpose obtain and keep in effect adequate Workers' Compensation Insurance. If the Contractor, in the sole discretion of the District satisfies the District of the responsibility and capacity under the applicable Workers' Compensation Laws, if any, to act as self-insurer, the Contractor may so act, and in such case, the insurance required by this paragraph need not be provided.

The Contractor is advised of the provisions of Section 3700 of the California Labor Code, which requires every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code and shall comply with such provisions and have Employer's Liability limits of \$1,000,000 per accident before commencing the performance of the work of this Contract.

The Notice to Proceed with the Work under this Contract will not be issued, and the Contractor shall not commence work, until the Contractor submits written evidence that it has obtained full Workers' Compensation Insurance coverage for all persons whom it employs or may employ in carrying out the work under this Contract. This insurance shall be in accordance with the requirements of the most current and applicable state Workers' Compensation Insurance Laws. In accordance with the provisions of Section 1861 of the California Labor Code, the Contractor in signing this agreement certifies to the District as true the following statement: "I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract."

A subcontractor is not allowed to commence work on the project until verification of Workers' Compensation Insurance coverage has been obtained and verified by the Contractor and submitted to the Construction Manager for the District's review and records.

- (i) In accordance with the provisions of Section 1727 of the California Labor Code, the District, before making payment to the Contractor of money due under a contract for public works, shall withhold and retain therefrom all wages and penalties which have been forfeited pursuant to any stipulation in the contract, and the terms of Chapter 1, Part 7, Division 2 of the California Labor Code (commencing with Section 1720). But no sum shall be withheld, retained or forfeited, except from the final payment, without a full investigation by either the Division of Labor Standards Enforcement or by the District.
5. It is further expressly agreed by and between the parties hereto that should there be any conflict between the terms of the instrument and the bid proposal of the Contractor, then this instrument shall control, and nothing herein contained shall be considered as an acceptance of the said terms of said proposal conflicting herewith.
6. The Contractor agrees to provide and maintain insurance coverage, and to indemnify and save harmless the parties named and in the manner set forth in Section 00800-Article 2, **INDEMNITY AND INSURANCE**, of the Supplementary General Conditions of the Specifications.

The duty of Contractor to indemnify and save harmless, as set forth herein, shall include a duty to defend as set forth in Section 2778 of the California Civil Code; provided, however,

that nothing herein shall be construed to require Contractor to indemnify against any responsibility or liability in contravention of Section 2782 of the California Civil Code.

7. The Contractor shall diligently prosecute the work so that it shall be substantially completed within the time specified in Section 00800-1.01, **TIME ALLOWED FOR COMPLETION**.
8. Except as otherwise may be provided herein, Contractor hereby expressly guarantees for one (1) full year from the date of the Substantial Completion of the work under this Agreement and acceptance thereof by the District, to repair or replace any part of the work performed hereunder which constitutes a defect resulting from the use of inferior or defective materials, equipment or workmanship. If, within said period, any repairs or replacements in connection with the work are, in the opinion of the District, rendered necessary as the result of the use of inferior or defective materials, equipment or workmanship, Contractor agrees, upon receipt of notice from District, and without expense to District, to promptly repair or replace such material or workmanship and/or correct any and all defects therein. If Contractor, after such notice, fails to proceed promptly to comply with the terms of this guarantee, District may perform the work necessary to effectuate such correction and recover the cost thereof from the Contractor or its sureties.

In special circumstances where a particular item of work or equipment is placed in continuous service before substantial completion of the Work, the correction period for that item may start to run from an earlier date. This date shall be agreed upon by the Contractor and District on or before the item is placed in continuous service.

Any and all other special guarantees which may be applicable to definite parts of the work under this Agreement shall be considered as an additional guarantee and shall not reduce or limit the guarantee as provided by Contractor pursuant to this paragraph during the first year of the life of such guarantee.

9. The Contractor shall provide, on the execution of this Agreement, a good and sufficient corporate surety bond in the penal sum of one hundred percent (100%) of amount bid, which bond shall be on the form provided by the District in Section 00610, **BOND OF FAITHFUL PERFORMANCE**, and be conditioned upon the faithful performance of all Work required to be performed by the Contractor under this Agreement. The bond shall be liable for any and all penalties and obligations which may be incurred by Contractor under this Agreement. The corporate surety bond shall be issued by a corporate surety approved by the District's counsel. The corporate surety shall be authorized to conduct business in California. At its discretion, the District may request that a certified copy of the certificate of authority of the insurer issued by the Insurance Commissioner of the State of California be submitted by the surety to the District. At its discretion, the District may also require the insurer to provide copies of its most recent annual statement and quarterly statement filed with the Department of Insurance pursuant to Article 10 (commencing with Section 900) of Chapter 1 of Part 2 of Division 1 of the Insurance Code.
10. In addition to the bond required under Paragraph 9, hereof, Contractor shall furnish a good and sufficient corporate surety bond in the penal sum of one hundred percent (100%) of

amount of bid, which bond shall be on the form provided by the District in Section 00620, **PAYMENT BOND**, and conform strictly with the provisions of Chapter 7, Title 15, Part 4, Division 3, of the Civil Code of the State of California, and all amendments thereto. The corporate surety bond shall be issued by a corporate surety approved by the District's counsel. The corporate surety shall be authorized to conduct business in California. At its discretion, the District may request that a certified copy of the certificate of authority of the insurer issued by the Insurance Commissioner of the State of California be submitted by the surety to the District. At its discretion, the District may also require the insurer to provide copies of its most recent annual statement and quarterly statement filed with the Department of Insurance pursuant to Article 10 (commencing with Section 900) of Chapter 1 of Part 2 of Division 1 of the Insurance Code.

11. The Contractor may substitute securities for the amounts retained by the District to ensure performance of the Work in accordance with the provisions of Section 22300 of the Public Contract Code.
12. The Contractor shall be provided the time period specified in Section 01300-1.03, **MATERIAL AND EQUIPMENT SUBSTITUTIONS**, for submission of data substantiating a request for a substitution of an "or equal" item.
13. As required by Section 6705 of the California Labor Code and in addition thereto, whenever work under the Contract involves the excavation of any trench or trenches five feet or more in depth, the Contractor shall submit in advance of excavations, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards established by the Construction Safety Orders of the Division of Industrial Safety in Title 8, Subchapter 4, Article 6, California Code of Regulations, the plan shall be prepared by a registered civil or structural engineer employed by the Contractor, and all costs therefore shall be included in the price named in the Contract for completion of the work as set forth in the Contract Documents. Nothing in this Section shall be deemed to allow the use of a shoring, sloping, or other protective system less effective than that required by the Construction Safety Orders. Nothing in this Section shall be construed to impose tort liability on the District, the Design Consultant, Construction Manager nor any of their agents, consultants, or employees. The District's review of the Contractor's excavation plan is only for general conformance to the California Construction Safety Orders.

Prior to commencing any excavation, the Contractor shall designate in writing to the Construction Manager the competent person(s) with the authority and responsibilities designated in the Construction Safety Orders.

14. In accordance with Section 7104 of the Public Contract Code, whenever any work involves digging trenches or other excavations that extend deeper than four feet below the surface, the provisions of Section 00700-7.02, **DIFFERING SITE CONDITIONS**, shall apply.
15. In accordance with Section 7103.5 of the Public Contract Code, the Contractor and subcontractors shall conform to the following requirements. In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or subcontractor offers and agrees to assign to the District all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act [Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code], arising from purchases of goods, materials or services pursuant to this Contract or the subcontract. Such assignment shall be made and become effective at the time the District tenders final payment to the Contractor, without further acknowledgment by the parties.
16. In accordance with Section 4552 of the Government Code, the Contractor shall conform to the following requirements. In submitting a Bid to the District, the Contractor offers and agrees that if the Bid is accepted, it will assign to the District all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act [Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code], arising from purchase of goods, materials, or services by the Contractor for sale to the District pursuant to the Bid. Such assignment shall be made and become effective at the time the District tenders final payment to the Contractor.
17. Pursuant to Public Contract Code Section 7100, the acceptance by the Contractor of an undisputed payment made under the terms of the Contract shall operate as, and shall be, a release to the District, and their duly authorized agents, from all claim of and/or liability to the Contractor arising by virtue of the Contract related to those amounts. Disputed contract claims in stated amounts may be specifically excluded by the Contractor from the operation of the release.
18. In accordance with California Business and Professions Code Section 7030, the Contractor is required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against contractors if a complaint regarding a patent act or omission is filed within four years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within 10 years of the date of the alleged violation. Any questions concerning the Contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 26000, Sacramento, California 95826.
19. The acceptance of each payment made to Contractor under this Agreement shall constitute a warranty that all subcontractors, laborers and material suppliers on the Project have been paid for all work, material, labor provisions, provender, equipment, or other supplies and efforts made toward the construction of improvements.

20. **INDEMNIFICATION.** Contractor shall indemnify, defend with counsel acceptable to Owner, and hold harmless to the full extent permitted by law, the District and its officers, officials, employees, agents and volunteers, Design Consultant and its consultants for the Work and their respective agents and employees; and if one is designated by the District for the work, the Construction Manager and its consultants for the work and their respective agents and employees (collectively “the Indemnified Parties”) in accordance with the requirements of Section 00800-2.01E, **Indemnification.**
21. **SEVERABILITY.** If any term or portion of this Agreement is held to be invalid, illegal, or otherwise enforceable by a court of competent jurisdiction, the remaining provisions of this Agreement shall continue in full force and effect.
22. **NON-DISCRIMINATION.** The Contractor shall not discriminate on the basis of race, color, national origin or sex in their performance of this contract. The Contractor shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the Contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract.
23. **VENUE.** This Agreement shall be governed and construed by the laws of the State of California. The parties agree that jurisdiction and venue of any dispute shall be in the Superior Court of the State of California in the County of Contra Costa, exclusively.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

CONTRACTOR

By: \_\_\_\_\_

Title: \_\_\_\_\_

RODEO SANITARY DISTRICT

By: \_\_\_\_\_

Steven S, Beall, P.E., District Manager

**\*\*\* END OF SECTION \*\*\***

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**SECTION 00610**

**BOND OF FAITHFUL PERFORMANCE**

KNOW ALL PERSONS BY THESE PRESENTS: that, WHEREAS, the Board of Directors of the Rodeo Sanitary District, has awarded to:

---

hereinafter designated as the "Principal", a Contract for constructing

**2024 WPCP Primary Clarifier Improvement Project**

WHEREAS, the Principal is required under the terms of the Contract to furnish a bond for the faithful performance of the Contract:

NOW, THEREFORE, we, the Principal and \_\_\_\_\_ as Surety, are held and firmly bound unto the Rodeo Sanitary District, CA, in the penal sum of (\$ \_\_\_\_\_), lawful money of the United States, being not less than one hundred (100) percent of the Contract amount, 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, it or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and faithfully perform the covenants, conditions, and agreements of the Contract and any alterations made as therein provided, on it 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 the Rodeo Sanitary District, its officers and agents, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and virtue.

As a condition precedent to the satisfactory completion of the Contract, the above obligation in the amount of \_\_\_\_\_ Dollars, (\$ \_\_\_\_\_), being not less than one hundred (100) percent of the Contract amount, shall hold good for a period of one (1) year after the Substantial Completion and acceptance of the Work; and through the expiration of Warranty Period; and such additional time thereafter as may be specified in the Contract Documents. If the above bounded Principal, it or its heirs, executors, administrators, successors or assigns shall fail to make full, complete and satisfactory repair and replacements or totally protect the Rodeo Sanitary District from loss or damage made evident during the Warranty Period, and resulting from or caused by defective materials or faulty workmanship in the prosecution of the work done, the above obligation in the sum of \_\_\_\_\_ Dollars, (\$ \_\_\_\_\_), shall remain in full force and virtue otherwise the above obligation shall be void.

And the 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 Contract Documents accompanying the same shall any wise affect its obligations on this bond; and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, or to the Work, or to the Contract Documents.

In the event the Rodeo Sanitary District, or its successors or assigns, shall be the prevailing party in an action brought upon this bond, then in addition to the penal sum hereinabove specified, we agree to pay to Rodeo Sanitary District or its successors or assigns, a reasonable sum on account of attorney's fees in such action, which sum shall be fixed by the court.

IN WITNESS WHEREOF, the above bounded parties have executed this instrument under their seals this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

ATTEST:

\_\_\_\_\_  
Principal Secretary

\_\_\_\_\_  
Principal

(SEAL) By \_\_\_\_\_

\_\_\_\_\_  
Witness as to Principal

\_\_\_\_\_

\_\_\_\_\_  
Address

\_\_\_\_\_  
Address

\_\_\_\_\_  
Witness to Surety

\_\_\_\_\_  
Surety

\_\_\_\_\_  
Address

\_\_\_\_\_  
Address

\_\_\_\_\_  
Telephone

\_\_\_\_\_  
Attorney-in-Fact

\_\_\_\_\_  
Address

If CONTRACTOR is partnership, all partners must execute BOND.

**\*\*\* END OF SECTION \*\*\***

**SECTION 00620**

**PAYMENT BOND**

KNOW ALL PERSONS BY THESE PRESENTS: that, WHEREAS, the Board of Directors of the Rodeo Sanitary District has awarded to:

---

hereinafter designated as "Principal", a Contract for construction of:

**2024 WPCP Primary Clarifier Improvement Project**

WHEREAS, the Principal is required to furnish a bond in connection with the Contract, providing that if the Principal, or any of it or its subcontractors, shall fail to pay for any materials, provisions, or other supplies or teams used in, upon, for or about the performance of the Work contracted to be done, or for any work or labor thereon of any kind, the Surety of this bond will pay the same to the extent hereinafter set forth:

NOW, THEREFORE, we, the Principal and \_\_\_\_\_, as Surety, are held and firmly bound unto the Rodeo Sanitary District, CA, in the penal sum of \_\_\_\_\_ Dollars, (\$ \_\_\_\_\_), lawful money of the United States, being not less than one hundred percent of the Contract amount, 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 Principal, it or its heirs, executors, administrators, successors, or assigns, shall fail to pay for any materials, provisions, or other supplies or teams used in, upon, for or about the performance of the Work contracted to be done, or for any work or labor thereon of any kind, as required by the provisions of Act of the Legislature of the State of California entitled "An Act to secure the payment of persons who furnished materials, contractors in the performance of such work and prescribing the duties of certain public officers with respect thereto", approved May 10, 1919, as amended, (California Civil Code Section 3247, et. seq.), and provided that the persons, companies, or corporations so furnishing the materials, provisions, or other supplies, teams, appliances, or power to be used in, upon for, or about the performance of the Work contracted to be executed or performed, or any person, power for or contributing to the Work to be done, or any person who performs work or labor upon same, or any person who supplies both work and materials therefore, shall have complied with the provisions of the Act, then the Surety will pay the same in or to any amount not exceeding the amount herein above set forth, and also will pay in case suit is brought upon this bond, such reasonable attorney's fee as shall be fixed by the court, awarded and taxed as in the above-mentioned statute provided.

This bond shall inure to the benefit of any and all persons, companies and corporations entitled to file claims under the Act, so as to give a right of action to them or their assigns in any suit brought upon this bond.

And the 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 Contract Documents accompanying the same shall in any wise affect its obligations on this bond; and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, or to the Work, or to the Contract Documents.

IN WITNESS WHEREOF, the above bounded parties have executed this instrument under their seals this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

ATTEST:

\_\_\_\_\_  
Principal Secretary

\_\_\_\_\_  
Principal

(SEAL) By \_\_\_\_\_

\_\_\_\_\_  
Witness as to Principal

\_\_\_\_\_

\_\_\_\_\_  
Address

\_\_\_\_\_  
Address

\_\_\_\_\_  
Witness to Surety

\_\_\_\_\_  
Surety

\_\_\_\_\_  
Address

\_\_\_\_\_  
Address

\_\_\_\_\_  
Telephone

\_\_\_\_\_  
Attorney-in-Fact

\_\_\_\_\_  
Address

If CONTRACTOR is partnership, all partners must execute BOND.

**\*\*\* END OF SECTION \*\*\***

**SECTION 00630**

**ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION**

**2024 WPCP Primary Clarifier Improvement Project**

This Escrow Agreement is made and entered into by and between; the Rodeo Sanitary District, whose address is 800 San Pablo Avenue, Rodeo, CA 94572; hereinafter called "District", and

\_\_\_\_\_ (Contractor)

whose address is \_\_\_\_\_

hereinafter called "Contractor", and \_\_\_\_\_

(Escrow Agent)

whose address is \_\_\_\_\_

hereinafter called "Escrow Agent."

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

1. Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities which meet the requirements set forth in Section 22300, with Escrow Agent, as a substitute for retention earnings required to be withheld by District pursuant to the Construction Contract entered into between District and Contractor for \_\_\_\_\_ in the amount of \_\_\_\_\_ dated \_\_\_\_\_ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the District shall make payments of the retention earnings directly to the Escrow Agent. When Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the District within ten (10) days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the District and Contractor. Securities shall be held in the name of District, and shall designate the Contractor as the beneficial Owner.
2. District shall make progress payments to Contractor for such funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.
3. When the District makes payment of retentions earned directly to the Escrow Agent the Escrow Agent shall hold them for the benefit of the Contractor until such time as the escrow created under this Contract is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this Agreement and the rights and

responsibilities of the parties shall be equally applicable and binding when the District pays the Escrow Agent directly.

4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account, and all expenses of the District. These expenses and payment terms shall be determined by the District, Contractor, and Escrow Agent.
5. The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the District.
6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from District to the Escrow Agent that District consents to the withdrawal of the amount sought to be withdrawn by Contractor.
7. The District shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven (7) days' written notice to the Escrow Agent from the District of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the District.
8. Upon receipt of written notification from the District certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.
9. Escrow Agent shall rely on the written notifications from the District and the Contractor pursuant to Sections (5) to (8), inclusive, of this Agreement, and District and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.
10. The names of the persons who are authorized to give written notice or to receive written notice on behalf of the District and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On Behalf of District:

On Behalf of Contractor:

---

Title

---

Title

---

Name

---

Name

---

Signature

---

Signature

---

Address

---

Address

On Behalf of Escrow Agent:

---

Title

---

Name

---

Signature

---

Address

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

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

District:

Contractor:

\_\_\_\_\_

Title

\_\_\_\_\_

Title

\_\_\_\_\_

Name

\_\_\_\_\_

Name

\_\_\_\_\_

Signature

\_\_\_\_\_

Signature

**\*\*\* END OF SECTION \*\*\***



**SECTION 00650**

**GENERAL LIABILITY ENDORSEMENT (FORM A-1)**

***(THE DISTRICT WILL ACCEPT EQUIVALENT ENDOREMENT FORMS PROVIDED BY THE INSURANCE PROVIDER WITH THE REQUIRED INFORMATION)***

RODEO SANITARY DISTRICT (District)  
800 San Pablo Avenue  
Rodeo, CA 94572

**2024 WPCP Primary Clarifier Improvement Project**

**ARTICLE 1 – POLICY INFORMATION**

- 1. Insurance Company: \_  
 Policy Number: \_\_\_\_\_  
 Policy Term (From) \_\_\_\_\_(To)\_\_\_\_\_  
 Endorsement Effective Date: \_\_\_\_\_
- 2. Named Insured: \_\_\_\_\_
- 3. Address of Named Insured: \_\_\_\_\_
- 4. Limit of Liability Any One Occurrence / Aggregate  
 \$ \_\_\_\_\_
- 5. Deductible or Self-Insured Retention (Nil unless otherwise specified)  
 \$ \_\_\_\_\_

**ARTICLE 2 – POLICY AMENDMENTS**

This endorsement is issued in consideration of the policy premium. Notwithstanding any inconsistent statement in the policy to which this endorsement is attached or any other endorsement attached thereto it is agreed as follows:

- 1. **INSURED.** The District, Design Consultant, Construction Manager, District Engineer, and each of their officers, partners, employees, and agents are included as additional insureds with regard to damages and defense of claims arising from: (a) activities performed by or on behalf of the Named Insured, (b) products and completed operations of the Named Insured, or (c) premises owned, leased or used by the Named Insured.

- 2. **CONTRIBUTION NOT REQUIRED.** As respects: (a) work performed by the Named Insured for or on behalf of the District; or (b) products sold by the Named Insured to the District; or (c) premises leased by the Named Insured from the District, the insurance afforded by this policy shall be primary insurance as respects the District, the Design Consultant and the Construction Manager, and each of their officers, employees, and agents; or stand in an unbroken chain of coverage excess of the Named Insured's scheduled underlying primary coverage. In either event, any other insurance maintained by the District, the Design Consultant and the Construction Manager and each of their officers, employees, and agents shall be excess of this insurance and shall not contribute with it.
- 3. **SCOPE OF COVERAGE.** The policy: (1) if primary, affords coverage at least as broad as Insurance Services Office Commercial General Liability Coverage (occurrence form CG 0001, Edition 1987); or (2) if excess, affords coverage which is at least as broad as the primary insurance forms referenced in the preceding Section (1).
- 4. **SEVERABILITY OF INTEREST.** The insurance afforded by this policy applies separately to each insured who is seeking coverage or against whom a claim is made or a suit is brought, except with respect to the Company's limit of liability.
- 5. **PROVISIONS REGARDING THE INSURED'S DUTIES AFTER ACCIDENT OR LOSS.** Any failure to comply with reporting provisions of the policy shall not affect coverage provided to the District, the Design Consultant and the Construction Manager and each of their officers, employees, and agents.
- 6. **CANCELLATION NOTICE.** The insurance afforded by this policy shall not be suspended, voided, canceled, reduced in coverage or in limits except after thirty (30) days' prior notice by certified mail return receipt requested has been given to the District. Such notice shall be addressed as shown in the heading of this endorsement.

**ARTICLE 3 – INCIDENT AND CLAIM REPORTING PROCEDURE**

Incidents and claims are to be reported to the insurer at:

Attn: \_\_\_\_\_

*(Title)* *(Department)*

\_\_\_\_\_

*(Company)*

\_\_\_\_\_

*(Street Address)*

\_\_\_\_\_

*(Agency)* *(State)* *(Zip Code)*

\_\_\_\_\_

*(Telephone Number)*

**ARTICLE 4 – SIGNATURE OF INSURER OR UNDERWRITER**

I, \_\_\_\_\_ (print/type name), warrant that I have authority to bind the below listed insurance company and by my signature hereon do so bind this company. By signature below, the surety warrants that if requested by the District, it will furnish a certified copy of the certificate of authority issued by the Insurance Commissioner of the State of California.

Signature of: \_\_\_\_\_  
Insurer or Underwriter

(original signature required on endorsement furnished to the District)

ORGANIZATION: \_\_\_\_\_

TITLE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

TELEPHONE: ( ) \_\_\_\_\_

**\*\*\* END OF SECTION \*\*\***

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**SECTION 00651**

**AUTO LIABILITY ENDORSEMENT (FORM B-1)**

***(THE DISTRICT WILL ACCEPT EQUIVALENT ENDORSEMENT FORMS PROVIDED BY THE INSURANCE PROVIDER WITH THE REQUIRED INFORMATION)***

RODEO SANITARY DISTRICT ("District")  
800 San Pablo Avenue  
Rodeo, CA 94572

**2024 WPCP Primary Clarifier Improvement Project**

**ARTICLE 1 – POLICY INFORMATION**

- 1. Insurance Company: \_  
Policy Number: \_\_\_\_\_
- 2. Policy Term (From) \_\_\_\_\_ (To) \_\_\_\_\_  
Endorsement Effective Date: \_\_\_\_\_
- 3. Named Insured: \_\_\_\_\_
- 4. Address of Named Insured: \_\_\_\_\_
- 5. Limit of Liability Any One Occurrence / Aggregate  
\$ \_\_\_\_\_
- 6. Deductible or Self-Insured Retention (Nil unless otherwise specified)  
\$ \_\_\_\_\_

**ARTICLE 2 – POLICY AMENDMENTS**

This endorsement is issued in consideration of the policy premium. Notwithstanding any inconsistent statement in the policy to which this endorsement is attached or any other endorsement attached thereto it is agreed as follows:

- 1. **INSURED.** The District, the Design Consultant, the Construction Manager, District Engineer, and each of their officers, partners, employees, and agents are included as additional insureds with regard to damages and defense of claims arising from ownership, operation, maintenance, use, loading or unloading of any auto owned, leased, hired, or borrowed by the Named Insured, regardless of whether liability is attributable to the Named Insured or a combination of the Named Insured and the District, the Design Consultant and the Construction Manager and each of its officers, employees, and agents.

- 2. **CONTRIBUTION NOT REQUIRED.** As respects work performed by the Named Insured for or on behalf of the District, the insurance afforded by this policy shall: (a) be primary insurance as respects the District, the Design Consultant, and the Construction Manager and each of their officers, employees, and agents; or (b) stand in an unbroken chain of coverage excess of the Named Insured’s primary coverage. In either event, any other insurance maintained by the District, the Design Consultant and the Construction Manager and each of their officers, employees, and agents shall be excess of this insurance and shall not contribute with it.
- 3. **SCOPE OF COVERAGE.** The policy affords coverage to the Named Insured, which is at least as broad as Insurance Services Office form number CA 0001 (Ed. 1/87) covering automobile liability, Code 1 (“any auto”).
- 4. **SEVERABILITY OF INTEREST.** The insurance afforded by this policy applies separately to each insured who is seeking coverage or against whom a claim is made or a suit is brought, except with respect to the Company's limit of liability.
- 5. **PROVISIONS REGARDING THE INSURED'S DUTIES AFTER ACCIDENT OR LOSS.** Any failure to comply with reporting provisions of the policy shall not affect coverage provided to the District, the Design Consultant and the Construction Manager and each of their officers, employees, and agents.
- 6. **CANCELLATION NOTICE.** The insurance afforded by this policy shall not be suspended, voided, canceled, reduced in coverage or in limits except after thirty (30) days' prior notice by Certified Mail Return Receipt requested has been given to the District. Such notice shall be addressed as shown in the heading of this endorsement.

**ARTICLE 3 – INCIDENT AND CLAIM REPORTING PROCEDURE**

Incidents and claims are to be reported to the insurer at:

Attn: \_\_\_\_\_

*(Title)* *(Department)*

\_\_\_\_\_

*(Company)*

\_\_\_\_\_

*(Street Address)*

\_\_\_\_\_

*(Agency)* *(State)* *(Zip Code)*

\_\_\_\_\_

*(Telephone Number)*

**ARTICLE 4 – SIGNATURE OF INSURER OR UNDERWRITER**

I, \_\_\_\_\_ (print/type name), warrant that I have authority to bind the below listed insurance company and by my signature hereon do so bind this company. By signature below, the surety warrants that if requested by the District, it will furnish a certified copy of the certificate of authority issued by the Insurance Commissioner of the State of California.

Signature of: \_\_\_\_\_  
Insurer or Underwriter

(original signature required on endorsement furnished to the District)

ORGANIZATION: \_\_\_\_\_

TITLE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

TELEPHONE: ( ) \_\_\_\_\_

**\*\*\* END OF SECTION \*\*\***

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## SECTION 00700

### GENERAL CONDITIONS

#### ARTICLE 1 - GENERAL

##### 1.01 CONTRACT AGREEMENT

A Bidder to whom award is made shall execute a written Agreement and required supplementary documents and submit them to the District within ten (10) days after the Notice of Award has been received by the Bidder at the address given in Section 00300, **BID FORM**. The Agreement shall be made in the form adopted by the District and incorporated in Section 00500, **AGREEMENT**.

If the lowest responsive, responsible Bidder to whom award is made fails to enter into the Contract, as herein provided, the Bidder's Security will become the property of the District, and an award may be made to the next lowest responsive, responsible Bidder, and such Bidder shall fulfill every stipulation embraced herein as if it were the party to whom the first award was made. A corporation, partnership, or joint venture to which an award is made will be required, before the Agreement is finally executed, to furnish evidence of its corporate existence and evidence that the officer signing the Agreement and bonds for the corporation is duly authorized to do so in the form as stated in Section 00100-Article 3, **BIDDER'S SIGNATURE AND AUTHORITY**.

In the event the Contractor is a joint venture of two or more contractors, the grants, covenants, provisos and claims, rights, power, privileges and liabilities of the contract shall be construed and held to be several as well as joint. Any notice, order, direct request or any communication required to be or that may be given by the District or the Construction Manager to the Contractor under this Contract, shall be well and sufficiently given to all persons being the Contractor if given to any one or more of such persons. Any notice, request or other communication given by any one of such persons to the District or the Construction Manager under this Contract shall be deemed to have been given by and shall bind all persons being the Contractor.

If any part of the work to be done under this Contract is subcontracted, the subcontract shall be in writing and shall provide that all work to be performed thereunder shall be performed in accordance with the terms of the Agreement. The subcontracting of any or all of the work to be done will in no way relieve the Contractor of any part of its responsibility under the Contract. Certified copies of subcontract agreements will be provided by the Contractor to the District upon request.

Equipment supplied under this Contract shall be furnished in accordance with a written agreement, and such agreement shall provide that any equipment supply shall be performed in accordance with the terms of the Contract Documents. Certified copies of agreements for equipment supply will be provided by the Contractor to the District upon request.

The Contractor shall not assign, transfer, convey, or otherwise dispose of the Contract, or its right, title, or interest therein, or its power to execute such Contract, to any other person, firm, or corporation without previous consent in writing of the District.

#### 1.02 WRITTEN NOTICE AND SERVICE THEREOF

Any notice to any party relative to any part of this Contract shall be in writing and considered delivered and the service thereof completed, when the notice is posted, by certified or registered mail, to the party at its last given address, or delivered in person to the party or its authorized representative of the work. This includes notice of change of address.

#### 1.03 RIGHTS OF ACTION

No right of action shall accrue upon or by reason of this Agreement to or for the use or benefit of anyone other than the parties to this Agreement. The parties to this Agreement are the Contractor and the District.

#### 1.04 PLANS AND SPECIFICATIONS

The Contract Documents are complementary; what is called for by one is as binding as if called for by all. It is the intent of the Drawings and Specifications to describe a functionally complete and operable Project (and all parts thereof) to be constructed in accordance with the requirements of the Contract Documents. Any work, materials or equipment that may reasonably be inferred from the requirements of the Contract Documents or from prevailing custom or trade usage as being required to produce this intended result will be furnished and performed whether or not specifically called for. When words or phrases that have a well-known technical or construction industry or trade meaning are used to describe Work, materials or equipment, such words or phrases shall be interpreted in accordance with that meaning. The intent of the Drawings specifically includes the intent to depict construction that complies with all applicable laws, codes and standards. Subject to applicable law, including but not limited to California Public Contract Code Section 4100 et seq., and the terms of this Contract governing subcontracting, the Divisions and Sections of the Specifications and identifications of any Drawings shall not control Contractor in dividing the Work among subcontractors or suppliers or delineating the work to be performed by any specific trade.

Reasonably implied parts of the Work shall be performed as “incidental work” even though absent from the Drawings and Specifications. “Incidental” work shall be performed by Contractor without extra cost to District. Incidental work includes any work not shown on Drawings nor described in the Specifications, which is necessary or required to make each installation satisfactory, legally operable, functional, consistent with the intent of the Drawings and Specifications or the requirements of the Contract Documents. Incidental work shall be treated as if fully described in Specifications and shown on Drawings, and expense thereof shall be included in the Bid Price. Incidental work includes, but is not limited to, tasks required to be performed under Division 1 **GENERAL REQUIREMENTS** of the Specifications.

Upon Notice to Proceed, the Contractor may obtain from the District, free of charge, two (2) copies of the conformed Plans (half-size) and Specifications. The Contractor may also obtain from the District, free of charge, two (2) sets of full-size prints of the Plans. Additional sets of the Plans and Specifications may be procured at the cost of printing and binding. The Owner will also provide one electronic copy of the conformed Plans and Specifications upon receipt of an executed release from the Contractor. The Owner will furnish the release form at the Contractor's request.

Both the Plans and Specifications will be conformed by incorporating all addenda which may have been issued during the bid period to the original bid documents. These "Issued for Construction" documents will be provided no later than the date of the Notice to Proceed. The "Issued for Construction" documents will be produced for the convenience and efficiency of all parties involved with construction. In the event of a discrepancy or failure to include a specific item of any addendum, the addendum as issued during the bid period shall take precedence over the "Issued for Construction" documents. Additional sets of the Plans and Specifications may be procured at the cost of printing and binding.

The Contractor shall keep on the work site a copy of the Plans and Specifications and shall at all times give the Construction Manager access thereto. Any Drawings included in the Specifications shall be regarded as part thereof and of the Contract. Anything mentioned in these Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in these Specifications, shall be of like effect as though shown or mentioned in both. The Construction Manager will furnish from time to time such drawings, plans, profiles, and information, as it may consider appropriate for the Contractor's guidance. Unless otherwise provided in the Contract Documents, it shall be the duty of the Contractor to see that all provisions are complied with in detail irrespective of the inspections given the work during its progress by the authorized official or its representatives. Any failure on the part of the Contractor to observe the Contract Documents will be sufficient cause for the rejection of the work at any time before its acceptance.

Wherever reference specifications are referred to in these Specifications without designation of year, the reference is to the current or revised specification effective at the time of the District receiving bids, unless otherwise referenced in Section 01060, **REGULATORY REQUIREMENTS AND PERMITS**.

#### 1.05 APPLICABILITY OF ALL PARAGRAPHS OF SPECIFICATIONS

The technical specifications are presented in paragraphs for convenience. However, this presentation does not necessarily delineate trades or limits of responsibility. All paragraphs of the Plans and Specifications are interdependent and applicable to the project as a whole.

The Specifications and all notes on the Drawings are directed to the Contractor and all Work shall be performed by the Contractor even though phrases such as "the Contractor shall" or "shall be done by the Contractor" are omitted. Where terms such as "approved," "acceptable," "favorably reviewed," "review," "selected," "directed," "equivalent," "equal," or "satisfactory" are used, it shall mean by or to the Construction Manager and/or Design Consultant.

## 1.06 CONTRACT INTERPRETATION BY THE CONSTRUCTION MANAGER

Any discrepancies found between the Contract Documents and site conditions or any inconsistencies or ambiguities in the Contract Documents shall be immediately reported, in writing, to the Construction Manager. Questions regarding the meaning and intent of the Contract Documents shall be referred in writing by the Contractor to the Construction Manager with a Request for Information. The Construction Manager shall respond to the Contractor in writing with a decision within fifteen (15) days of receipt of the request, or if it is necessary to extend this period, the Construction Manager shall notify the Contractor in writing as to when a decision will be provided.

Work done by the Contractor after its discovery of such discrepancies, inconsistencies or ambiguities without such notice and prior to response from the Construction Manager shall be done at the Contractor's risk.

## 1.07 ORDER OF PRECEDENCE

In resolving inconsistencies among two or more sections of the Contract Documents, precedence shall be given in the following order:

1. Addenda, Supplemental Agreements and Change Orders, the one dated later having precedence over another dated earlier.
2. Agreement (Section 00500)
3. Permits
4. General Requirements (Sections 01000-01999)
5. Supplementary General Conditions (Section 00800)
6. Instructions to Bidders (Section 00100)
7. General Conditions (Section 00700)
8. Project Plans
9. Technical Specifications (Section 02000 and all others following)
10. Typical Details
11. Reference/Standard Specifications
12. Reference/Standard Plans

Figure dimensions on Drawings shall govern over scaled dimensions, and detailed Drawings shall govern over general or standard Drawings.

## 1.08 BONDS

The successful Bidder shall, at the time of signing the Agreement, furnish the Bond of Faithful Performance (Section 00610) and the Payment Bond (Section 00620) executed by an admitted surety authorized to conduct business in California and be made payable to the "Rodeo Sanitary District."

The Payment Bond shall be in amount equal to one hundred percent (100%) of the Contract amount and shall be for payment of just claims for materials, equipment, labor and subcontractors employed by the Contractor thereon.

The Bond of Faithful Performance shall be in an amount equal to one hundred (100) percent of the Contract amount and shall be for the faithful performance of the Contract, and for the fulfillment of such other requirements as may be provided by Law. The performance bond shall remain in effect to guarantee the repair and replacement of defective equipment, materials, and workmanship, and payment of damages sustained by the District on account of such defects, discovered within one (1) year after final acceptance by the District, for the Work performed under the Contract which, shall remain in effect for a period of one (1) year, to guarantee the repair and replacement, and payments for damages.

Attorneys-in-fact, who sign bid bonds or contract bonds, must file with each bond a notarized and effectively dated copy of their power of attorney as required on bond forms supplied by the District for Contractor use in Sections 00610 and 00620.

The surety company shall familiarize itself with all of the conditions and provisions of this Contract, and it waives the right of special notification of any change or modification of this Contract or of extension of time, or of decreased or increased work, or of the cancellation of the Contract, or of any other act or acts by the District or its authorized agents under the terms of this Contract; and failure to so notify the aforesaid surety companies of changes shall not relieve the surety companies of their obligations under this Contract.

#### 1.09 PENALTY FOR COLLUSION

If, at any time, it is found that the person, firm, or corporation to whom the Contract has been awarded has, in presenting any Bid or Bids, colluded with any other party or parties, then the Contract may at the District's sole election be declared null and void, and the Contractor and its sureties shall be liable for loss or damage which the District may suffer thereby, and the District may advertise for new Bids.

#### 1.10 RIGHTS AND REMEDIES

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to, and not a limitation of, any duties, obligations, rights, and remedies otherwise imposed or available by law.

No action or failure to act by the District, the Design Consultant, or the Construction Manager shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

## ARTICLE 2 - CONTRACT ADMINISTRATION

### 2.01 ADMINISTRATION OF THE CONTRACT

The District's Representative, the Construction Manager, and the Design Consultant will provide administration of the Contract as hereinafter described. These parties are designated in Section 00800-1.05, **CONTRACT ADMINISTRATION**. If the status of any of the above parties should change, the District will provide written notice to the Contractor of such change.

In case of the termination of the employment of the Design Consultant or the Construction Manager, the District shall appoint a Design Consultant or a Construction Manager whose status under the Contract Documents shall be that of the former Design Consultant or Construction Manager, respectively.

### 2.02 DISTRICT'S REPRESENTATIVE

- A. General - The District's Representative has the authority to act on behalf of the District on change orders, progress payments, Contract decisions, acceptability of the Contractor's work, and early possession.
- B. Change Orders - The District's Representative has the authority to accept or reject Change Orders and cost proposals submitted by the Contractor or as recommended by the Construction Manager.
- C. Progress Payments - The District's Representative has the authority to accept or reject requests for progress payments which have been submitted by the Contractor and recommended by the Construction Manager.
- D. Contract Decisions - Should the Contractor disagree with the Construction Manager's decision with respect to the Contract, the Contractor may appeal to the District's Representative in accordance with the provisions of the Contract.
- E. Acceptability of Work - The District's Representative has the authority to make the final determination of the acceptability of the Work. The District's Representative also has the authority to accept or reject the Design Consultant's recommendations regarding retention of defective work as provided.

### 2.03 CONSTRUCTION MANAGER

- A. General - The Construction Manager is a representative of the District employed to act as advisor and consultant to the District in construction matters related to the Contract. The term Construction Manager may include more than one individual to perform Contract administration and construction observation. Hereinafter, the term Construction Manager includes any and all designated representatives working under the direction of the Construction Manager.

All instructions to the Contractor and all communications from the Contractor to the District or the Design Consultant shall be forwarded through the Construction Manager. The Construction Manager will have authority to act on behalf of the District only to the extent provided in the Contract Documents. The District has delegated its authority to the Construction Manager to make initial decisions regarding questions which may arise as to the quality or acceptability of materials furnished and work performed, and as to the manner of performance and rate of progress of the work under the Contract. The Construction Manager shall interpret the intent and meaning of the Contract and shall make initial decisions with respect to the Contractor's fulfillment of the Contract and the Contractor's entitlement to compensation. The Contractor shall look initially to the Construction Manager in matters relating to the Contract.

The Construction Manager's authority to act under Section 00700-2.01, **ADMINISTRATION OF THE CONTRACT**, and any decision made by it in good faith either to exercise or not to exercise such authority, shall not be interpreted or construed as control or responsibility of any of the work performed under this Contract.

- B. Representative - The Construction Manager will observe the progress, quality, and quantity of the Work to determine, in general, if the Work is proceeding in accordance with the provisions of the Contract Documents. The Construction Manager shall not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work.

In accordance with the provisions detailed elsewhere in these General Conditions, the Construction Manager will make decisions relative to all matters of interpretation or execution of the Contract Documents.

- C. Observation and Inspections of Construction - The Construction Manager shall observe the construction and shall have the authority to reject work and materials which do not conform to the Contract Documents, and to require special inspection or testing.

Observation and inspection by an inspector is not an authorization to revoke, alter, or waive any requirements of the Specifications. Observation and inspection is the authorization to call the attention of the Contractor to any failure of the Work, materials or workmanship to conform to the Contract Documents. The inspector shall have this authority including the ability to reject materials or, in any emergency, suspend the Work. The Contractor may appeal any such issue which it disagrees with to the Construction Manager for decision. If the decision of the Construction Manager is not satisfactory to the Contractor, the Contractor may appeal such decision to the District's Representative.

- D. Acceptability of the Work - The Construction Manager has the authority to make a recommendation as to the acceptability of the Work.

- E. Change Orders - The Construction Manager has the authority to initiate Change Orders; to reject Change Orders proposed by the Contractor or Design Consultant; to negotiate and recommend acceptance of Change Orders; or to order minor changes in the Work at no cost to the District.
- F. Construction Schedule - The Construction Manager has the authority to review and recommend acceptance of the Progress Schedule submitted by the Contractor at the start of the Work and subsequent significant revisions for conformance to the specified sequence of work and logic.
- G. Progress Payments - The Construction Manager has the authority to recommend acceptance or rejection of requests for progress payments which have been submitted by the Contractor.
- H. Final Payment - The Construction Manager, with the assistance of the Design Consultant, will conduct inspections to determine the dates of Substantial Completion of the Work and final completion of the Work, and will receive and forward to the District, for the District's review, written warranties, and related documents required by the Contract and assembled by the Contractor.

#### 2.04 DESIGN CONSULTANT

- A. General - The Design Consultant will have the authority to act on behalf of the District only to the extent provided in the Contract Documents.
- B. Interpretations - The Design Consultant has the authority to be the initial interpreter of the technical requirements of the Contract Documents. Either party to the Contract may make written request to the Construction Manager for interpretations necessary for the proper execution or progress of the Work. The Construction Manager shall refer such written requests to the Design Consultant, who will render such interpretations. Where the Contractor has requested an interpretation from the Construction Manager, or been notified by the Construction Manager that such interpretation has been requested by the District, any work done before receipt of such interpretations, if not in accordance with same, shall be removed and replaced or adjusted as directed by the Construction Manager without additional expense to District.
- C. Acceptability of the Work - The Design Consultant has the authority to make a recommendation as to the acceptability of the Work. The Design Consultant has the authority to recommend acceptance regarding the retention of defective work.
- D. Submittal - The Design Consultant shall receive, through the Construction Manager, shop drawings, product data and samples for review in accordance with Section 01300, **SUBMITTALS**.

The Design Consultant has the authority to review and take other appropriate action upon the Contractor's submittal such as shop drawings, product data and samples,



but only for conformance with the design concept of the Work and the information given in the Contract Documents.

## **ARTICLE 3 - DISTRICT**

### **3.01 GENERAL**

The District, acting through the District's Representative or the Construction Manager, shall have the authority to act as the sole judge of the Work and materials with respect to both quantity and quality as set forth in the Contract.

### **3.02 ATTENTION TO WORK**

The District's, Construction Manager's and Design Consultant's representatives are designated in Section 00800-1.05, **CONTRACT ADMINISTRATION**. The Construction Manager's designated representative will normally be available at the Site of the Work. An alternate representative will be designated when the designated Construction Manager's representative is not available at the Site of the Work.

### **3.03 OBSERVATION AND INSPECTION**

In addition to the Construction Manager's designated representative, the District may provide one or more inspectors to the Construction Manager to observe the work and with the same authority as provided for in Section 00700-2.03C, **OBSERVATION AND INSPECTIONS OF CONSTRUCTION**.

Separate and independent from the observations and inspections above, the project may be inspected by Building Officials for code compliance. Such inspectors shall have the authority provided to them by local jurisdiction.

### **3.04 DISTRICT'S RIGHT TO USE OR OCCUPY**

The District reserves the right, prior to Substantial Completion, to occupy, or use, any completed part or parts of the Work, providing these areas have been approved for occupancy by the District. The exercise of this right shall in no way constitute an acceptance of such parts, or any part of the Work, nor shall it in anyway affect the dates and times when progress payments shall become due from the District to the Contractor or in any way prejudice the District's rights in the Contract, or any bonds guaranteeing the same. The Contract shall be deemed completed only when all the Work contracted has been duly and properly performed and accepted by the District.

Prior to such occupancy or use, the District and Contractor shall agree in writing regarding the responsibilities assigned to each of them for payments, security, maintenance, heat, utilities, damage to the Work, insurance, the period for correction of the Work, and the commencement of warranties required by the Contract Documents.

In exercising the right to occupy or use completed parts of the Work prior to the Substantial Completion thereof, the District shall not make any use which will materially increase the

cost to the Contractor, without increasing the Contract Amount, nor materially delay the completion of the Contract, without extending the time for completion.

The part or parts of the Work, if any, which the District anticipates the use or occupancy of prior to Substantial Completion are noted in Section 01010-1.03, **OCCUPANCY REQUIREMENTS**. Failure to include a part of the Work in the above referenced section, shall not limit the District's right to use or occupy parts of the Work not listed.

### 3.05 DISTRICT'S RIGHT TO CARRY OUT THE WORK

If the Contractor should neglect to prosecute the Work properly or fail to perform any provision of the Contract, and fails within five days after receipt of written notice from the District to commence and continue correction of such neglect or deficiency with diligence and promptness, the District may, and without prejudice to any other remedy, make good such default, neglect or failure.

The District also reserves the right to perform any portion of the Work due to an emergency threatening the safety of the Work, public, District, and any property or equipment.

In either case, a Change Order shall be issued unilaterally deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies and/or for performing such work, including compensation for the Design Consultant's, the Construction Manager's, and District's additional services made necessary by such default, neglect, failure, or emergency.

### 3.06 DISTRICT'S RIGHT TO PERFORM WORK AND TO AWARD SEPARATE CONTRACTS

The District reserves the right to perform work related to the Project with the District's own forces, and to award separate Contracts in connection with the Project or other work on the Site. If the Contractor claims that delay, damage, or additional cost is involved because of such action by the District, the Contractor shall make such claim as provided elsewhere in the Contract Documents.

When separate Contracts are awarded for different portions of the Project or other work on the Site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Agreement.

The District will provide for the coordination of the work of the District's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate therewith as provided in Section 00700-4.10, **COOPERATION WITH OTHER CONTRACTORS**.

### 3.07 RESPONSIBILITY OF THE DISTRICT

The District shall not be held responsible for the care or protection of any material or parts of the Work prior to the final Acceptance, except as expressly provided in these Specifications.

## ARTICLE 4 - CONTRACTOR

### 4.01 STATUS OF CONTRACTOR AND SUBCONTRACTORS

- A. It is stipulated and agreed that the Contractor shall be an independent contractor in the performance of this Contract and shall have complete charge of persons engaged in performance of the Work. The Contractor shall perform the Work in accordance with its own methods, subject to compliance with the requirements of the Contract.
- B. Subcontractors will not be recognized as having a direct relationship with the District. The persons engaged in the Work, including employees of subcontractors and suppliers, will be considered employees of the Contractor and their work shall be subject to the provisions of the Contract. References in these Contract Documents to actions required of subcontractors, manufacturers, suppliers, or any person other than the Contractor, the District or the Construction Manager shall be interpreted as requiring that the Contractor shall require such subcontractor, manufacturer, supplier or person to perform the specified action.

The Contractor shall not employ any subcontractors that are not properly licensed in accordance with State law. Prior to commencement of any work by a subcontractor, the Contractor shall submit verification to the Construction Manager that the subcontractor is properly licensed for the work it will perform.

Contractor shall be fully responsible to District for the performance, acts and omissions of its subcontractors, and of persons directly or indirectly employed by them. Each subcontract shall expressly incorporate by reference the terms of this Contract, including the following provisions:

- Each subcontractor shall carry insurance as required by this Contract, and provide evidence of such insurance, as provided in Section 00800-2.01, **INSURANCE**.
- Each subcontractor shall be obligated to defend, indemnify, and hold the District harmless from all claims arising from the subcontractor's portion of the Work in the same manner as Contractor.
- Each subcontractor shall grant District a license to use its drawings and design materials as provided in the Agreement.
- Each subcontract shall acknowledge the District's right to suspend or terminate the Contract, and waive any right to anticipate profits in the event of such termination.

The removal and/or substitution of any subcontractor listed in Section 00430, **DESIGNATION OF SUBCONTRACTORS**, shall be made by the Contractor and District as provided for in Public Contract Code Section 4100 et. seq.

#### 4.02 CONTRACTOR'S REPRESENTATIVE

The Contractor shall designate in writing, before starting work, an authorized representative who shall have complete authority to represent and to act for the Contractor. The authorized representative, or designated alternate, that has the authority to act in matters relating to the Contract, shall be personally present at the work site at all times while work is actually in progress on the Contract. During periods when work is suspended, arrangements acceptable to the Construction Manager shall be made for any emergency work that may be required. The Contractor's authorized representative, or designated alternate(s) shall be fluent and proficient in the English language in order to understand, receive, and carry out oral and written communications or instructions relating to all job functions and responsibilities.

When the Contractor consists of two or more persons, firms, partnerships, or corporations functioning on a joint venture basis, the Contractor shall designate in writing to the Construction Manager, the name of their authorized representative who shall have supreme authority to direct the Work and to whom orders will be given by the Construction Manager, to be received and obeyed by the Contractor.

Information shall include the representative's name, street address, town, and telephone number, and the mailing address if different from the street address.

The Contractor shall give its personal attention to and shall supervise the Work to the end that it shall at all reasonable times be prosecuted faithfully; and when the authorized representative or designated alternate is not personally present on the Work, the representative shall at all reasonable times be represented by a competent superintendent or foreman who shall receive and obey all instructions or orders given under this Contract, and who shall have full authority to supply materials, tools, and labor without delay, and who shall be the legally appointed representative of the Contractor. The Contractor shall be liable for the faithful observation of any instructions delivered to the Contractor or to its authorized representative.

#### 4.03 LANDS AND RIGHTS OF WAY

With the approval of the Construction Manager, the Contractor may use portions of the District's site for storage of construction equipment, materials and field offices. The District will not accept any responsibility for damage or loss of the Contractor's equipment or materials stored on any project related site caused by vandalism, nature, or otherwise, suffered by the Contractor. Protection of all construction equipment, stores, and supplies shall be the sole responsibility of the Contractor. Where additional work space is desired by the Contractor, it shall be the Contractor's sole responsibility and expense to obtain such a space for its use.

#### 4.04 FEES AND PERMITS

The requirements for fees and permits are specified in Section 01060-1.02, **FEES AND PERMITS**.

#### 4.05 COMPLIANCE WITH LAWS

The Contractor shall keep itself and its subcontractors fully informed of all existing and future legislated State and Federal Laws and City and County ordinances and regulations which in any manner affect those engaged or employed in the Work, or the materials and equipment used in the Work, or which in any way affect the conduct of the Work, and all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. If any discrepancy or inconsistency is discovered in the Drawings, Specifications, or in any other part of this Contract, in relation to any such law, ordinance, regulation, order or decree, the Contractor shall forthwith report of the same to the Construction Manager in writing. The Contractor shall at all times observe and comply with all such existing and future laws, ordinances, regulations, orders and decrees; and shall protect and indemnify the District, the Construction Manager, the Design Consultant, and all of their officers, agents, employees and servants against any claim or liability arising from or based upon the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor itself or by its employees.

A. Particular attention is called to the following:

1. The Contractor shall abide by and shall include in its contracts and agreements with subcontractor(s) for the performance of Work on the District's Project a copy of the provisions the California Labor Code Sections 1771, 1775, 1776, 1777.5, 1813, and 1815.
2. Eight Hour Day Limitation – In accordance with the provisions of Division 2, Part 7, Chapter 1, Article 3 of the Labor Code, State of California, and in particular Sections 1810 to 1815 inclusive, thereof, eight (8) hours labor shall constitute a day's work and no laborer, worker, or mechanic in the employ of the Contractor, or any subcontractor doing or contracting to do any part of the Work contemplated by this Contract, shall be required or permitted to work more than eight (8) hours in any one calendar day, and forty (40) hours in any one calendar week unless compensated at not less than time and a half as set forth in California Labor Code Section 1815. However, if the prevailing wage determination requires a higher rate of pay for overtime than is required under Section 1815, then the overtime rate must be paid, as specified in California Code of Regulations Title 8, Group 3, Section 16200(a)(3)(F). The Contractor and each subcontractor shall also keep an accurate record showing the names and actual hours worked of all workers employed by them in connection with the work contemplated by this Contract, which record shall be open at all reasonable hours for the inspection of the District or its officers or agents and by the Division of Labor Standards Enforcement of the Department of Industrial Relations, their deputies or agents; and it is hereby further agreed that the Contractor shall forfeit as a penalty to the District, the sum of twenty-five and No/100 Dollars (\$25.00) for each laborer, worker or mechanic employed in the execution of this Contract by the Contractor or by any subcontractor for each calendar day during which such laborer, worker or mechanic is

required or permitted to labor more than eight (8) hours in any one calendar day and forty (40) hours in one calendar week in violation of this stipulation.

- B. Prior to commencing the Work, Contractor shall comply with the provisions of Labor Code 1777.5, including but not limited to the submission of contract award information to an applicable apprenticeship program that can supply apprentices to the site of the Work. Such information shall include an estimate of journeyman hours to be performed under this Contract, the number of apprentices proposed to be employed, and the approximate dates the apprentices would be employed. A copy of this information shall be submitted to the District if requested by the District.

A determination by the Chief of the Division of Apprenticeship Standards that Contractor or its subcontractors have knowingly violated Labor Code 1777.5 shall forfeit as a civil penalty an amount not exceeding one hundred dollars (\$100) for each full calendar day of noncompliance. Contractor or its subcontractor, who knowingly commits a second or subsequent violation of Labor Code 1777.5 within a three-year period, where the noncompliance results in apprenticeship training not being provided as required, shall forfeit as a civil penalty the sum of not more than three hundred dollars (\$300) for each full calendar day of noncompliance. Upon the receipt of a determination that a civil penalty has been imposed by the Chief of the Division of Apprenticeship Standards, the District shall withhold the amount of the civil penalty from the next progress payment then due or to become due Contractor.

- C. Receipt of Workers' Wages, Fee for Registering or Placing Persons In Public Works - Attention is directed to the provisions of Sections 1778 and 1779 of the California Labor Code, which read as follows:

Section 1778. "Every person, who individually or as a representative of an awarding or public body or officer, or as a contractor or subcontractor doing public work, or agent or officer thereof, who takes, receives or conspires with another to take or receive, for its own use or the use of any other person any portion of the wages of any workman or working subcontractor, in connection with services rendered upon any public work is guilty of a felony."

Section 1779. "Any person or agent or officer thereof who charges, collects, or attempts to charge or collect, directly or indirectly, a fee or valuable consideration for registering any person for public work, or for giving information as to where such employment may be procured, or for placing, assisting in placing, or attempting to place, any person in public work, whether the person is to work directly for the state, or any political subdivision or for a contractor or subcontractor doing public work is guilty of a misdemeanor."

- D. Labor Discrimination. Attention is directed to Section 1735 of the Labor Code, which reads as follows:

"No discrimination shall be made in the employment of persons upon public works because of the race, religious creed, color, national origin, ancestry, physical

disability, mental disability, medical condition, marital status, or sex of such persons, except as provided in Section 12940 of the Government Code, and every contractor for public works violating this section is subject to all the penalties imposed for violation of this chapter."

- E. Worker's Compensation Insurance - The provisions of Section 00800-2.01B, Worker's Compensation Insurance, shall be considered as repeated herein.
- F. Lateral and Subjacent Supports - Attention is directed to Section 832 of the Civil Code of the State of California relating to lateral and subjacent supports, and wherever structures or improvements adjacent to the excavation may be damaged by such excavation, the Contractor shall comply with this law. As provided in Labor Code Section 6707, a separate bid item is provided for costs of shoring and bracing of excavations five feet or more in depth.
- G. Safety Standards - The Contractor shall comply with all applicable provisions of the Safety and Health Regulations of Construction, promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Safety Standards Act (40 USC 327 et. seq.) as set forth in Title 29, C.F.R., CAL/OSHA, and the regulations issued thereunder. Compliance shall be the Contractor's sole responsibility, and neither the District, the Construction Manager nor the Design Consultant shall have any liability for non-compliance. See Section 00700-4.07, **SAFETY**, for additional safety requirements.

#### 4.06 COMPLIANCE WITH ENVIRONMENTAL LAWS

During construction, the Contractor shall comply with all pertinent requirements of Federal, State, and local environmental laws and regulations, including, but not limited to, the Federal Clean Air Act, State and local air pollution and noise ordinances, construction site erosion control regulations. Specific requirements are further specified in Section 01060, **REGULATORY REQUIREMENTS AND PERMITS**, and Section 01560, **TEMPORARY CONTROLS**.

#### 4.07 SAFETY

- A. Contractor's Safety Responsibility - The Contractor shall be solely and completely responsible for conditions of the jobsite, including safety of all persons and property during performance of the Work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to U.S. Department of Labor (OSHA), the California Occupational Safety and Health Act, and all other applicable Federal, State, County, and local laws, ordinances, codes, the requirements set forth below, and any regulations that may be detailed in other parts of these Contract Documents. In the event of conflicting requirements, the most stringent requirement as it pertains to the Contractor's safety responsibility, shall apply and shall be followed by the Contractor.

No provision of the Contract Documents shall act to make the District, the Construction Manager, Design Consultant or any other party than the Contractor

responsible for safety. The Contractor agrees that for purposes of California Labor Code Section 6400 and related provisions of law the Contractor, the Contractor's privities and any other entities acting pursuant to this Contract will be "employers" responsible for furnishing employment and a place of employment that is safe and healthful for the employees, if any, of such entities acting pursuant to this contract and that neither the District nor the Construction Manager, Design Consultant or their respective officers, officials, employees, agents or volunteers or other authorized representatives will be responsible for having hazards corrected and /or removed at the location(s) where the Work is to be performed. The Contractor agrees that neither the District nor the Construction Manager, Design Consultant or their respective officers, officials, employees, agents or volunteers or other authorized representatives will be responsible for taking steps to protect the Contractor's employees from such hazards, or for instructing the Contractor's employees to recognize such hazards or to avoid the associated dangers. The Contractor agrees that with respect to the Work to be performed under this Contract and the location(s) where such Work is to be performed, the Contractor will be responsible for not creating hazards, and for having hazards corrected and/or removed. The Contractor agrees that through the safety obligations contained in this Contract and the Contractor's own inspection of the site(s) where the Contract Work is to be performed, the Contractor is aware and has been notified of the hazards to which the Contractor's employees may be exposed in the performance of Contract Work. The Contractor has taken and/or will take appropriate, feasible steps to protect the Contractor's employees from such hazards, and has instructed and/or will instruct its employees to recognize such hazards and how to avoid the associated dangers. The Contractor agrees that neither the District nor the Construction Manager, Design Consultant or their respective officers, officials, employees, agents or volunteers or other authorized representatives will be "employers" pursuant to California Labor Code Section 6400 and related provisions of law with respect to the Contractor, the Contractor's privities or other entities acting pursuant to this contract.

The Contractor shall indemnify, defend and hold Owner and Construction Manager, Design Consultant and their respective officers, officials, employees, agents and volunteers or other authorized representatives harmless to the full extent permitted by law concerning liability related to the Contractor's safety obligations in accordance with Section 00800-2.01E, **INDEMNIFICATION**.

If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the Construction Manager and the District. In addition, the Contractor shall furnish the Construction Manager with a copy of the Employer's Report of Injury immediately following any incident requiring the filing of the report during the prosecution of the Work under this Contract. The Contractor shall also furnish the Construction Manager with a copy of the Employer's Report of Injury involving any subcontractors on this project. The Contractor shall make all reports as are, or may be, required by any authority having jurisdiction, and permit all safety inspections of the Work being performed under this Contract.



If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the Construction Manager, giving full details of the claim.

- B. Safety Program - The Contractor shall establish, implement, and maintain a written injury prevention program as required by Labor Code Section 6401.7. Before beginning the Work the Contractor shall prepare and submit to the Construction Manager a Contractor Safety Program that provides for the implementation of all of the Contractor's safety responsibilities in connection with the Work at the site and the coordination of that program and its associated procedures and precautions with safety programs, precautions and procedures of each of its subcontractors and other prime Contractors performing work at the site. The Contractor shall be solely responsible for initiating, maintaining, monitoring, coordinating, and supervising all safety programs, precautions, and procedures in connection with the Work and for coordinating its programs, precautions, and procedures of the other prime contractors and subcontractors performing the Work at the site. The Safety Program should contain all the necessary elements for the Contractor to administer its program on site. At a minimum, this written Safety Program shall address the elements required by Labor Code Section 6401.7.

The Contractor's compliance with requirements for safety and/or the Construction Manager's review of the Contractor's Safety Program shall not relieve or decrease the liability of the Contractor for safety. The Construction Manager's review of the Contractor's Safety Program is only to determine if the above listed elements are included in the program.

- C. Safety Supervisor - The Contractor shall appoint an employee as safety supervisor who is qualified and authorized to supervise and enforce compliance with the Safety Program. The Contractor shall notify the Construction Manager in writing prior to the commencement of work of the name of the person who will act as the Contractor's safety supervisor and furnish the safety supervisor's resume to the Construction Manager.

The Contractor will, through and with its Safety Supervisor, ensure that all of its employees and its subcontractors of any tier fully comply with the Project Safety Policies. The Safety Supervisor shall be a full-time employee of the Contractor whose responsibility shall be for supervising compliance with applicable safety requirements on the work site and for developing and implementing safety training classes for all job personnel. The District shall have the authority to require removal of the Contractor's Safety Supervisor if the representative is judged to be improperly or inadequately performing the duties; however, this authority shall not in any way affect the Contractor's sole responsibility for performing this work safely, nor shall it impose any obligation upon the District to ensure the Contractor performs its work safely.

- D. Safety and Protection - The Contractor shall take all necessary protection to prevent damage, injury, and loss to:

- All employees on the Project, employees of all subcontractors, and other persons and organizations who may be affected thereby;
- All the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
- Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and underground facilities not designated for removal, relocation, or replacement in the course of construction.

The Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss and shall erect and maintain all necessary safeguards for such safety and protection. The Contractor shall notify owners of adjacent property and of underground facilities and utility Districts when prosecution of the Work may affect them and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All injury or loss to any property caused, directly or indirectly, in whole or in part, by the Contractor, any subcontractor, supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by the Contractor.

- E. Excavation Safety - In accordance with the provisions of Section 6705 of the Labor Code, the Contractor shall submit, in advance of excavation of any trench or trenches five feet or more in depth, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plans vary from the shoring system standards set forth in the Construction Safety Orders of the Division of Industrial Safety in Title 8, Subchapter 4, Article 6, California Code of Regulations, the plans shall be prepared and signed by a registered civil or structural engineer employed by the Contractor, and all costs therefore shall be included in the price named in the Contract for completion of the Work as set forth in the Contract Documents. Nothing in this section shall be deemed to allow the use of a shoring, bracing, sloping, or other protective system less effective than that required by the Construction Safety Orders. Nothing in this section shall be construed to impose a tort liability on the District, the Design Consultant, the Construction Manager, nor any of their agents, consultants, or employees. The District's review of the Contractor's excavation plan is only for general conformance to the Construction Safety Orders.

Prior to commencing any excavation, the Contractor shall designate in writing to the Construction Manager the "competent person(s)" with the authority and responsibilities designated in the Construction Safety Orders.

- F. Safety Emergencies - In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the Construction Manager, is obligated to act to

prevent threatened damage, injury or loss. The Contractor shall give the Construction Manager prompt written notice if the Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby.

- G. Safety Violations - Should the Contractor fail to correct a condition, the District shall have the right to notify the Contractor through the Construction Manager that an unsafe condition may exist and must be corrected or the work in question can be stopped in accordance with Section 00700-6.06A, **SUSPENSION OF WORK**, until the condition is corrected to the satisfaction of the District. No extension of time or additional compensation will be granted as a result of any stop order so issued. The notification and suspension of such work or the failure to provide such notification and suspension by the District shall not relieve the Contractor of its sole responsibility and liability for safety.

The District shall have the authority to require the removal from the project of the foreman and/or superintendent in responsible charge of the work where safety violations occur.

- H. Equipment Safety Provisions - The completed Work shall include all necessary permanent safety devices, such as machinery guards and similar ordinary safety items, required by the State and Federal (OSHA) industrial authorities and applicable local and national codes. Further, any features of the Work, including District-selected equipment, subject to such safety regulations shall be fabricated, furnished, and installed in compliance with these requirements. All equipment furnished shall be electrically grounded and provided guards and protection as required by safety codes. Where vapor-tight or explosion-proof electrical installation is required by safety codes, this shall be provided. Contractors and manufacturers of equipment shall be held responsible for compliance with the requirements included herein. The Contractor shall notify all equipment suppliers and subcontractors of the provisions of this paragraph.
- I. Confined Spaces – The Work requires work in confined spaces and requires compliance with CAL/OSHA and Federal OSHA requirements. Confined spaces for the purposes of this section shall be as defined by the Division of Industrial Safety. Notwithstanding any classifications relative to the Tunnel Safety Orders, work within confined spaces of this project is subject to the definitions and applicable provisions of Section 5156 et. seq., Title 8, Division 1, Chapter 4, Subchapter 7, Group 16, Article 108 of California Code of Regulations. Including exposure to hydrogen sulfide, methane, carbon dioxide and other gases and vapors commonly found in municipal sewers which could have, or has the potential of having Immediate Danger to Life or Health Conditions (IDLH).
- J. Public Safety and Convenience - The Contractor shall conduct his work so as to ensure the least possible obstruction to traffic and inconvenience to the general public and the residents in the vicinity of the work and to ensure the protection of persons and property. No road or street shall be closed to the public except with the permission of the Construction Manager and the proper governmental authority. Fire

hydrants on or adjacent to the work shall be accessible to fire fighting equipment. Temporary provisions shall be made by the Contractor to ensure the use of sidewalks, private and public driveways and proper functioning of gutters, sewer inlets, drainage ditches and culverts, irrigation ditches and natural water courses.

#### 4.08 PROVISIONS FOR HANDLING EMERGENCIES

It is possible that emergencies may arise during the progress of the Work that may require special treatment or make advisable extra shifts of labor forces to continue the Work for twenty-four (24) hours per day. These emergencies may be caused by damage or possible damage to nearby existing structures or property by reason of the Work under construction, or by storm, accidents, or leakage. The Contractor shall be prepared in case of such emergencies to make all necessary repairs and shall promptly execute such work when required by the Construction Manager. The determinations made by the Construction Manager for handling emergencies shall be final and conclusive upon the parties.

Upon start of the Work, Contractor shall provide means for immediate emergency notification of Contractor's designated representative and designated emergency alternates.

#### 4.09 NONSTANDARD WORKING HOURS

The Contractor may be required to prosecute the Work at night or outside of the normal working hours defined in Section 01560-1.07, **WORKING HOURS**. Such work may be required due to project and/or operational constraints as defined in Section 01010, **SUMMARY OF WORK**, or if emergencies arise as provided for in Section 00700-4.08, **PROVISIONS FOR HANDLING EMERGENCIES**. When required, ordered, or permitted to work at night, the Contractor shall provide sufficient and satisfactory lighting and other facilities therefore. For work outside of the normal working hours, the Contractor shall receive no extra payment, but compensation shall be considered as having been included in the price stipulated for the Work, except for authorized work performed outside of the Contract requirements.

#### 4.10 COOPERATION WITH OTHER CONTRACTORS

This Paragraph shall serve as notice to the Contractor that the District may let other contracts for other work at or near the site of this work. The Contractor shall afford other contractors reasonable opportunity for the delivery and storage of their materials and the execution of their work, and shall properly connect and coordinate its work with theirs.

Should construction be under way by other forces or by other contractors within or adjacent to the limits of the work or in the vicinity of the Work to be done under this Contract, the Contractor shall so conduct its operations as to interfere to the least possible extent with the Work of such other forces or contractors.

Any difference or conflicts which may arise between the Contractor and any other forces or contractors, creating delays or hindrance to each other, shall be adjusted as determined by the Construction Manager.

Section 01010, **SUMMARY OF WORK**, indicates anticipated other potential construction activities within or adjacent to Work to be performed in this Contract.

## **ARTICLE 5 - CONTROL OF WORK AND MATERIAL**

### **5.01 MEANS, METHODS AND APPLIANCES**

The means, methods and appliances adopted by the Contractor shall be planned and executed to, in the opinion of the Construction Manager, produce the highest grade quality of work and will enable the Contractor to complete the Work in the time agreed upon. The District and Construction Manager shall not supervise, direct, or have control over, or be responsible for, Contractor's means, methods and appliances of construction or for the safety precautions and programs incident thereto, or for any failure of Contractor to comply with laws and regulations applicable to the furnishing or performance of Work. However, if at any time the means, methods and appliances appear inadequate or of inferior quality, the Construction Manager may order the Contractor to improve their character or efficiency, and the Contractor shall conform to such order; failure of the Construction Manager to order such improvement of methods of efficiency will not relieve the Contractor from its obligation to perform satisfactory work and to finish it in the time agreed upon.

### **5.02 CHARACTER OF WORKERS**

None but competent forepersons and workers shall be employed on work requiring special qualifications; and, when required by the Construction Manager, the Contractor shall remove from the work any person who commits trespass, or is, in the opinion of the Construction Manager, disorderly, dangerous, insubordinate, incompetent, or otherwise objectionable. Such discharge shall not be the basis of any claim for compensation or damages against the Construction Manager, the District, or any of its officers or representatives.

### **5.03 MATERIALS AND WORKMANSHIP**

Unless otherwise indicated in these Specifications, materials and equipment for the construction work shall be the best grade in quality of a manufacturer regularly engaged in the production of such materials and equipment or materials and equipment of comparable character. All materials must be of the specified quality and equal to approved samples, if samples have been submitted. All work shall be done and completed in the best workmanlike manner, obtainable in the local market. All permanent materials and equipment shall be new unless otherwise specified.

Notwithstanding any omission from these Specifications or the Drawings it shall be the duty of the Contractor to call the Construction Manager's attention to apparent errors or omissions and request instructions before proceeding with the Work. The Construction Manager may, by appropriate instructions correct errors and supply omitted information. Such instructions shall be as binding upon the Contractor as though contained in the original Specifications or Drawings.

All defective work or materials shall be promptly removed from the premises by the Contractor, whether in place or not, and shall be replaced or renewed in such manner as the Construction Manager may direct. All materials and workmanship of whatever description shall be subjected to the inspection of, and rejection by, the Construction Manager if not in conformance with the Contract Documents.

Any defective material or workmanship, or any unsatisfactory or imperfect work which may be discovered before the final Acceptance of the Work or within one (1) year thereafter, shall be corrected immediately on the requirement of the Construction Manager, without extra charge, notwithstanding that it may have been overlooked in previous inspections and estimates. Failure to inspect work shall not relieve the Contractor from any obligation to perform sound and reliable work as herein described.

#### 5.04 EXISTING UTILITIES

- A. General - The location of known existing utilities and pipelines are shown on the Plans in their approximate locations. However, nothing herein shall be deemed to require the District to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the site of the project can be inferred from the presence of other visible facilities, such as buildings, cleanouts, meter and junction boxes, on or adjacent to the site of the construction.

The District will assume the responsibility for the timely removal, relocation, or protection of existing main or trunkline utility facilities located on the construction site if such utilities are not identified by the District in the Contract Documents or which can reasonably be inferred from the presence of other visible facilities.

- B. Utility Location - It shall be the Contractor's responsibility to determine the exact location and depth of all utilities, including service connections, which have been marked by the respective utility owners and which the Contractor believes may affect or be affected by the Contractor's operations. The Contractor shall not be entitled to additional compensation nor time extensions for work necessary to avoid interferences nor for repair to damaged utilities if the Contractor does not expose all such existing utilities as required by this section.

Pursuant to Government Code Section 4216.2 the Contractor shall contact the appropriate regional notification center at least two (2) working days before, but not more than 14 calendar days prior to commencing any excavation. The Contractor shall request that the utility owners conduct a utility survey and mark or otherwise indicate the location of their service.

After the utility survey is completed, the Contractor shall commence "potholing" or hand digging to determine the actual location of the pipe, duct, or conduit. The Construction Manager shall be given notice prior to commencing potholing operations. The Contractor shall uncover all piping and conduits, to a point one (1) foot below the pipe, where crossings, interferences, or connections are shown in the Contract Documents, prior to trenching or excavating for any pipe or structures, to

determine actual elevations. New pipelines shall be laid to such grade as to clear all existing facilities which are to remain in service for any period subsequent to the construction of the run of pipe involved.

- C. Utility Relocation and Repair - If interferences occur at locations other than those indicated in the Contract Documents with reasonable accuracy, the Contractor shall notify the Construction Manager in writing. The Construction Manager will supply a method for correcting the interferences in accordance with the responsibilities of this section and Government Code Section 4215.

The District shall compensate the Contractor for the costs of locating and repairing damage not due to the failure of the Contractor to exercise reasonable care, and for removing or relocating such main or trunk-line utility facilities not indicated in the Contract Documents with reasonable accuracy, and for the cost of equipment on the Project necessarily idled during such work. The payment for such costs will be made as provided in Section 00700-7.01, **CHANGE ORDERS**. The Contractor shall not be assessed liquidated damages for delay in completion of the Project, when such delay is caused by the failure of the District or utility company to provide for removal or relocation of such utility facilities. Requests for extensions of time arising out of utility relocation or repair delays shall be filed in accordance with Section 01310-1.06, **TIME IMPACT ANALYSES**.

The public utility, where they are the owner of the effected utility, shall have the sole discretion to perform repairs or relocation work or permit the Contractor to do such repairs or relocation work at a reasonable price. The right is reserved to the District and the owners of utilities or their authorized agents to enter upon the Work area for the purpose of making such changes as are necessary for the rearrangement of their facilities or for making necessary connections or repairs to their properties. The Contractor shall cooperate with forces engaged in such work and shall conduct its operations in such a manner as to avoid any unnecessary delay or hindrance to the work being performed by such forces and shall allow the respective utilities time to relocate their facility.

When the Contract indicates that a utility is to be relocated, altered or constructed by others, the District will conduct all negotiations with the utility company and the work will be done at no cost to the Contractor, unless otherwise stipulated in the Contract.

Temporary or permanent relocation or alteration of utilities desired by the Contractor for its own convenience shall be the Contractor's responsibility and it shall make arrangements and bear all costs for such work.

## **ARTICLE 6 - PROGRESS OF THE WORK**

### **6.01 COMMENCEMENT OF WORK**

Within thirty (30) calendar days after receipt of the required bonds and evidences of insurance and the executed Agreement from the Contractor, written Notice to Proceed will

be given by the District to Contractor. Notwithstanding other provisions of the Contract, the Contractor shall not be obligated to perform work, and the District shall not be obligated to accept or pay for work performed by the Contractor, prior to Notice to Proceed. The Contractor shall provide the required Contract bonds and evidences of insurance prior to Notice to Proceed and commencing work at the site.

The Contractor shall commence the Work covered by this Contract within ten (10) days after the date established in the Notice to Proceed for the commencement of Contract Time.

The Contractor shall give the Construction Manager written notice not less than two (2) working days in advance of the actual date on which the work will be started. The Contractor shall be entirely responsible for any delay in the Work, which may be caused by its failure to give such notice.

## 6.02 CONTRACT TIME

Time shall be of the essence of the Contract. The Contractor shall prosecute the Work so that the various portions of the project shall be Substantially Complete and ready for use within the time specified in Section 00800-1.01, **TIME ALLOWED FOR COMPLETION**. It is expressly understood and agreed by and between the Contractor and the District that the Contract time for completion of the Work described herein is a reasonable time taking into consideration the average climatic and economic conditions and other factors prevailing in the locality and the nature of the Work. The Contractor is hereby advised that the Contractor's Bid is to be based on the entire Contract Time and the Contractor shall include its field and home office overhead costs in the Bid for the entire Contract Time.

## 6.03 DELAYS

- A. Notice of Delays - When the Contractor foresees a delay in the prosecution of the Work and, in any event, immediately upon the occurrence of a delay, the Contractor shall notify the Construction Manager in writing of the probability of the occurrence and the estimated extent of the delay, and its cause. The Contractor shall take immediate steps to prevent, if possible the occurrence or continuance of the delay. The Contractor agrees that no claim shall be made for delays, which are not called, to the attention of the Construction Manager at the time of their occurrence.
- B. Non-Excusable Delays - Non-excusable delays in the prosecution of the Work shall include delays which could have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its subcontractors, at any tier level, or suppliers. The Contractor shall receive no compensation for such delay.
- C. Excusable Delays - Excusable delays in the prosecution or completion of the Work shall include delays which result from causes beyond the control of the Contractor and District and which could not have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its subcontractors, at any tier level, or suppliers. The Contractor shall receive no compensation for such delay. Excusable delays are as further defined below.



1. Abnormal Delays - Delays caused by acts of god, fire, unusual storms, floods, tidal waves, earthquakes, strikes, labor disputes, freight embargoes, and shortages of materials shall be considered as excusable delays insofar as they prevent the Contractor from proceeding with at least seventy-five (75) percent of the normal labor and equipment force for at least five (5) hours per day toward completion of the current critical activity item(s) on the latest Favorably Reviewed Progress Schedule.
  2. Weather Delays - Should inclement weather conditions or the conditions resulting from weather prevent the Contractor from proceeding with seventy-five (75) percent of the normal labor and equipment force engaged in the current critical activity item for a period of at least five (5) hours per day toward completion of such operation or operations, and the crew is dismissed as a result thereof, it shall be a weather delay day.
  3. Material Shortages - Upon the submission of satisfactory proof to the Construction Manager by the Contractor, shortages of material may be acceptable as grounds for granting a time extension. In order that such proof may be satisfactory and acceptable to the Construction Manager, it must be demonstrated by the Contractor that the Contractor has made every effort to obtain such materials from all known sources within reasonable reach of the proposed Work. Only the physical shortage of material, caused by unusual circumstances, will be considered under these provisions as a cause for extension of time, and no consideration will be given to any claim that material could not be obtained at a reasonable, practical, or economical cost or price, unless it is shown to the satisfaction of the Construction Manager that such material could have been obtained only at exorbitant prices entirely out of line with current rates, taking into account the quantities involved and usual practices in obtaining such quantities. A time extension for shortage of material will not be considered for material ordered or delivered late or whose availability is affected by virtue of the mishandling of procurement. The above provisions apply equally to equipment to be installed in the Work.
- D. Compensable Delays - Compensable delays in the prosecution or completion of the Work shall include delays that occur through no fault of the Contractor and prevent the Contractor from proceeding with at least seventy-five (75) percent of the normal labor and equipment force for at least five (5) hours per day toward completion of the current critical activity item(s) on the latest Favorably Reviewed Progress Schedule due to the following cause(s):
1. Delays due solely to the actions and/or inactions of the District.
  2. Delays due to differing site conditions as defined in Section 00700-7.02, **DIFFERING SITE CONDITIONS**.
  3. Delays due to other Contractors employed by the District who interfere with the Contractor's prosecution of the Work as defined above.

- E. Concurrent Delays - Concurrent delays are those delay periods when the prosecution of the Work is delayed during the same period of time due to causes from a combination of the delays defined in Sections 00700-6.03B, **Non- Excusable Delays**, 00700-6.03C, **Excusable Delays**, or 00700-6.03D, **Compensable Delays**. During such concurrent delay periods, time extensions will be granted in accordance with Section 00700-6.04, **TIME EXTENSIONS**; however, the Contractor shall not be compensated for its overhead costs as defined in Section 00700-6.04C, **Indirect Overhead**, and the District shall not assess its actual costs as defined in Section 00700-6.04A, **Non- Excusable Delays**.

#### 6.04 TIME EXTENSIONS

Non-Excusable Delays - The District, at its sole option, may grant an extension to milestone or completion dates for non-excusable delays. If the District grants an extension of time for non-excusable delays, the Contractor agrees to pay the District's actual costs, including charges for engineering, inspection and administration incurred during the extension.

- A. Excusable or Compensable Delays - If the Contractor is delayed in the performance of its Work as defined in Sections 00700-6.03C, **EXCUSABLE DELAYS**, or 00700-6.03D, **COMPENSABLE DELAYS**, then milestone and Contract completion dates may be extended by the District for such time that, in the District's and Construction Manager's determination, the Contractor's completion dates will be delayed, provided that the Contractor strictly fulfills the following:

1. The Contractor shall provide notification, in accordance with Section 00700-6.03A, **NOTICE OF DELAYS**, and submit in writing a request for an extension of time to the Construction Manager stating at a minimum the probable cause of the delay and the number of days being requested. The time extension request shall be submitted in accordance with the requirements of Section 01310-1.06, **TIME IMPACT ANALYSES**.
2. If requested by the Construction Manager, the Contractor shall promptly provide sufficient information to the Construction Manager to assess the cause or effect of the alleged delay, or to determine if other concurrent delays affected the Work.
3. Weather Delays. The Contractor will be granted a non-compensable time extension for weather caused delays, pursuant to Section 00700-6.03 C2, **WEATHER DELAYS**, over and above an allowance as provided for in Section 00800-1.03, **WEATHER DAYS**. No time extensions for weather delays will be granted until the total number of weather days exceeds this allowance.

Should the Contractor fail to fulfill any of the foregoing, which are conditions precedent to the right to receive a time extension, the Contractor waives the right to receive a time extension.

During such extension of time, neither extra compensation for engineering, inspection, and administration nor damages for delay will be charged to the Contractor. It is understood and agreed by the Contractor and District that time extensions due to excusable or compensable delays will be granted only if such delays involve controlling operations which would prevent completion of the whole Work within the specified Contract time.

2024 WPCP Primary Clarifier Improvement Project as extended in accordance with this clause if appropriate, the Contractor shall pay to the District liquidated damages in accordance with Section 00700-6.05, **LIQUIDATED DAMAGES**.

- B. Indirect Overhead - The Contractor may be entitled to reimbursement of indirect overhead expenses for periods of time when the Work is delayed as defined in Section 00700-6.03D, **COMPENSABLE DELAYS**. Reimbursement for indirect overhead shall not be made for concurrent delays as defined in Section 00700-6.03E, **CONCURRENT DELAYS**.

The compensation described in Section 01035-1.05, **MARK-UP ALLOWANCES**, includes provisions for reimbursement of indirect overhead expenses for Change Order work. Compensation as described in this section shall reasonably consider the indirect overhead included in the Mark-Up Allowance, as follows:

1. If District and Contractor agree that the Mark-Up Allowance does not provide sufficient compensation for a compensable delay associated with changed work, this section shall apply.
2. Upon application of this section, an amount equal to the entire Mark-Up Allowance for all Change Order work shall be deducted from the indirect overhead compensation as calculated based on Sections 00700 6.04 C1 (Indirect Field Overhead) and 6.04 C2 (Indirect Home Office Overhead) below.

As a condition precedent to any reimbursement of indirect overhead expense, the Contractor must fulfill all conditions as provided in Section 00700-6.04B, **EXCUSIBLE or COMPENSABLE DELAYS**. No additional markup for overhead or profit shall be provided for such reimbursable indirect overhead expenses.

Payment to the Contractor for indirect overhead expenses will be made only for the extended Contract time granted for compensable delay(s) which meet the following criteria: The compensable delay(s) period is (are) required to complete the work following the entire depletion of the original Contract time plus any time extensions granted for delays other than compensable time extensions.

3. Indirect Field Overhead - For those allowable delay periods as defined in Section 00700-6.04C, **INDIRECT OVERHEAD**, the Contractor shall be reimbursed for its indirect field overhead based on:

- a. Actual invoice costs for on-site field offices and temporary utilities as described in Section 01560, **TEMPORARY CONTROLS**, and Section 01510, **TEMPORARY UTILITIES**.
  - b. Actual indirect labor costs, as determined consistent with Section 01035-1.03, **FORCE ACCOUNT PAYMENT**, for field office staff.
  - c. Fair rental values acceptable to the Construction Manager as described in Section 01035-1.03, **FORCE ACCOUNT PAYMENT**, for construction equipment idled due to the delay.
4. Indirect Home Office Overhead - For those allowable delay periods as defined in Section 00700-6.04C, **INDIRECT OVERHEAD**, the Contractor shall be reimbursed for its unabsorbed home office overhead based on the following formula:

$$\frac{\text{ContractAwardAmount}(\$)}{\text{OriginalContractTime}(\text{Days})} * 0.03 = \text{DailyHomeOfficeOverhead}(\$ / \text{day})$$

The Contract Award Amount is the total amount in the executed Agreement (Section 00500). The Contract Time is as provided in Section 00800-1.01, **TIME ALLOWED FOR COMPLETION**.

As it is impractical to determine the actual home office overhead, such reimbursement shall constitute full payment for any and all home office overhead expenses for such periods of time for the Contractor and all subcontractors, whether greater or less than actual. Distribution of the markup amount among the Contractor and all subcontractors and suppliers is the responsibility of the Contractor.

## 6.05 LIQUIDATED DAMAGES

- A. Owner and the Contractor recognize that time is of the essence of this Agreement and that the Owner will suffer financial loss if the Work is not completed within the time specified in Section 00800-1.01, **TIME ALLOWED FOR COMPLETION**, and required milestone work if specified in Section 00800-1.02 herein, plus any extensions thereof allowed in accordance with Section 00700-6.04 of the General Conditions. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage which the Owner will sustain in the event of and by reason of the Contractor's failure to fully perform the Work or to fully perform all of its Contract obligations that have accrued by the time for completion as specified in Section 00800-1.01 herein and/or as specified for completion of any scheduled operations or works described in Section 00800-1.02. It is, therefore, agreed in accordance with California Government Code Section 53069.85 that the Contractor will forfeit and pay to the Owner liquidated damages in the amount set forth in Section 00800-1.02, **DAMAGES FOR DELAYS**, per day for each and every calendar day that expires after the time for completion specified in Section 00800-1.01 herein and/or as specified for completion of any scheduled

operations or works described in Section 00800-1.02 except as otherwise provided by extension of time pursuant to Section 00700-6.04 of the General Conditions. It is further understood and agreed in accordance with California Government Code Section 53069.85 that the liquidated damages sum specified in this provision is not manifestly unreasonable under the circumstances existing at the time this Contract was made, and that the Owner may deduct liquidated damages sums in accordance with this provision from any payments due or that may become due the Contractor.

- B. Liquidated damages will continue to accrue at the stated rate until Substantial Completion of the Work. Accrued liquidated damages may be deducted by the Owner from amounts due or that become due to the Contractor for performance of the Work. Liquidated damages may not be waived or reduced by the Owner unless expressly waived or reduced in writing by the Construction Manager.

#### 6.06 SUSPENSION OF WORK

- A. If the Contractor fails to correct defective work as required by Section 00700-5.03, **MATERIALS AND WORKMANSHIP**, or fails to carry out the Work in accordance with the Contract Documents or any other applicable rules and regulations, the District, by a written order of the District's representative or signed personally by an agent specifically so empowered by the District, in writing, may order the Contractor to stop the Work, or any portion thereof. The suspension of Work shall remain in effect until the cause for such order has been eliminated. This right of the District to stop the Work shall not give rise to any duty on the part of the District to exercise this right for the benefit of the Contractor or any other person or entity. All delays in the Work occasioned by such stoppage shall not relieve the Contractor of any duty to perform the Work or serve to extend the time for its completion. Any and all necessary corrective work done in order to comply with the Contract Documents shall be performed at no cost to the District. The District's concurrence that the condition or cause has been eliminated will be provided in writing to the Contractor.
- B. In the event that a suspension of Work is ordered, as provided in this paragraph, the Contractor, at its expense, shall perform all work necessary to provide a safe, smooth, and unobstructed passageway through construction for use by public, pedestrian, and vehicular traffic, during the period of such use by suspension. Should the Contractor fail to perform the Work as specified, the District may perform such work and the cost thereof may be deducted from monies due the Contractor under the Contract.
- C. The District shall also have authority to suspend the Work wholly or in part, for such period as the District may deem necessary, due to unsuitable weather, or to such other conditions as are considered unfavorable for the suitable prosecution of the Work, or for the District's own convenience. Such temporary suspension of the Work will be considered justification for time extensions to the Contract in an amount equal to the period of such suspension if such suspended work includes the current critical activity on the latest Favorably Reviewed Progress Schedule. The Contractor as directed by the District shall provide the provisions as stipulated in Section 00700-6.06B,

**SUSPENSION OF WORK**, above. Such additional work shall be compensated as provided for in Section 00700-Article 7, **CHANGES IN THE WORK**.

#### 6.07 RIGHT TO TERMINATE CONTRACT

If at any time the Contractor is determined to be in material breach of the Contract, notice thereof in writing will be served upon the Contractor and its sureties, and should the Contractor neglect or refuse to provide means for a satisfactory compliance with the Contract, as directed by the Construction Manager, within the time specified in such notice, the District or the District's Representative in such case shall have the authority to terminate the operation of the Contract.

Upon such termination, the Contractor shall discontinue the Work, or such parts of it as the District may designate. Upon such termination, the Contractor's control shall terminate and thereupon the District or its fully authorized representative may take possession of all or any part of the Contractor's materials, tools, equipment, and appliances upon the premises and use the same for the purposes of completing the Work and hire such force and buy or rent such additional machinery, tools, appliances, and equipment, and buy such additional materials and supplies at the Contractor's expense as may be necessary for the proper conduct of the Work and for the completion thereof; or the District may employ other parties to carry the Contract to completion, employ the necessary workers, substitute other machinery or materials and purchase the materials contracted for, in such manner as the District may deem proper; or the District may annul and cancel the Contract and reissue the Work or any part thereof. Any excess of cost arising therefrom over and above the Contract price will be charged against the Contractor and its sureties, who will be liable therefore.

In the event of such termination, all monies due the Contractor or retained under the terms of this Contract shall be held by the District; however, such holdings will not release the Contractor or its sureties from liability for failure to fulfill the Contract. Any excess cost over and above the Contract amount incurred by the District arising from the termination of the operations of the Contract and the completion of the Work by the District as above provided shall be paid for by the Contractor. The Contractor shall be entitled to credit against such excess costs and contract funds held by the District. Any contract funds remaining after all valid claims for completion of the Work have been paid, shall be paid to the Contractor sixty (60) days after completion of the Work.

If at any time before completion of the Work under the Contract, it shall be determined by the District that it impossible, impractical, undesirable, or otherwise against the interests of the District to complete the Work, or if the Work shall be stopped by an injunction of a court of competent jurisdiction or by order of any competent authority, the District may, upon ten (10) days written notice to the Contractor, discontinue the Work and terminate the Contract for its convenience. Upon service of such notice of termination, the Contractor shall discontinue the Work in such manner, sequence, and at such times as the Construction Manager may direct. The Contractor shall have no claim for damages for such discontinuance or termination, nor any claim for anticipated profits on the work thus dispensed with, nor any other claim except for the work actually performed up to the time

of discontinuance, including any extra work ordered by the Construction Manager to be done, nor for any claim for liquidated damages.

## **ARTICLE 7 - CHANGES IN THE WORK**

### **7.01 CHANGE ORDERS**

- A. Without invalidating the Contract and without notice to sureties or insurers, the District through the Construction Manager, may at any time or from time to time, order additions, deletions, or revisions in the Work; these will be authorized by Field Directive, Field Order, or Change Order. A Change Order will not be issued for a Field Directive unless the Construction Manager concurs with an appeal by the Contractor that such Field Directive is a change in the scope of the Contract. The Contractor shall comply promptly with the requirements for all Change Orders, Field Orders, or Field Directives. The work involved in Change Orders shall be executed under the applicable conditions and requirements of the Contract Documents. If any Field Order causes an increase or decrease in the Contract Amount or an extension or shortening of the Contract Time, an equitable adjustment will be made by issuing a Change Order. By the acceptance of a Change Order, the Contractor waives any claim for additional time, not included in the Change Order, for the work covered by that Change Order. Additional or extra work performed by the Contractor without written authorization of a Field Order or Change Order will not entitle the Contractor to an increase in the Contract Amount or an extension of the Contract Time.
- B. Compensable extra work shall be that work required for the completed project, but not shown or detailed on the Contract Drawings, and not called for in the Contract Documents, and not constituting “incidental work” as defined in Section 00700-1.04, **PLANS AND SPECIFICATIONS**. Such work shall be governed by all applicable provisions of the Contract Documents. In giving instructions, the Construction Manager shall have authority to make minor changes in the Work, not involving extra cost, and not inconsistent with the purposes of the Work; but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the District through the Construction Manager, and no claim for an addition to the total amount of the Contract shall be valid unless so ordered.
- C. In case any change increases or decreases the work shown, the Contractor shall be paid for the work actually done at a mutually agreed upon adjustment to the Contract price, based upon the provisions of Section 01035, **MODIFICATION PROCEDURES**.
- D. If the Contractor refuses to accept a Change Order, the District may issue it unilaterally. The Contractor shall comply with the requirements of the Change Order. The District shall provide for an equitable adjustment to the Contract, and compensate the Contractor accordingly. If the Contractor does not agree that the adjustment is equitable, it may submit a claim in accordance with Section 00700-7.03, **RESOLUTION OF DISPUTES**.

## 7.02 DIFFERING SITE CONDITIONS

Pursuant to Public Contract Code Section 7104, the Contractor shall promptly, and before such conditions are disturbed, notify the Construction Manager in writing, of any:

- A. 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.
- B. Subsurface or latent physical conditions at the site differing from those indicated in the Contract documents.
- C. Unknown physical conditions at the site of any unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Contract.

The District shall promptly investigate the conditions, and if it finds that the conditions do materially 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 the District shall cause to be issued a Change Order under the procedures provided in Section 00700-7.01, **CHANGE ORDERS**.

In the event that a dispute arises between the District 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, Section 00700-7.03, **RESOLUTION OF DISPUTES**.

No claim of the Contractor under this clause shall be allowed unless the Contractor has promptly given the notice required.

## 7.03 RESOLUTION OF DISPUTES

It is the intent of this Contract that disputes regarding the Contract be resolved promptly and fairly between the Construction Manager and Contractor. However, it is recognized that some disputes will require detailed investigation and review by one or both parties before a determination and resolution can be reached. For the protection of the rights of both the Contractor and District the following provisions are provided for the resolution of disputes which cannot be resolved by the Contractor and Construction Manager within two days after either party should bring verbal notice of dispute or potential dispute to the other's attention and prior to the commencement of such work.

- A. Notice - If the Contractor disagrees with the Construction Manager's decision in Section 00700-1.06, **CONTRACT INTERPRETATION BY THE**



**CONSTRUCTION MANAGER**, or in any case where the Contractor deems additional compensation or a time extension to the Contract period is due the Contractor for work or materials not covered in the Contract or which the Construction Manager has not recognized as extra work, the Contractor shall notify the Construction Manager, in writing, of its intention to make claim. Notice pertaining to decisions provided in Section 00700-1.06, **CONTRACT INTERPRETATION BY THE CONSTRUCTION MANAGER**, or such other determinations by the Construction Manager shall be filed in writing to the Construction Manager within ten (10) days of receipt of such decision and prior to the commencement of such work. All other notices for extra work shall be filed in writing to the Construction Manager prior to the commencement of such work. Written notice shall use the words "Notice of Potential Claim". Such Notice of Potential Claim shall state the circumstances and the reasons for the claim, but need not state the amount.

Additionally, no claim for additional compensation or extension of time for a delay will be considered unless the provisions of Sections 00700-6.03, **DELAYS**, and 6.04, **TIME EXTENSIONS**, are complied with. No claim filed after the date of final payment will be considered.

Unless notice is properly given, the Contractor shall not recover costs incurred by it as a result of the alleged extra work, changed work or other situation which had proper notice been given would have given rise to a right for additional compensation. The Contractor should understand that timely notice of potential claim is of great importance to the Construction Manager and District, and is not merely a formality. Such notice allows the District to consider preventative action, to monitor the Contractor's increased costs resulting from the situation, to marshal facts, and to plan its affairs. Such notice by the Contractor, and the fact that the Construction Manager has kept account of the work in question, shall not in any way be construed as proving the validity of the claim.

- B. Response by Construction Manager - The Construction Manager shall review the "Notice of Potential Claim" and within ten (10) days of receipt of the notice shall respond to the Contractor in writing with its determination, or if it is necessary to extend this period, the Construction Manager shall notify the Contractor in writing as to when a decision will be provided.
- C. Appeals to the District's Representative - In the event the Contractor disagrees with any determination of the Construction Manager provided in accordance with Section 00700-7.03B, **Response by Construction Manager**, the Contractor may, within ten (10) days of receipt of such determination, appeal the determination to the District's Representative for review. The District's Representative shall review the appeal and transmit the decision in writing to the Contractor within thirty (30) days from the date of receipt of the appeal. Failure of the Contractor to appeal the determination of the Construction Manager within ten (10) day period shall constitute a waiver of the Contractor's right to thereafter assert claim resulting from such determination or decision.

In the event the Contractor disagrees with the determination of the District's Representative, the Contractor shall notify the Construction Manager, in writing within ten (10) days of receipt of such determination, of its intention to make claim in accordance with Section 00700-7.03G, **Resolution of Claims**.

- D. Records of Disputed Work - In proceeding with a disputed portion of the Work, the Contractor shall keep accurate records of its costs and shall make available to the Construction Manager, a daily summary of the hours and classification of equipment and labor utilized on the disputed work, as well as a summary of any materials or any specialized services which are used. Such information shall be submitted to the Construction Manager on a monthly basis, receipt of which shall not be construed as an authorization for or acceptance of the disputed work.
- E. Submission of Claim Costs - Within thirty (30) days after the last cost of work for which the Contractor contends it is due additional compensation is incurred, but if costs are incurred over a span of more than thirty (30) days, then within fifteen (15) days after the thirtieth (30<sup>th</sup>) day and every month thereafter, the Contractor shall submit to the Construction Manager, as best the Contractor is able, its costs incurred for the claimed matter. Claims shall be made in itemized detail and should the Construction Manager be dissatisfied with the format or detail of presentation, upon request for more or different information, the Contractor will promptly comply, with the satisfaction of the Construction Manager. If the additional costs are in any respect not knowable with certainty, they shall be estimated as best can be done. The Construction Manager shall have the right as provided in Section 01035-1.07, **COST PRICING DATA AND ACCESS TO RECORDS**, to review the Contractor's records pertaining to a submitted claim. In case the claim is found to be just, it shall be allowed and paid for as provided in Section 01035, **MODIFICATION PROCEDURES**.
- F. Claim Meetings - From time to time the Contractor may request or the Construction Manager may call a special meeting to discuss outstanding claims should it deem this a means of possible help in the resolution of the claim. The Contractor shall cooperate and attend prepared to discuss its claims, making available the personnel, subcontractors and suppliers necessary for resolution, and all documents which may reasonably be requested by the Construction Manager.
- G. Resolution of Claims - Claims pertaining to this Agreement for three hundred and seventy-five thousand dollars (\$375,000) or less which cannot be resolved between the parties shall be resolved pursuant to the provisions of Public Contract Code commencing at Section 20104.
  - 1. Claims Not Exceeding \$375,000 - The Code sections provide in part that: Under the law (starting at Public Contract Code Section 20104.2) construction claims of \$375,000.00 or less on local public agency construction contracts must be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment.

The District must respond in writing to any written claim of three hundred seventy-five thousand dollars (\$375,000) or less within sixty (60) days [or, in the case of claims of less than fifty thousand dollars (\$50,000), within forty-five (45) days] of receipt of claim, or may request, in writing, within thirty (30) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the District may have against the claimant.

If additional information is thereafter required, it shall be requested and provided, pursuant to Public Contract Code Section 20104.2, upon mutual agreement of the District and the claimant.

The District's written response to the claim, as further documented, shall be submitted to the claimant within thirty (30) days [or, for claims of less than \$50,000, within fifteen (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 or requested documentation, whichever is greater.

If the claimant disputes the District's written response (or if the District fails to respond within the time periods prescribed above) the claimant may notify the District, in writing, within fifteen (15) days of receipt of the District's response or within fifteen (15) days of the District's failure to respond within the times prescribed, respectively, and demand an informal settlement conference. The District must then schedule a settlement conference within thirty (30) days.

Following the settlement conference, if the claim or any portion remains in dispute, the claimant may file a claim as required by the claims statute commencing at California Government Code Section 910. The time within which a Government Code claim must be filed is tolled from the time the claimant submits the Public Contract Code claim until the time when the claim is denied.

2. Claims Exceeding \$375,000 - Unless this Contract provides otherwise, all claims between the District and the Contractor that are not resolved between the parties and are not governed by Public Contract Code Section 20104 shall be resolved according to the procedures established in Public Contract Code Section 20104 with the following exceptions:
  - a. The District must respond in writing to any written claim greater than three hundred seventy-five thousand dollars (\$375,000) within sixty (60) days of receipt of the claim, or may request in writing, within thirty (30) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the District may have against the claimant, or may advise the

Contractor in writing within thirty (30) days of receipt of the claim when the review and response to the claim will be furnished.

- b. The arbitration proceedings established in Public Contract Code Section 20104.4(b) and specified in Section 00700-7.03 G3, Civil Action Proceedings, shall only apply if both the District and Contractor mutually agree to arbitration.
3. Civil Action Proceedings - If a civil action is filed to resolve the claim, then between thirty (30) and sixty (60) days after the filing of responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by the parties. The parties are given fifteen (15) days to select a disinterested third person as mediator. Mediation must commence within thirty (30) days of submittal and conclude within fifteen (15) days of commencement unless the time is extended for good cause by the court.

Mediation of Disputes: All disputes among the parties arising under this Agreement shall be mediated before resorting to arbitration or Court action. Mediation is a process in which parties attempt to resolve a dispute by submitting it to an impartial neutral mediator who is authorized to facilitate the resolution of the dispute but who is not empowered to impose a settlement on the parties. The mediation fee, if any, shall be divided equally among the parties. Before the mediation begins, the parties agree to sign a document limiting the admissibility and arbitration or any civil action of anything said, any admission made, and any documents prepared in the course of the mediation, consistent with Evidence Code Section 1152.5 or any successor statute. The filing of a judicial action to enable the imposition of a receivership, injunction or other provisional remedy shall not constitute a waiver of the right to mediate under this provision. The mediation shall take place in Contra Costa County, California. The mediator shall, when possible, be experienced in construction law.

If the matter remains in dispute, the case must be submitted to judicial arbitration pursuant to procedures set forth in the Code of Civil Procedure commencing at Section 1141.10. Discovery is permitted consistent with the rules pertaining to judicial arbitration.

Arbitration of Disputes: All disputes among the parties arising under this Agreement which are not settled through mediation shall be decided by neutral binding arbitration and not by Court action, except as provided by California law for judicial review of arbitration proceedings. The arbitration shall be conducted in accordance with the rules of either the American Arbitration Association (AAA) or Judicial Arbitration and Mediation Services, Inc. (JAMS). The selection between AAA and JAMS rules shall be made by the claimant first filing for the arbitration. The parties to arbitration may agree in writing to use different rules and/or arbitrators. In all other respects, the arbitration shall be conducted in accordance with Part III, Title 9 of the California Code of Civil Procedure. Judgment upon the

award rendered by the arbitrator(s) may be entered in any Court having jurisdiction thereof. The parties shall have the right to discovery in accordance with Code of Civil Procedure Section 1283.05. The filing of a judicial action to enable the imposition of a receivership, injunction or other provisional remedy shall not constitute a waiver of the right to arbitrate under this provision. The arbitration shall take place in Contra Costa County, California. The arbitrator, if possible, shall be familiar with construction law.

A party who appeals an arbitration award and does not obtain a more favorable judgment shall pay the attorney's fees on appeal of the other party. The District must pay interest at the legal rate on any arbitration award or judgment, commencing on the date when suit was filed. Except as otherwise provided in the Contract, the District must pay the undisputed portions of any claims.

Should either party to this Contract bring legal action against the other, the case shall be handled by a court of competent jurisdiction in Contra Costa County, California.

## **ARTICLE 8 - PAYMENT**

### **8.01 BASIS OF PAYMENT**

- A. General - The Contractor shall accept the compensation, as herein provided, as full payment for furnishing all labor, materials, tools, equipment, and incidentals necessary to the completed Work and for performing all work contemplated and embraced under the Contract; also for loss or damage arising from the nature of the Work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the Work, also for all expenses incurred in consequence of the suspension or discontinuance of the Work as herein specified; and for completing the Work according to the Contract Documents. 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.

No compensation will be made in any case of loss of anticipated profits. This includes the event of the termination of the Contract, and therefore no compensation will be made to the Contractor for the loss of anticipated profits associated with the terminated work. Increased or decreased work involving supplemental agreements will be paid for as provided in such agreements.

Full compensation for conforming to all of the provisions of the Contract Documents shall be considered as included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefore.

- B. Payment for Patents and Patent Infringement - All fees or claims for any patented invention, article, or arrangement that may be used upon, or in, any manner connected with the performance of the work or any part thereof shall be included in the price

bid for doing the work, and the Contractor and its sureties shall defend, protect, and hold the District, the Construction Manager, and Design Consultants, together with all their officers, agents, and employees harmless against liability of any nature or kind for any and all costs, legal expenses, and damages made for such fees or claims and against any and all suits and claims brought or made by the holder of any invention or patent, or on account of any patented or unpatented invention, process, article, or appliance manufactured for or used in the performance of the Contract, including its use by the District, unless otherwise specifically stipulated in the Contract. Before final payment is made on the Contract, the Contractor shall furnish an affidavit to the District regarding patent rights for the project. The affidavit shall state that all fees and payments due as a result of the work incorporated into the project or methods utilized during construction have been paid in full. The Contractor shall certify in the affidavit that no other fees or claims exist for work in this project.

- C. Payment of Taxes - The Contractor shall pay and shall assume exclusive liability for all taxes levied or assessed on or in connection with its performance of this Contract, whether before or after acceptance of the work, including, but not limited to, State and local sales and use taxes, Federal and State payroll taxes or assessments, and excise taxes, including any taxes or assessments levied or increased during the performance period of the work. No separate allowance will be made therefore, and all costs in connection therewith shall be included in the total amount of the Contract price.

## 8.02 PARTIAL PAYMENTS

- A. General - In consideration of the faithful performance of the work prosecuted in accordance with the provisions of these Specifications and the Contract, the District will pay the Contractor for all such work installed on the basis of unit prices and/or percentage completion of lump sum Bid Items. Amounts earned for lump sum work will be based on accepted Cost Breakdown (Section 01025, **MEASUREMENT AND PAYMENT**).

Payments will be made by the District to the Contractor on estimates duly certified and approved by the Construction Manager, based on the Lump Sum or unit price value of equipment installed and tested, labor and materials incorporated into the permanent work by the Contractor during the preceding month. Payments will not be made for temporary construction unless specifically provided for in the Contract Documents.

Partial payments will be made monthly based on work accomplished as of a day mutually agreed to by the District and the Contractor. Additionally, the Contractor shall submit a detailed statement of the Contractor's request for payment of acceptable materials and equipment on hand in compliance with Section 00700-8.02B, **PARTIAL PAYMENT: INCLUSION OF MATERIALS ON HAND**. Each payment request shall list each Change Order executed prior to date of submission, including the Change Order Number.

Upon receipt of Contractor's requests for payment, the District shall act in accordance with the following:

1. The Construction Manager shall review the submitted estimates, as soon as practicable after receipt for the purpose of determining that the estimates are a proper request for payment, and shall prepare a certified estimate of the total amount of work done.
2. Any request for payment determined not to be a proper payment request suitable for payment shall be returned to the Contractor as soon as practicable, but not later than seven (7) days after receipt. A request for payment returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reasons why the request for payment is not proper.
3. The number of days available to the District to make a payment without incurring interest pursuant to this section shall be reduced by the number of days by which the District exceeds the seven (7) day return requirement set forth in Section 00700-8.02 A2 above.

If requested, the Contractor shall provide such additional data as may be reasonably required to support the partial payment request. The Construction Manager will be available to meet to discuss the partial payment request prior to its resubmittal(s). When the Contractor's estimate of amount earned conforms to the Construction Manager's evaluation, the Contractor shall submit to the Construction Manager a properly completed and signed progress payment request. The Construction Manager will submit the recommended progress payment request for the District's approval and processing. Payment will be made by the District to the Contractor in accordance with District's normal accounts payable procedures; the District shall retain amounts in accordance with Section 00700-8.03, **RIGHT TO WITHHOLD AMOUNTS**.

No such estimate or payment shall be required to be made, when in the judgment of the Construction Manager, the Work is not proceeding in accordance with the provisions of the Contract, or when in the Construction Manager's judgment the total value of the Work done since the last estimate amounts to less than one thousand dollars (\$1,000).

Subject to the provisions of this section, the District shall pay the Contractor within thirty (30) days after receipt of undisputed and properly submitted requests for payment from the Contractor. In accordance with Public Contract Code Section 20104.50, if the District fails to pay an undisputed request for payment within the allotted thirty (30) days, the District shall pay interest to the Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure.

- B. Partial Payments: Inclusion of Materials on Hand - Materials, as used herein, shall be considered to be those items which are fabricated and manufactured material and equipment. Only those materials for which the Contractor can transfer clear title to the Owner will be qualified for partial payment. The Contractor may request payment of seventy-five (75) percent of the actual net cost of these materials. The request for partial payment will be subject to retention as provided elsewhere in the Contract Documents.
- C. To receive partial payment for materials and equipment not incorporated in the Work, it shall be necessary for the Contractor to submit to the Construction Manager a list of such materials, at least seven (7) days prior to submitting the monthly estimate of amount earned for work completed. At the Construction Manager's sole discretion, it will approve items for which partial payment is to be made subject to the following:
1. Equipment and materials will only be eligible if given conditional or final acceptance by the Design Consultant and are in apparent compliance with Favorably Reviewed Shop Drawings.
  2. Only materials which have received Favorable Review of shop drawings will qualify.
  3. Eligible equipment or materials must be delivered and properly stored, protected, and maintained in a manner Favorably Reviewed by the Construction Manager, at the job site.
  4. The Contractor's actual net cost for the materials must be supported by paid invoices of suppliers, or other documentation requested by the Construction Manager.
  5. Materials or equipment delivered to the Site less than thirty (30) days prior to their scheduled incorporation in the Work shall not qualify.
  6. Final payment shall be made only for materials actually incorporated in the Work and, upon acceptance of the Work, all materials remaining for which advance payments had been made shall revert to the Contractor, unless otherwise agreed, and partial payments made for these items shall be deducted from the final payment for the Work.
  7. Partial payments for materials and equipment on hand shall not be deemed to be final payment for the material nor relieve the Contractor of its obligations under the Contract.
- D. Effect of Payment – Payment will be made by Owner based on the Construction Manager's observations at the site and the data comprising the progress payment request. Payment will not be a representation that the District has:
1. Made exhaustive or continuous on-site inspections to check the quality or quantity of Work;
  2. Reviewed construction means, methods, techniques, sequences or procedures;



3. Reviewed copies of requisitions received from subcontractors and material suppliers and other data requested by Owner to substantiate Contractor's right to payment;
4. Made examination to ascertain how or for what purpose Contractor has used money previously paid on account of the Contract Sum; or
5. Accepted all or part of the Work.

#### 8.03 RIGHT TO WITHHOLD AMOUNTS

- A. Retention - The District will withhold from each of the partial payments and retain as part security, five (5) percent of the amount earned until the final payment.
- B. Other Withholds - In addition to the amount which the District may otherwise retain under the Contract, the District may withhold a sufficient amount or amounts of any payment or payments otherwise due the Contractor, as in its judgment may be necessary to cover:
  1. For defective work not remedied.
  2. A reasonable doubt that the Contract can be completed for the balance then unpaid.
  3. Damage to another contractor or third party, or to property.
  4. Failure of the Contractor to maintain Record Documents current as required in Section 01720, PROJECT RECORD DOCUMENTS.
  5. Cost of insurance arranged by the District due to cancellation or reduction of the Contractor's insurance.
  6. Failure to submit, revise, resubmit or otherwise conform to the requirements herein for preparing and maintaining a construction schedule as required in Section 01310, PROGRESS SCHEDULES.
  7. Failure to make proper submissions, as specified herein.
  8. Payments due the District from the Contractor.
  9. The Contractor's neglect or unsatisfactory prosecution of the Work including additional engineering and administrative costs related to construction and/or shop drawing errors and the failure to clean up.
  10. Provisions of law that enable or require the District to withhold such payments in whole or in part.
  11. Stop Notice claims filed by Contractor's subcontractors, of any tier, or its material suppliers.

When the above reasons for withhold amounts are removed, payment will be made to the Contractor for amount withheld because of them.

#### 8.04 SECURITY SUBSTITUTION FOR WITHHOLDS

For any retention of amount earned by the Contractor under Sections 00700-8.02, **PARTIAL PAYMENTS**, or 00700-8.07, **FINAL INSPECTION AND PAYMENT**, the Contractor may substitute securities as provided in Section 22300 of the Public Contract Code, as amended, which state in part as follows:

"Provisions shall be included in any invitation for bid and in any contract documents to permit the substitution of securities for any moneys withheld by a public agency to ensure performance under a contract; however, substitution of securities provisions shall not be required where federal regulations or policies, or both, do not allow the substitution of securities. At the request and expense of the contractor, securities equivalent to the amount withheld shall be deposited with the public agency, or with a state or federally chartered bank in the State of California as the escrow agent, who shall then pay those monies to the contractor. Upon satisfactory completion of the contract, the securities shall be returned to the contractor."

"Alternatively, the contractor may request and the District shall make payment of retentions earned directly to the escrow agent at the expense of the contractor. At the expense of the contractor, the contractor may direct the investment of the payments into securities and the contractor shall receive the interest earned on the investments upon the same terms provided for in this section for securities deposited by the contractor. Upon satisfactory completion of the contract, the contractor shall receive from the escrow agent all securities, interest and payments received by the escrow agent from the District, pursuant to the terms of this section."

"The contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon."

The escrow agreement used hereunder shall be substantially similar to the form in Section 00630, **ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION**.

#### 8.05 WARRANTY OF TITLE

No material, supplies, or equipment for the Work under this Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by the seller or supplier. The Contractor warrants good title to all material, supplies, and equipment installed or incorporated in the Work and agrees upon completion of all Work to deliver the premises, together with all improvements and appurtenances constructed or placed thereon by the Contractor, to the District free from any claim, liens, security interest, or charges. The Contractor further agrees that neither the Contractor nor any person, firm, or corporation furnishing any materials or labor for any work covered by this Contract shall have any right to a lien upon the premises or any improvement or appurtenances thereon, provided that this shall not preclude the Contractor from installing metering devices and other equipment of utility companies or of municipalities, the title of which is commonly

retained by the utility company or the municipality. In the event of the installation of any such metering device or equipment, the Contractor shall advise the Owner as to the legal District thereof.

Nothing contained in this paragraph, however, shall defeat or impair the right of such persons furnishing materials or labor under any bond given by the Contractor for their protection or any rights under any law permitting such persons to look to funds due the Contractor in the hands of the District. The provisions of this Paragraph shall be inserted in all subcontracts and material contracts, and notice of its provisions shall be given to all persons furnishing materials for the work when no formal Contract is entered into for such materials.

#### 8.06 SUBSTANTIAL COMPLETION

When the Contractor considers that the Work is Substantially Complete, the Contractor shall notify the Construction Manager in writing. Upon receipt of the notification, the Construction Manager, the District and/or their authorized representatives will make inspection, to determine if the Work and administrative requirements are sufficiently complete in accordance with the Contract Documents so the District can occupy or utilize the Work for its intended use. If items are found which prevent such use or occupancy, the Construction Manager shall notify the Contractor in writing of such items by issuing a Corrective Work Item List.

Upon the completion of such corrective work, the Contractor shall so notify the Construction Manager in writing. The Construction Manager shall inspect the Work to determine its acceptability for Substantial Completion and for determination of the status of any other items which are required to meet the terms of Substantial Completion as listed in the Contract Documents. Upon verification that the project is Substantially Complete, the Construction Manager shall prepare a Certificate of Substantial Completion and the Punch List. The Certificate shall establish the date of Substantial Completion and the responsibilities of the District and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, commencement of warranties required by the Contract Documents, and shall fix the time, not to exceed sixty (60) days, within which the Contractor shall finish all items on the Punch List or remaining work or administrative requirements accompanying the Certificate. When the preceding provisions have been approved by both the District and the Contractor, they shall sign the Certificate to acknowledge their written acceptance of the responsibilities assigned to them in such Certificate. By such acknowledgment, the Contractor agrees to pay the District's actual costs including, but not limited to, charges for engineering, inspection and administration incurred due to the failure to complete the Punch List within the time period provided in the Certificate of Substantial Completion.

#### 8.07 FINAL INSPECTION AND PAYMENT

Upon completion of the Work, including all items on the Punch List, and upon completion of final cleaning, the Contractor shall so notify the Construction Manager in writing. Upon receipt of the notification, the Construction Manager, the District and/or their authorized

representatives will make the final inspection, to determine the actual status of the Work in accordance with the terms of the Contract. If materials, equipment, workmanship or administrative requirements are found which do not meet the terms of the Contract, the Construction Manager shall prepare a Final Inspection List of such items and submit it to the Contractor. Following completion of the work to correct all items in the Final Inspection List the Contractor shall notify the Construction Manager. The Construction Manager shall, in turn, notify the District that the Work has been completed in accordance with the Contract. Final determination of the acceptability of the Work shall be made by the District. After completion of the Work, but prior to its Acceptance by the District, the last partial payment will be made to the Contractor in accordance with Section 00700-8.02, **PARTIAL PAYMENTS**.

After receipt of the last partial payment, but prior to Acceptance of the Work by the District, the Contractor shall send a letter to the Construction Manager. The letter, pursuant to California Public Contract Code Section 7100, shall state that acceptance of the final payment described below shall operate as and shall be, a release to the District, the Construction Manager, the Design Consultant, and their duly authorized agents, from all claim of and/or liability to the Contractor arising by virtue of the Contract related to those amounts. Disputed Contract claims in stated amounts previously filed as provided in Section 00700-7.03, **RESOLUTION OF DISPUTES**, may be specifically excluded by the Contractor from the operation of the release.

Following receipt of all required submittals and the Construction Manager's written statement that construction is complete and recommendation that the District accept the project, the District will take formal action on Acceptance.

Within ten (10) days of the Acceptance by the District of the completed Work embraced in the Contract, the District will cause to be recorded in the office of the County Recorder a Notice of Completion.

Thirty-five (35) days after recording the Notice of Completion of the work involved in the Contract, the District will pay the Contractor in lawful money such sums of money as may be due the Contractor including all sums retained but excluding such sums as have previously been paid the Contractor or as may be needed to cover outstanding stop notice claims or disputes. This payment will constitute the final payment to the Contractor under this Contract except for outstanding stop notice claims and disputed amounts.

In the event of a dispute between the District and the Contractor, the District may in accordance with Public Contract Code Section 7107 withhold from the final payment an amount of one hundred fifty (150) percent of the disputed amount.

**\*\*\* END OF SECTION \*\*\***

**SECTION 00800**

**SUPPLEMENTARY GENERAL CONDITIONS**

**ARTICLE 1 - MODIFICATIONS TO THE GENERAL CONDITIONS**

***1.01 Time Allowed for Completion***

In accordance with the provisions of Section 00700-6.02, **CONTRACT TIME**, Substantial Completion of this project shall be completed within two hundred (200) consecutive days from the date established in the Notice to Proceed for the commencement of Contract Time.

Additionally, all work that necessitates a bypass of the Primary Clarifier shall be performed prior to September 30, 2024.

***1.02 Damages for Delays***

In accordance with the provisions of Section 00700-6.05, **LIQUIDATED DAMAGES**, for the period of time that any portion of the Work remains unfinished after the time fixed for Substantial Completion in Section 00800-1.01, **TIME ALLOWED FOR COMPLETION**, as modified by extensions of time granted by the District, it is understood and agreed by the Contractor and the District that the Contractor shall pay the District the damages listed below.

<u>Item</u>	<u>Dollars Per Day Liquidated Damages</u>
Substantial Completion	\$ 1,500.00

***1.03 Weather Days***

In accordance with the provisions of Section 00700-6.04 B3, **Weather Delays**, an allowance of five (5) working days of weather caused delay have been included in the time allowed for completion. This allowance represents a reasonable assessment of anticipated lost working days based on historical weather patterns. These weather days shall be included in the Contractor's schedule as specified in Section 01310-1.04, **WEATHER CONDITIONS**.

***1.04 Confined Spaces***

It is not anticipated that the Work requires any activity in areas defined as confined spaces per the provisions of Section 00700-4.07 I. Therefore, provisions of Section 00700-4.07 I are not applicable to this Contract.

### ***1.05 Contract Administration***

The following project representatives are hereby designated by the District:

- A. Name of District Representative  
Steven S. Beall, P.E., District Manager
- B. Name of Construction Manager  
To be determined

### ***1.06 Not Used***

## **ARTICLE 2 - INDEMNITY AND INSURANCE**

### ***2.01 Insurance***

Within fifteen 15 days after award of the Contract, the Contractor shall promptly obtain, at its own expense, all the insurance required by Section 00800-Article 2, **INDEMNITY AND INSURANCE**, and submit coverage verification for review and approval by the District prior to the District's execution of the Contract.

The Notice to Proceed with the Work under this Contract will not be issued, and the Contractor shall not commence work, until such insurance has been approved by the District. Such insurance shall remain in full force and effect at all times during the prosecution of the Work and until the final completion and Acceptance thereof. In addition, the Commercial General Liability Insurance shall be maintained for a minimum of five (5) years after final completion and acceptance of the Work. The Notice to Proceed does not relieve the Contractor of the duty to obtain such insurance as required herein.

The Contractor shall not allow any subcontractors to commence work on its subcontract until all similar insurance required of the subcontractor, except Builder's Risk Insurance, has been obtained and verified by the Contractor and submitted to the Construction Manager for the District's review and records. Subcontractors shall furnish original certificates and endorsements as verification of insurance coverage. The insurance liability limits specified in Section 00800-Article 2, **INDEMNITY AND INSURANCE**, shall apply for all subcontractors listed in Section 00430, **DESIGNATION OF SUBCONTRACTORS**. The Contractor shall designate the insurance liability limits for all other subcontractors.

Companies writing the insurance under this article shall be licensed to do business in the State of California or be permitted to do business under the Surplus Line Law of the State of California. Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII.

All policies of insurance required herein shall not be suspended, voided, canceled, reduced in coverage or in limits except after thirty (30) days' prior notice by certified mail return receipt requested has been given to the District.

Contractors shall include all costs for all insurance in the Bids.

Nothing contained in these insurance requirements is to be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from its operations under this Contract. For any claims related to this project, the Contractor's insurance coverage shall be primary insurance as respects the District, the Design Consultant and the Construction Manager, and their officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by the District, its officers, officials, employees, agents or volunteers shall be in excess of the Contractor's insurance and shall not contribute with it.

Any failure of the Contractor to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the District, the Design Consultant and the Construction Manager and their officers, officials, employees, agents or volunteers.

The Contractor shall take out, pay for, and maintain throughout the duration of this Contract and for such additional periods as more specifically required herein the following insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, the Contractor's agents, representatives, employees or subcontractors.

- A. Commercial General and Automobile Liability Insurance - This insurance shall protect the Contractor from claims for bodily injury and property damage which may arise because of the nature of the work or from operations under this Contract.
  - 1. Additional Insureds –The Commercial General Liability policy of insurance shall include as additional insureds the Rodeo Sanitary District, each of its officers, employees, and agents; the Design Consultant, the Construction Manager and each of their partners, officers, employees, and agents and coverage provided to such additional insureds. This policy shall provide coverage to each of the insureds with respect to the work. Both bodily injury and property damage insurance must be on an occurrence basis. The policy shall be endorsed to provide primary coverage to the full limit of liability stated in the declarations, and if there is any other insurance against the loss covered by the policy, that other insurance shall be excess insurance and not contribute with the policy.
  - 2. Amount of Coverage - The bodily injury and property damage liability of the Commercial General Liability insurance shall provide coverage in the following limits of liability: \$1,000,000 on account of any one occurrence with an annual general aggregate limit of not less than \$2,000,000, and \$2,000,000 products and completed operations aggregate, combined single limit. The Automobile Liability insurance policy shall provide minimum

limits of \$1,000,000 per accident arising out of the ownership, maintenance, or use of any owned or non-owned vehicles.

3. Subcontractors - The bodily injury and property damage liability insurance shall not be deemed to require the Contractor to have its subcontractors named as insureds in the Contractor's policy, but the policy shall protect the Contractor from contingent liability which may arise from operations of its subcontractors.
  4. Included Coverage - The above Commercial General Liability insurance shall also include the following coverage:
    - a. Premises - Operations
    - b. Owner's / Independent Contractor's and Contractor's Protective
    - c. Products - Completed Operations
    - d. Personal Injury - (False Arrest, Libel, Wrongful Eviction, etc.)
    - e. Broad Form Property Damage – including to the Maximum Extent Possible, coverage for the Assumption of Liability Pursuant to Completed Operations
    - f. Separation of Insureds / Cross-Liability Provisions
    - g. Duty to Defend all Insureds
    - h. Deletion of any Limitation on Coverage for Bodily Injury or Property Damage Arising out of Subsidence or Soil or Earth Movement.
    - i. Separate Aggregate - A provision that the annual general aggregate and the products and completed operations annual aggregate shall apply separately to each Project for which Contractor provides services away from premises owned by or rented to Contractor.
    - j. Pollution Legal Liability Endorsement
    - k. XCU - (Explosion, Collapse, and Underground Damage) is applicable to operations performed by the Contractor or its sub-contractors.
    - l. Blanket Contractual Liability including the Indemnification Agreement as herein stated.
  5. Umbrella Policy - At the option of the Contractor, primary limits may be less than required, with an Umbrella Policy providing the additional limits needed. This form of insurance will be acceptable provided that the Primary and Umbrella Policies both provide the insurance coverages herein required, including all additional insured requirements. The umbrella policy shall be provided on a “following form” basis with coverage at least as broad as provided on the underlying commercial General Liability insurance.
- B. Workers' Compensation Insurance - In accordance with the provisions of Article 5, Chapter 1, Part 7, Division 2 (commencing with Section 1860) and Chapter 4, Part 1, Division 4 (commencing with Section 3700) of the Labor Code of the State of



California, the Contractor is required to secure the payment of compensation to its employees and for that purpose obtain and keep in effect adequate Workers' Compensation Insurance.

The Contractor is advised 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 shall comply with such provisions and have Employers' Liability limits of \$1,000,000 per accident before commencing the performance of the work of this Contract.

Before the Notice to Proceed with the Work under this Contract is issued, the Contractor shall submit written evidence that the Contractor has obtained for the period of the Contract full Workers' Compensation Insurance coverage for all persons whom it employs or may employ in carrying out the work under this Contract. This insurance shall be in accordance with the requirements of the most current and applicable State Workers' Compensation Insurance Laws.

- C. Builder's Risk Insurance - The District may require Builder's Risk insurance for this Contract, and if so, shall list the insurance premium for such coverage as a separate Bid item. If required, the Contractor shall provide "All Risk or Special Form" Builder's Risk Insurance on the replacement cost basis, in an amount equal to the full replacement cost on a completed value basis. Such insurance shall be obtained, paid for, and maintained by the Contractor and shall cover, but shall not be limited to, fire, lightning, windstorm, hail, explosion, riot, riot attending a strike, civil commotion, smoke damage, damage by aircraft or vehicles, vandalism and malicious mischief, theft, collapse, flood and earthquake. This insurance shall name the District, the Design Consultant, the Construction Manager and the Contractor as insureds, as their interests may appear and shall include coverage, but not by way of limitation, for all damages of loss to the Work and to appurtenances, to materials and equipment to be incorporated into the Project while the same are in transit, stored on or off the Project site, to construction plant and temporary structures.

Pursuant to Section 7105 of the Public Contract Code, the District may also require \$2,000,000 for any damage to the work caused by an Act of God, as defined by Section 7105(b)(2) of that Code. Should the District require this coverage, the insurance premium for such coverage is listed as a separate Bid Item.

Builder's Risk Insurance policies shall contain the following provisions:

- a. The Owner shall be named as loss payee.
- b. The Insurer shall waive all rights of subrogation against the District.

Builder's Risk Insurance may have a deductible clause not to exceed the following limits:

- a. The deductible for coverage for any damage to the work caused by an Act of God, as defined by Section 7105(b)(2) of the Public

Contract Code shall not exceed five percent of the value at risk at the time of the loss. The District shall be named as an insured.

b. All Other Perils: \$5,000

The Contractor shall be responsible for paying any and all deductible costs. The policy shall provide the District the right to occupy the premises without termination of the policy until acceptance of the Project.

- B. Proof of Coverage - Before the Notice to Proceed with the Work under this Contract is issued, the Contractor shall furnish the District with certificate(s) evidencing issuance of all insurance mentioned herein, copies of the policy declaration or information page(s) and endorsements. The certificate(s) and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The endorsements are to be on Forms A-1 and B-1 as included in Section 00650, **GENERAL LIABILITY ENDORSEMENT**, and Section 00651, **AUTO LIABILITY ENDORSEMENT**, or equivalent endorsement forms acceptable to the District. The certificate(s), policy declaration or information page(s), and endorsements are to be received and approved by the District before work commences. Endorsements are not required for Workers Compensation or Builder's Risk Insurances. Such certificates of insurance shall provide that the insurance policy shall not be cancelable, be subject to non-renewal, or otherwise be subject to material modification, except with thirty (30) days prior written notice to the District and Contractor shall also provide certificate(s) evidencing renewals of all insurance required herein, at least ten (10) days prior to the expiration date of any such insurance.

Any deductibles or self-insured retentions must be declared to and approved by the District. At the option of the District, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the District, the Design Consultant and the Construction Manager and their officers, officials, employees and agents; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

In the event of the breach of any provision of this paragraph, or in the event of any notices received which indicates any required insurance coverage will be diminished or canceled, District, at its option, may, notwithstanding any other provisions of this Agreement to the contrary, immediately declare a material breach of this Agreement and suspend all further work pursuant to this Agreement.

- C. Indemnification - To the fullest extent permitted by Law, the Contractor and each subcontractor as to its portion of the Work shall indemnify, defend and hold harmless the District, the Design Consultant and the Construction Manager and their agents, consultants and employees from and against all liability, claims, damages, losses and expenses, including but not limited to attorneys' fees and other litigation costs, arising out of or in any way connected to the performance of the Work, provided that any such liability, claim, damage, loss or expense is attributable to bodily injury, sickness, disease, or death (including that sustained by Contractor's or Subcontractor's employees), or to injury to or destruction of tangible property (other than the Work

itself) including but not limited to the loss of use resulting therefrom. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist.

Contractor's and subcontractor's duty to indemnify and save harmless shall include the duty to defend as set forth in California Civil Code Section 2778; provided, that nothing herein contained shall be construed to require Contractor or subcontractor to indemnify indemnities against any responsibility or liability in contravention of California Civil Code Section 2782.

## ***2.02 Insurance During Guarantee Period***

Contractor shall maintain the above described worker's compensation, public liability and property damage insurance and comprehensive general liability insurance in force during the entire performance of all work the Contractor or its subcontractors during the guarantee period.

## ***2.03 Injury or Illness Reports***

The Contractor shall furnish the Construction Manager with a copy of the Employer's Report of Injury as required by CAL/OSHA immediately following any incident requiring the filing of the report during the prosecution of the Work under this Contract. The Contractor shall also furnish the Construction Manager with a copy of the Employer's Report of injury involving any subcontractor on this project.

## ***2.04 Notification of Insurance Companies***

The Contractor shall advise all insurance companies to familiarize themselves with all of the conditions and provisions of this Contract, and they shall waive the right of special notification of any change or modification of this Contract or of extension of time, or of decreased or increased work, or of the cancellation of the Contract, or of any other act or acts by the District or its authorized employees and agents, under the terms of this Contract, and failure to so notify the aforesaid insurance companies of changes shall in no way relieve the insurance companies of their obligation under this Contract.

## **ARTICLE 3 - NOT USED**

## **ARTICLE 4 - PARTNERING**

The successful Bidder will have the opportunity to enter into a partnering agreement with the District. Partnering consists of a voluntary effort by all parties having a major role in the Project to develop joint goals and establish a cooperative rather than an adversarial atmosphere while executing the construction project. The objective of partnering is the effective completion of the work on schedule, within budget and in accordance with the Contract Documents.

Although partnering is strongly encouraged, it is not a requirement of the Contract. The establishment of a partnering agreement will not change the legal relationship of the parties to the Contract nor relieve either party of any of the terms of the Contract.

To initiate the partnering process, the District and Contractor will meet after the Notice of Award to confirm if both parties agree that partnering will be utilized on the project.

If agreement is reached that partnering will be utilized, the parties will conduct a Partnering workshop prior to the preconstruction conference. Follow-up workshop(s) may also be held throughout the project. All workshops may be conducted by an outside facilitator. It is expected that, at the conclusion of the initial workshop, the parties will express a consensus regarding, among other things, the respective goals in completing the Contract.

A successful partnership will require the participation of the following project personnel:

Contractor:	Company Executive, Project Manager, Superintendent, Foreman, Key suppliers Subcontractor's supervisory personnel
District:	General Manager, Project Manager, Inspector, Key staff
Design Consultant:	Principal-in-Charge, Project Manager, Project Engineer
Construction Manager:	Principal-in-Charge, Project Manager, Inspectors(s)

The District will make all the necessary arrangements for the workshop(s). The Contractor's costs associated with effectuating this partnering agreement will include attendance of appropriate personnel at the workshops. The District will pay for the actual site and facilitator costs for the Partnering workshop.

## **ARTICLE 5 - RECORD DRAWINGS AND ADDITIONAL INFORMATION**

The following record information is available for review by the Contractor at the District's offices. The District makes no warranty as to the accuracy of this information. Only drawing sets are available – no specifications.

- Contract Drawings for Construction of Sewerage & Sewage Treatment Facilities, 1957 (Primary Treatment Plant) Not Record Drawings
- Water Pollution Control Facilities – 1973 (Secondary Treatment Plant) Not Record Drawings
- Anaerobic Digester Upgrade, 2002
- Effluent Pump Station, 2003

## **ARTICLE 6 - SUBSTANTIAL COMPLETION**

Substantial completion of the Project as required by Section 00700-8.06, **SUBSTANTIAL COMPLETION**, requires that the following portions of the Work must be completed in accordance with the requirements of the Contract Documents:

- Completion of the Work as required by the Contract Documents to allow the District to occupy and utilize the Project for its intended purpose.
- Completion of the Corrective Work Item List as described in Section 00700-8.06, **SUBSTANTIAL COMPLETION**
- All testing required by the Contract and the Rodeo Sanitary District has been successfully completed.
- All process equipment shall be installed and operational.
- All items related to health and safety of Owner operations and maintenance staff, including warning signs, guardrails, and safety equipment shall be complete.
- All record drawings have been submitted, updated, reviewed and approved.

Portions of the Work not essential to the system operation, which can be completed without interruption of system operations, may be completed after the Work is substantially complete, and may include the following items:

- Final Site Clean-Up
- Restriping of roadways
- Completion of the Punch List prepared by the Construction Manager in accordance with Section 00700-8.06, **SUBSTANTIAL COMPLETION**.

**\*\*END OF SECTION\*\***

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## SECTION 01010

### SUMMARY OF WORK

#### PART 1 - GENERAL

##### ***1.01 WORK COVERED BY CONTRACT DOCUMENTS***

Work to be done generally consists of replacement and modification of existing equipment including:

- Primary Clarifier Equipment:
  - The Contractor will replace all wear items including scum skimmer wipers, bottom sludge scrapper blades, and associated brackets.
  - The Contractor will provide one complete set of all wear items including scum skimmer wipers, bottom sludge scrapper blades, and associated brackets.
  - The Contractor will check that all the bolts are in place and properly tightened.
- The Contractor shall remove the CMU wall above the headworks structure, relocate all existing attachments. A new handrail shall be provided at this location.
- Bridge and Handrail Replacement:
  - The Contractor will remove the existing bridge and install a new bridge with handrails that include access for drive maintenance, sampling, and operator access to interior well of clarifier.
  - The Contractor will provide and install a new personal protection davit crane base.
  - The Contractor will replace the old existing handrail system and add a new handrail system along length of CMU wall barrier that is being removed above the headworks structure. Temporary guardrails shall be provided during construction for all areas of new or replacement handrails.
- Concrete Protective Coatings Improvements:
  - The Contractor will provide a new protective coating system to protect the primary clarifier interior concrete walls from further degradation.
  - The Contractor will provide concrete surface repairs at the headworks structure where the top layer has eroded.

- Electrical Power and Control Improvements:
  - The Contractor will replace the existing junction box with new larger stainless-steel weatherproof enclosures.
  - The Contractor will install a new local disconnect switch for the clarifier mechanism near the bridge entrance.
  - The Contractor will install a new 360-degree LED light with light post on the bridge to illuminate the clarifier drive.
  - The Contractor will replace all electrical conduits and conductors currently installed along the bridge with PVC coated rigid steel and to replace the electrical conduit and conductors that will be relocated due to the CMU wall barrier that is being removed above the headworks structure.

## ***1.02 WORK SEQUENCE AND CONSTRAINTS***

The work sequence for construction of the required facilities will be determined by the Contractor based on the constraints listed in this section.

A. Not Used

B. Bypassing

Bypassing or discharging of untreated or partially treated sewage to surface waters or drainage courses is prohibited at all times and is prohibited during construction. In the event accidental bypassing or discharging is caused by the Contractor's operations, the District shall immediately be entitled to employ others to stop the bypassing or discharging without giving written notice to the Contractor. If a contractor-initiated bypass occurs, the contractor shall pay all expenses incurred by the District and any fines imposed by State and Federal agencies, courts, and third party suits.

C. Not Used

D. Specific Sequence and Constraints

The Contractor shall note that only certain structures, tie-ins and constraints are addressed in this section. All work, whether or not addressed here, shall be governed by applicable parts of this section and schedules and procedures further submitted for approval.

The Contractor shall include all work described in this section in the construction schedule. The sequence and constraints identified in this section shall be followed in the construction of the Work. However, alternatives to these sequences and constraints may be submitted by the Contractor for review by the Construction Manager.



Specific Sequences and Constraints:

1. Primary Clarifier Equipment
  - a. The District has the ability to bypass the Primary Clarifier during the WPCP low flow timeframe is between May 1st and September 30<sup>th</sup>.
  - b. The District will conduct the bypass operation and drain the primary clarifier.
  - c. All work within the primary clarifier, including cleaning and dry shall be provided by the Contractor within the WPCP low flow timeframe.
  - d. Flow must be restored to a fully functional Primary Clarifier by October 1<sup>st</sup>.
2. Primary Clarifier and Bridge Submittal(s) and Structural Observations:
  - a. The Primary Clarifier shall be drained within a week following NTP. The Contractor shall coordinate with the District to take any necessary measurements and submit the primary clarifier and bridge submittal(s) within 6 weeks of draining the primary clarifier.
  - b. Structural observations as described on Structural Plans shall be conducted during this initial bypass period.
  - c. Following these tasks the Primary Clarifier shall be placed back in service, until the Contractor is ready to install the Primary Clarifier Equipment.

### ***1.03 OCCUPANCY REQUIREMENTS***

- A. Not Used

### ***1.04 DISTRICT FURNISHED MATERIALS***

None.

### ***1.05 TRENCH EXCAVATION***

Not Applicable

### ***1.06 WORK UNDER OTHER CONTRACTS***

- A. District, utilities, and others may perform activities within Project area while the Work is in progress. Schedule the Work with District, utilities, and others to minimize mutual interference.
- B. Not Used

### **1.07 WORK PERCENTAGES**

The Contractor shall perform at least seventy-five (75) percent of the Contract bid amount. This portion of work shall encompass the performance of work by the Contractor's forces and equipment and the procurement of materials and equipment by the Contractor.

Subcontractors shall not be responsible for the performance of any work or procurement of materials and equipment within the above Contractor's work percentage allotment.

### **1.08 UNDERGROUND FACILITIES**

The Contractor shall exercise care in all excavations to avoid damage to existing underground facilities. This shall include potholing or hand digging in those areas where underground facilities are known to exist until they have been sufficiently located to avoid damage to the facilities.

Prior to fabrication of any materials, the Contractor shall verify the location and elevations of existing underground piping, utilities and facilities, to ensure proper connection and/or clearance.

The Contractor shall exercise care in maintaining those pipes and facilities to be abandoned and/or removed which are required for the continuing operation of the existing facilities until such time as they can be abandoned. The Contractor shall exercise extreme caution in working in any area adjacent to existing facilities. It is essential that the existing facilities be maintained in service until the new work is ready for full time operation and is placed in service.

No additional compensation shall be provided the Contractor for compliance with the provisions of this section or for the damage and repair of facilities due to the lack of such care.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*\*END OF SECTION\*\*\***

**SECTION 01025**  
**MEASUREMENT AND PAYMENT**

**PART 1 - GENERAL**

**1.01 General**

- A. See General Conditions for submittal of estimate of work completed and partial payments procedures.
- B. Payment for the various items of the Bid Schedule, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all labor, materials, equipment and services, and do all work for the construction, maintenance, testing, and placing in trouble-free operation all items of work being described, including all appurtenances thereto and including the costs of all permits and the cost of compliance 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).
- C. No separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs therefor shall be included in the prices named in the Bid Schedule for the various items of work.
- D. Related Sections

<u>Section</u>	<u>Title</u>
Section 01301	Schedule of Values

- E. Measurement of Pay Quantities
  - 1. Contractor shall determine by measurement or estimate of quantities or percentages complete and submit the Application for Payment to the Owner's Representative.
    - a. Owner's Representative shall review and concur with all proposed quantities and percentages complete.
    - b. Contractor and Owner's Representative will meet to resolve differences in payment estimates.
    - c. Contractor shall submit adjusted Final Application for Payment after resolution of differences with Owner's Representative.
  - 2. No payment will be made for:
    - a. Work performed or materials placed outside of the lines indicated on the Drawings or as established by the Engineer.

- b. Materials wasted, used, or disposed of in a manner not called for under the Contract Documents.
  - c. Rejected materials (including material rejected after it has been placed, if rejection is due to the Contractor's failure to comply with the provisions of the Contract Documents).
  - d. Hauling and disposing of rejected materials.
  - e. Material on hand after completion of the Work.
  - f. Material not unloaded from a transport vehicle.
  - g. Defective Work not accepted by the Owner.
  - h. Material placed outside the lines indicated on the plans or given by the Construction Manager.
3. Measurements of the completed work shall be in accordance with, and by instruments and devices calibrated to United States Standard Measures and the units of measurement for payment, and the limits thereof, shall be made as shown on the Plans, Specifications, General Requirements, and Supplementary Conditions.

F. Units of Measurement

Measurements shall be in accordance with U.S. Standard Measures.

1. A pound is an avoirdupois pound.
2. A ton is 2,000 pounds avoirdupois.
3. The unit of liquid measure is the U.S. gallon.

D. Certified Weights

1. When payment is to be made on the basis of weight, the weighing shall be done on certified platform scales, or when approved by the Construction Manager, on a completely automated weighing and recording system.
2. The Contractor shall furnish the Construction Manager with duplicate licensed weighmaster's certificates showing the actual net weights.
3. The District will accept the certificates as evidence of the weights delivered.

E. Methods of Measurement

1. Materials and items of work which are to be paid for on the basis of measurement shall be measured in accordance with the method stipulated in the particular sections involved.
2. In determining quantities, all measurements shall be made in a horizontal plane unless otherwise specified.
3. Material not used from a transporting vehicle shall be determined by the Construction Manager and deducted from the certified tag.

4. When material is to be measured and paid for on a volume basis and it *would* be impractical to determine the volume, or when requested by the Contractor in writing and approved by the Construction Manager in writing, the material will be weighed and converted to volume measurement for payment purposes.
5. Factors for conversion from weight measurement to volume measurement will be determined by the Construction Manager and shall be agreed to by the Contractor before such method of measurement of pay quantities will be adopted.
6. Full compensation for all expense involved in conforming to the above 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 allowances will be made therefore.

## **1.02 BID ITEMS**

The Bid amounts for each Bid Item will be used for comparative bid analysis. The Bid amounts will also form the basis of monthly progress payments. Each Lump Sum bid amount will undergo further breakdown as described later in this section. Unit prices for any unit price bid items will be the basis for monthly progress payment determinations and for any changes related to that Work item. 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 (work phase) as shown and specified.

### **A. Bid Item 1 – Mobilization**

1. This bid item shall be lump sum. Payment shall be made at seventy five (75%) percent of the bid item amount on the first progress payment following completion of mobilization and the remaining amount on the final progress payment, with retention withheld as allowed by the contract documents.
2. This bid item shall include payment for obtaining all bonds, all Contractor acquired permits, licenses, agreements, certifications, notices of intent, and temporary easements; moving onto the site of all equipment, materials and staff including obtaining and set up of Contractor's staging area/yard; furnishing and erecting all needed construction facilities, fencing, project signage, project security, demobilization, preconstruction photographs, video recording of surface features, progress schedules and reports, contract meetings, and record drawings.
3. No payment for mobilization, or any part thereof, will be approved for payment under the contract until all applicable mobilization items listed above have been completed.
4. This amount shall not exceed five percent (5%) of the total bid price for the work.

B. Bid Item 2 – Demolition

1. This bid item shall be paid by lump sum.
2. Payment for this item will be prorated over the course of the project based on percentage complete.
3. This bid item includes site demolition, bypass work, equipment protection, removal of bridge, removal of handrail system, removal of retaining wall, hauling, removal of associated facilities attached to equipment that are scheduled for removal, disposal and incidentals for demolition of facilities located within the site in accordance with the Contract Documents.

C. Bid Item 3 – Primary Clarifier Equipment

1. This bid item shall be paid by lump sum.
2. Payment for this item will be prorated over the course of the project based on percentage complete.
3. This bid item includes field measurements, submittals, bypass coordination, cleaning of the primary clarifier, furnishing of all materials, equipment and labor required for the primary clarifier equipment replacement, supply of primary clarifier replacement parts and checking primary equipment in accordance with the Contract Documents.

D. Bid Item 4 – Primary Clarifier Allowance

1. This bid item is an allowance item and payment for this work will be based on force account stipulations of actual work completed consistent with Section 01035-1.03, **FORCE ACCOUNT PAYMENT**.
2. This bid items includes all work not specifically included in the Contract Document but is necessary for Primary Clarifier improvements as directed by the District during construction.
3. The Amount given on Bid Item 4 is the sum of money set aside for this Allowance. These amounts shall be included in the Contract Sum on the Bid Form. If the cost of work done under any Allowance Item is less than the amount given on the Bid Form under that Allowance Item, the Contract Sum shall be reduced by the difference between the amount given in the Bid Form and the cost of work actually done.

E. Bid Item 5 – Bridge Replacement

1. This bid item shall be paid by lump sum.
2. Payment for this item will be prorated over the course of the project based on percentage complete.

3. This bid item includes submittals, furnishing of all materials, equipment and labor required for the primary clarifier bridge replacement in accordance with the Contract Documents including, but not limited to access hatches, davit crane base, handrailings, and handrail gates attached to the bridge.
- F. Bid Item 6 – Handrailing
1. This bid item shall be paid per lineal foot.
  2. This bid item includes submittals, furnishing all materials, equipment, and labor required to install handrails not included as part of subsequent bid items as shown in accordance with the Contract Documents.
- G. Bid Item 7 – Protective Coating System for Primary Clarifier
1. This bid item shall be paid by lump sum.
  2. Payment for this item will be prorated over the course of the project based on percentage complete.
  3. This bid item includes submittals, furnishing of all materials, equipment and labor required perform surface preparation, tenting, protection of existing primary clarifier components and anchors, installation of protective coating on concrete wastewater process structure, including removal, storage and re-installation of the weir, baffle and supports in accordance with the Contract Documents.
- H. Bid Item 8 – Concrete Surface Repair
1. This bid item shall be paid by lump sum.
  2. Payment for this item will be prorated over the course of the project based on percentage complete.
  3. This bid item includes submittals, furnishing of all materials, equipment and labor required for the coating sample, surface preparation, existing equipment protection, and installation of the concrete surface repair coating in accordance with the Contract Documents.
- I. Bid Item 9 – Electrical, Instrumentation, and Controls
1. This bid item shall be paid by lump sum.
  2. Payment for this item will be prorated over the course of the project based on percentage complete.
  3. This bid item includes all electrical work required to complete the project including submittals, temporary facilities, equipment relocation, conduit, wiring, disconnect panel, junction box, lighting system to illuminate the primary clarifier drive, testing, startup, and installation of equipment in accordance with the Contract Documents.

The Total amount bid includes the summation of Bid Items 1 through 9 as specified in the Contract Documents and represents the total bid price to complete the Work in the Contract Documents.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*\* END OF SECTION \*\*\***



## SECTION 01035

### MODIFICATION PROCEDURES

#### PART 1 - GENERAL

##### ***1.01 CHANGES IN CONTRACT PRICE***

This section provides supplementary procedures for the administration of changes to the Contract as specified in Section 00700-Article 7, **CHANGES IN THE WORK**. Whenever corrections, alterations, or modifications of the Work under this Contract are ordered by the Construction Manager and approved by the District and increase the amount of work to be done, such added work shall be known as extra work; and when such corrections, alterations, or modifications decrease the amount of work to be done, such subtracted work shall be known as omitted work.

The difference in cost of the work affected by such change will be added to or deducted from the amount of the Contract price, as the case may be, by a fair and reasonable valuation, which shall be determined in one or more of the following ways as directed by the Construction Manager:

- A. Where applicable, by unit prices accepted by the District and stated in the Contract Documents;
- B. By unit prices subsequently fixed by agreement between the parties;
- C. By an acceptable lump sum proposal from the Contractor; or
- D. By Force Account (as described in Section 01035-1.03, FORCE ACCOUNT PAYMENT), when directed in writing and administered by the District through its agents or representatives.

The prices agreed upon and any agreed upon adjustment in Contract Time shall be incorporated in the written order issued by the District, which shall be written so as to indicate an acceptance on the part of the Contractor as evidenced by its signature. By signature of the Change Order, the Contractor acknowledges that the adjustments to cost and time contained in the Change Order are in full satisfaction and accord, payment in full, and so waives any right to claim any further cost and time impacts at any time during and after completion of the Contract for the changes encompassed by the Change Order.

##### ***1.02 NEGOTIATED CHANGE ORDERS***

Under the methods described in Sections 01035-1.01B and 01035-1.01C, the Contractor shall submit substantiating documentation with an itemized breakdown of Contractor and subcontractor direct costs, including labor, material, equipment rentals, and approved services, pertaining to such ordered work in the form and detail acceptable to the

Construction Manager. The direct costs shall include only costs as described in Section 01035-1.04, **DIRECT COST CATEGORIES**.

The Construction Manager will review the Contractor's proposal for the change and negotiate an equitable adjustment with the Contractor. After there is an agreement the Construction Manager will prepare and process the Change Order and make a recommendation for action by the District. All Change Orders must be approved by the District in writing before the work can be authorized and the Change Order executed.

### ***1.03 FORCE ACCOUNT PAYMENT***

If either the amount of work or payment for a Change Order cannot be determined or agreed upon beforehand, the District may direct by written Change Order or Field Order that the work be done on a force account basis. The term "force account" shall be understood to mean that payment for the work will be done on a time and expense basis, that is, on an accounting of the Contractor's forces, materials, equipment, and other items of cost as required and used to do the work. For the work performed, payment will be made for the documented actual cost of the work as described in Section 01035-1.04, **DIRECT COST CATEGORIES**.

Prior to the commencement of force account work, the Contractor shall notify the Construction Manager of its intent to begin work. Labor, equipment and materials furnished on force account work shall be recorded daily by the Contractor upon report sheets acceptable to the Construction Manager. The reports, if found to be correct, shall be signed by both the Contractor and Construction Manager, or inspector, and a copy of which shall be furnished to the Construction Manager no later than the working day following the performance of the work. The daily report sheet shall thereafter be considered the true record of force account work provided. If the Construction Manager, or inspector, do not agree with the labor, equipment and/or materials listed on the Contractor's daily force account report, the Contractor and Construction Manager, or inspector, shall sign-off on the items on which they are in agreement. The Construction Manager shall then review the items of disagreement and will advise the Contractor, in writing, of its determination. If the Contractor disagrees with this determination, it shall have the right to file a claim notice as provided in Section 00700-7.03A, **Notice**.

The Contractor shall maintain its records in such a manner as to provide a clear distinction between the direct costs of work paid for on a force account basis and the costs of other operations.

To receive partial payments and final payment for force account work, the Contractor shall submit, in a manner approved by the Construction Manager, detailed and complete documented verification of the Contractor's and any of its subcontractor's actual costs involved in the force account pursuant to the pertinent Change Order or Field Order. Such costs shall be submitted within thirty (30) days after the work has been performed. No payments will be made for work billed and submitted to the Construction Manager after the thirty (30) day period has expired.

The force account invoice shall itemize the materials used and shall cover the direct costs of labor and the charges for equipment rental, whether furnished by the Contractor, subcontractor, or other forces. The invoice shall be in a form acceptable to the Construction Manager and shall provide names or identifications and classifications of workers, the hourly rate of pay and hours worked, and also the size, type, and identification number of equipment and hours operated. Material charges shall be substantiated by valid copies of vendor's invoices.

#### **1.04 DIRECT COST CATEGORIES**

The categories described below are defined to be direct costs. No other type of costs will be allowable as direct costs. Direct costs shall not include any labor costs pertaining to the Contractor's and subcontractors' managers or superintendents, their office and engineering staffs, the cost of their offices, facilities, vehicles, or anyone not directly employed on such work, nor small tools and supplies. All such items are considered indirect costs which form a part of the Contractor's and subcontractors' overhead expenses.

The District reserves the right to furnish such labor, materials and equipment as it deems expedient, and the Contractor shall have no claim for profit or added fees on the cost of such items.

##### **A. Direct Labor**

The Contractor will be paid the cost of direct craft labor for the workers and foremen (when authorized by the Construction Manager) used or proposed to be utilized in the actual and direct performance of the work.

The direct labor cost will be the actual payroll cost, including wages, subsistence and travel payments, fringe benefits as established by negotiated labor agreements or state prevailing wages. To these actual wages, will be added a labor surcharge set forth in the State of California Department of Transportation publication entitled Labor Surcharge & Equipment Rental Rates. An additional allowance of eight (8) percent will be added to this labor rate surcharge. No other fixed labor burdens will be considered, unless approved in writing by the Construction Manager.

Except as otherwise provided, the Contractor shall receive no additional compensation for wage premiums resulting from overtime work performed under change conditions without the prior written authorization of the Construction Manager.

##### **B. Materials**

The Contractor will be paid the cost of the materials to the purchaser, including tax and delivery if paid. If the Contractor does not furnish satisfactory evidence of the cost of such materials, it shall be deemed to be the lowest current price for the materials delivered to the jobsite for the applicable quantities of the materials.

Small tools and supplies will be paid for based on seven and a half (7.5) percent of the direct labor costs for the change prior to inclusion of the markup allowances provided for in Section 01035-1.05, **MARK-UP ALLOWANCES**. The allowance for small tools and supplies shall be deemed as full compensation for all tools and materials which are incidental to performing work including safety equipment provided by the Contractor to its employees.

C. Construction Equipment

The cost of construction machinery and equipment for changes shall be based on fair rental cost or equivalent rental cost of owned equipment. Such costs will be allowed for only those days or hours during which the equipment is in actual use. Payment shall be based on actual rental and transportation invoices but shall not exceed the rental rates listed for such equipment in the State of California Department of Transportation publication entitled "Labor Surcharge and Equipment Rental Rates" which is in effect on the date upon which the work is performed. Owner-operated equipment rates shall not exceed the rates in the aforesaid Rental Rate publication plus the labor costs as provided in Section 01035-1.04A, **Direct Labor**. The rental cost allowed for equipment will, in all cases, be understood to cover all fuel, supplies, repairs, ownership, and incidental costs and no further allowances will be made for those items, unless specific written agreement to that effect is made. Compensation for idle time of equipment through delays caused by the District will be made consistent with Section 8-1.09, Right of Way Delays, of the Caltrans Standard Specifications.

Individual items of construction equipment or small tools which have a replacement value of five hundred dollars (\$500) or less shall not be charged to the Change Order work unless it can be demonstrated that the particular item is needed solely for the completion of the Change Order work.

**1.05 MARK-UP ALLOWANCES**

The Contractor and subcontractors shall be entitled to compensation for indirect and overhead costs, bond and insurance costs, and profit for Change Order work. This compensation shall be in the form of markup percentages applied to the direct cost of the Change Order work, as further described below. The maximum markup which will be allowed for the Contractor's combined overhead and profit will be:

- A. For work by its own organization, the Contractor may add up to the following percentages:
  - 1. Direct Labor
    - a. Negotiated Change Orders (Section 01035-1.02): 25 percent
    - b. Force Account (Section 010350-1.03): 15 percent
  - 2. Materials: 10 percent
  - 3. Equipment (owned or rented): 15 percent

- B. For all such work performed by subcontractors, such subcontractor may add the same percentages as the Contractor as listed in Section 01035-1.05A above to its actual net increase in costs for combined overhead and profit. The Contractor may add up to five (5) percent of the subcontractor's total for its combined overhead and profit. No further compensation will be allowed for the Contractor's administration of the work performed by the subcontractor.
- C. For all such work done by sub-tier subcontractors, such sub-subcontractors may add the same percentages as the Contractor as listed in Section 01035-1.05A above to its actual net increase in costs for combined overhead and profit. The subcontractor may add up to five (5) percent of the sub-subcontractor's total for its combined overhead and profit. The Contractor may add up to five (5) percent of the subcontractor's total for its combined overhead and profit. No further compensation will be allowed for the Contractor's administration of the work performed by the subcontractor.
- D. For all such work performed by consultants, engineers, surveyors, etc. the combined total allowable markup for the Contractor and all subcontractors shall be five (5) percent of the fee total.
- E. To the total of the direct costs and markups allowed herein under, not more than two (2) percent shall be added for any and all additional contractor bond and insurance, other than labor insurance. The compensable percentage for additional bonds and insurance shall be based on actual costs for the contractors bonds and insurance, as substantiated through documentation submitted to the Construction Manager.

When both additional and deleted work are involved in any one change, the markup allowances of this section shall be applied to the net extra cost of the work, if any, after subtraction of the costs for the omitted work from the extra work. For Change Order work which results in a net decrease in cost a minimum of five (5) percent markup shall be added to the sum of the direct labor, materials and equipment as a deduction for profit, indirect and overhead costs, and reduction in bond and insurance. The Contractor shall not be entitled to nor claim for anticipated profits on work that may be omitted.

The added fixed fees shall be considered to be full compensation, covering the cost of general supervision, overhead, profit, small tools, incidentals and any other general expenses. The above fixed fees represent the maximum limits which will be allowed, and they include the Contractor's and all subcontractors' indirect field and home office expenses and all other costs for cost proposal preparation, schedule analysis and preparation, operation and maintenance manual documentation, and record documents and change order administration.

## **1.06 INCREASED OR DECREASED QUANTITIES**

Increases or decreases in the quantity of a Contract unit price bid item of work will be determined by comparing the total pay quantity of such item of work with the Bid Schedule quantity.

If the total pay quantity of any item of work required under the Contract varies from the Bid Schedule quantity by twenty-five (25) percent or less, payment will be made for the quantity of work of an item performed at the Contract unit prices therefore, unless eligible for adjustment pursuant to Section 01035-1.06D, **Changes in Character of Work**.

If the total pay quantity of any item of work required under the Contract varies from the Bid Schedule quantity by more than twenty-five (25) percent in the absence of an executed Contract change order specifying the compensation to be paid, the compensation payable to the Contractor will be determined in accordance with Sections 01035-1.06A, 1.06B or 1.06C, as the case may be.

### **A. Increases of More Than Twenty-Five (25) Percent**

Should the total pay quantity of any item of work required under the Contract exceed the Bid Schedule quantity by more than twenty-five (25) percent the work in excess of one hundred twenty-five (125) percent of the Bid Schedule quantity will be paid for by adjusting the Contract unit price, as hereinafter provided. At the option of the Construction Manager, payment for the work involved in such excess will be made on the basis of force account as provided by Section 01035-1.03, **FORCE ACCOUNT PAYMENT**.

Such adjustment of the Contract unit price will be the difference between the Contract unit prices and the actual unit costs, which will be determined as hereinafter provided, of the total pay quantity of the item. If the costs applicable to such item of work include fixed costs, such fixed costs will be deemed to have been recovered by the Contractor by the payments made for one hundred twenty-five (125) percent of the Bid Schedule quantity for such item, and in computing the actual unit cost, such fixed costs will be excluded. Subject to the above provisions, such actual unit cost will be determined by the Construction Manager in the same manner as if the work were to be paid for on a force account basis as provided in Section 01035-1.03, **FORCE ACCOUNT PAYMENT** or such adjustment will be as agreed to by the Contractor and the Construction Manager.

When the compensation payable for the number of units of an item of work performed in excess of one hundred twenty-five (125) percent of the Bid Schedule quantity is less than \$5,000 at the applicable Contract unit price, the Construction Manager reserves the right to make no adjustment in the price if it so elects, except that an adjustment will be further considered if requested in writing by the Contractor.

### **B. Decreases of More Than Twenty-Five (25) Percent**

Should the total pay quantity of any item of work required under the Contract be less than seventy-five (75) percent of the Bid Schedule quantity, an adjustment in compensation pursuant to this Section will not be made unless the Contractor so requests in writing. If the Contractor so requests, the revised quantity will be paid for by adjusting the Contract unit price as hereinafter provided. At the option of the Construction Manager, payment for the quantity of the work of such item performed will be made on the basis of force account as provided in Section 01035-1.03, **FORCE ACCOUNT PAYMENT**. However, in no case shall the payment for such work be less than that which would be made at the Contract unit price.

Such adjustment of the Contract unit price will be the difference between the Contract unit price and the actual unit cost of the total pay quantity of the item, including fixed costs. Such actual unit cost will be determined by the Construction Manager in the same manner as if the work were to be paid for on a force account basis as provided in Section 01035-1.03, **FORCE ACCOUNT PAYMENT**; or such adjustment will be as agreed to by the Contractor and the Construction Manager.

The payment for the total pay quantity of such item of work will in no case exceed the payment which would have been made for the performance of seventy-five percent (75%) of the Bid Schedule of the quantity for such item at the original Contract unit price.

C. Eliminated Items

In the event that a part of the Work is to be eliminated in its entirety and such Work is covered by unit price(s) contained in the Bid and/or Contract Documents, the price of the eliminated Work item shall be based on the applicable unit price(s). The Contractor shall be paid five (5) percent of the total extended amount (bid price times quantity) for the eliminated Work item in consideration of the applicable Contractor's overhead costs.

Should any Contract item of the Work be eliminated in its entirety, in the absence of an executed Contract Change Order covering such elimination, payment will be made to the Contractor for actual costs incurred in connection with such eliminated Contract item if incurred prior to the date of notification in writing by the Construction Manager of such elimination.

If acceptable material is ordered by the Contractor for the eliminated item prior to the date of notification of such elimination by the Construction Manager, and if orders for such material cannot be canceled, it will be paid for at the actual cost, including a five (5) percent mark-up, to the Contractor. In such case, the material paid for shall become the property of the District and the actual cost of any further handling will be paid for. If the material is returnable to the vendor and if the Construction Manager so directs, the material shall be returned and the Contractor will be paid for the actual costs of charges made by the vendor for returning the

material. The actual cost of handling returned material will be paid for by the District.

D. Changes in Character of Work

If an ordered change in the Plans and Specifications materially changes the character of work of a Contract unit price bid item from that on which the Contractor based its Bid price, and if the change increases or decreases the actual unit cost of such changed item as compared to the actual or estimated actual unit cost of performing the work of an item in accordance with the Plans and Specifications originally applicable thereto, in the absence of an executed Contract Change Order specifying the compensation payable, an adjustment in compensation therefore will be made in accordance with the following:

The basis of such adjustment in compensation will be the difference between the actual unit cost to perform the work of an item or portion thereof involved in the change as originally planned and the actual unit cost of performing the work of an item or portion thereof involved in the change, as changed. Actual unit costs will be determined by the Construction Manager in the same manner as if the work were to be paid for on a force account basis as provided in Section 01035-1.03, **FORCE ACCOUNT PAYMENT**; or such adjustment will be agreed to by the Contractor and the Construction Manager. Any such adjustment will apply only to the portion of the work of an item actually changed in character. At the option of the Construction Manager, the work of an item or portion of item which is changed in character will be paid for by force account as provided in Section 01035-1.03, **FORCE ACCOUNT PAYMENT**.

If the compensation for an item of work is adjusted under this Section, the costs recognized in determining such adjustment shall be excluded from consideration in making an adjustment for such item of work under the provisions in Sections 01035-1.06A, **Increases of More Than Twenty-Five (25) Percent** and 1.06B, **Decreases of More Than Twenty-Five (25) Percent**.

### ***1.07 COST PRICING DATA AND ACCESS TO RECORDS***

All cost and pricing data submitted by the Contractor with respect to any change, prospective or executed, or any claim for extra compensation shall be a true, complete, accurate and current representation of actual cost and pricing of the work. The Construction Manager may require a formal certification as to cost and pricing data submitted by the Contractor.

The Construction Manager shall have access, upon reasonable notice during normal business hours, to any books, documents, accounting records, papers, project correspondence, project files, scheduling information and other relevant records of the Contractor and all subcontractors directly or indirectly pertinent to the work, original as well as changes and claimed extra work, and the Contract for the purpose of making audit, examination, excerpts and transcriptions and in order to verify or evaluate any change,



prospective or executed, or any claim for which compensation has been requested or notice of potential claim has been tendered.

Such books, documents, and other records mentioned above shall include, but are not limited to all those reasonably necessary to determine the accurate amount of direct and indirect costs, job site, and delay and impact costs, however characterized, and shall include the original Bid and all documents related to the Bid and its preparation, as well as, the as-planned construction schedule and all related documents.

Such access shall include the right to examine and audit such records and make excerpts, transcriptions, and photocopies at the District's cost.

### ***1.08 TIME EXTENSIONS FOR CHANGE ORDERS***

If the Contractor requests a time extension for the extra work necessitated by a proposed Change Order, the request must comply with the applicable requirements of Section 01310-1.06, **TIME IMPACT ANALYSES**.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*\*END OF SECTION\*\*\***

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## SECTION 01050

### FIELD ENGINEERING

#### PART 1 - GENERAL

##### ***1.01 DATUM***

Vertical and horizontal datum is based on the coordinates and elevations shown on the Drawings. The Contractor shall establish other control and reference points from these District furnished reference points as required to properly layout the Work. The Contractor shall confirm all relative elevations between manholes identified on the plan prior to start of construction and shall provide certification of that information with submittal of the cut sheets for open trench replacement segments. For manholes associated with pipe bursting, all relative elevations shall be submitted no less than seven calendar days prior to start of construction on that segment. All connections shall be installed based on actual elevations of existing structures to which connections are made.

Per Assembly Bill 1414, prior to construction, survey monuments are to be referenced in the field and "Corner Records" are to be filed with the County Surveyor as noted in the encroachment permit. Contractor shall protect control points and preserve permanent reference points during construction. Any control points or monuments lost, disturbed or destroyed by the Work shall be replaced by the Contractor's surveyor.

##### ***1.02 QUALITY ASSURANCE***

The Contractor's surveyor or engineer responsible for surveying specified herein shall be a registered land surveyor in the state of California.

##### ***1.03 LINES AND GRADES***

The Contractor shall lay out all work, including structures and pipelines, and shall be responsible for any errors resulting therefrom. In all questions arising as to proper location of lines and grades, the Construction Manager's decision will be final.

As part of the bid price for the construction of the improvements, the Contractor shall provide and be responsible for the layout of all work. The Contractor shall provide all necessary surveys, field staking, and positioning for the construction of all components at the proper alignment, elevations, grades, and positions, as indicated on the Drawings and as required for the proper operation and function. The Contractor shall stake its work limits.

The Contractor's layout shall be based on existing structures, survey control and bench marks established by the District.

The Contractor shall supply such labor as required, at no extra charge, to aid and assist the Construction Manager in checking location and grades of the work as set by the Contractor

if the Construction Manager desires to perform this checking. This shall include moving materials and equipment located between monuments and the construction work.

For this project, the Contractor is responsible for surveying the elevation of the clarifier equipment, removal of some of the equipment and re-installing the equipment at the same elevation and location as it was originally placed.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*\* END OF SECTION \*\*\***

## SECTION 01070

### WATER QUALITY PROTECTION

#### PART 1 - GENERAL

##### ***1.01 REQUIREMENTS***

- A. The Contractor shall maintain all portions of the jobsite in a safe, neat, clean and sanitary condition at all times.
- B. The Contractor shall not impair the operations of existing utilities (including storm drains and channels).
- C. The Contractor shall implement controls to prevent the discharge of sediment and pollutants from various sources to waterways.

##### ***1.02 RELATED WORK SPECIFIED ELSEWHERE***

- A. Section 01060 REGULATORY REQUIREMENTS AND PERMITS
- B. Section 01560 TEMPORARY CONTROLS
- C. Section 02200 EARTHWORK

##### ***1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS***

- A. Field Management Practices for Water Quality Protection – Sewer and Utility Improvement Projects (CCCSD).
- B. California State Water Resources Control Board (SWRCB) and California Regional Water Quality Control Board – San Francisco Bay Region (RWQCB).

#### PART 2 - PRODUCTS

##### ***2.01 EROSION CONTROL***

- A. Stabilizing Materials
  - 1. Vegetable fibers (straw, hay)
  - 2. Wood bark chips
  - 3. Hydraulic mulches made from wood or recycled fiber
  - 4. Bonded fiber matrices
  - 5. Geotextile blankets (combinations of straw and/or coconut fiber in 6'x50' rolls)

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. Work shall meet or exceed the requirements of these Specifications unless applicable requirements of an agency having jurisdiction (including the terms and conditions of an encroachment permit issued by a city or county) are greater, in which case the greater requirements shall govern.
- B. Due to the ability of natural ground cover to filter sediment and pollutants and regulate the volume of runoff from land surfaces to adjacent storm drains and/or streams, land disturbance should be minimized to the extent practical.
- C. The Contractor shall follow all applicable federal, state, and local regulations for disposing of contaminated storm water, groundwater and contaminated soils resulting from or discovered during excavation.

### **3.02 DRILLING (TUNNELING) OPERATIONS**

- A. Regardless of whether construction activity occurs in wet or dry weather, the Contractor shall implement controls for the large quantities of water encountered in dewatering and used in microtunneling operations to reduce sediment and associated pollutants transported by splash, wind and vehicle tracking.
- B. Slurry from drilling and microtunneling operations which contain additives (such as Bentonite or Polymer solution) is unsuitable for discharge from the site. The wastewater shall be treated through a liquid/solid separation process and the clarified effluent recycled back to the microtunneling operation.
- C. All excess slurry liquid from the microtunneling liquid/solid separation process tank shall be discharged into a three (3)-compartment Baker Tank prior to offhauling by a tank truck for proper disposal. An overflow line from the separation process tank and from the Baker Tank shall be piped to the jacking pit to prevent overflow to the ground surface. Dewatered solids may be required to be managed as regulated waste and hauled to a designated disposal site.

### **3.03 STOCKPILING EXCAVATED MATERIALS**

- A. Regardless of wet or dry weather season, stockpiles of excavated materials shall be contained in bermed areas and covered with tarps or erosion control blankets to prevent wind or splash erosion and/or runoff.
- B. Soils which are not contaminated shall be contained with a berm of sand/gravel bags, silt fencing or staked-in fiber roll(s) provided that they are placed a minimum of two (2) feet from the base of the stockpiled materials.
- C. The Contractor shall immediately cease any and all work at the location upon the discovery of contaminated soil or materials.

- D. Stockpiled soils shall be protected from rain infiltration, erosion and runoff. Contaminated soils shall be contained to prevent contact with runoff by placing the pile in a debris box or on top of plastic and covering it with roofing, tarps or erosion control blankets.
- E. If flows come in contact with contaminated soils, that water shall be considered as a regulated waste and managed as such. In such cases, the Contractor shall provide for disposal in a manner acceptable to the San Francisco Bay RWQCB.

### **3.04 DEWATERING**

- A. Dewatering operations shall be managed to prevent injury to the public health and private property. The Contractor shall dewater the trench and provide a dry construction site. Discharge of any material with the potential to degrade water quality or adversely impact or threaten fish or wildlife is prohibited. In general, only clear, uncontaminated water may be discharged from a project to a storm drain, waterway or sanitary sewer.
- B. Discharging sediment-laden water from a dewatering site into any storm drain, waterway or sanitary sewer without proper settling and/or filtration is prohibited. As such, proper dewatering procedures as specified in Section 02200 EARTHWORK – 3.04 DEWATERING shall be used before construction begins.
- C. For fine particles such as clay colloidal suspensions, a more aggressive dewatering strategy including secondary filtration shall be necessary.
- D. If work is conducted within an area of known groundwater contamination or if contamination is found, water from dewatering operations shall be tested prior to discharge. If the water quality meets RWQCB standards and is approved by Engineer, it may be discharged to a storm drain or creek. If not, the water shall be hauled off site for proper disposal.
- E. Dewatering facilities shall be inspected by the Contractor daily during operation and maintained, repaired or replaced once sediment build-up decreases their efficiency. The Contractor shall remove sediment and pollutants from dewatering flows prior to discharge into storm drains or drainage channels. If the dewatering water becomes polluted, the water shall not be discharged to storm drains or streams.

### **3.05 RESTABILIZATION**

- A. The Contractor shall cover exposed soils with temporary pavement, final pavement, gravel, topsoil or hydromulch/seed as soon as backfilling is complete to prevent erosion. Backfill shall be furnished and installed in conformance with the requirements set forth in Section 02200 EARTHWORK.

- B. Disturbed soils shall be stabilized by repaving. A temporary pavement, known as a “cut-back”, shall be placed over exposed soils to allow traffic to resume. Cutback is made from asphalt which remains pliable in most situations but may leach oil when in contact with water. The use of cut-back shall be minimized during the rainy season. Cut-back pavement shall be replaced by final pavement to match existing pavement sections as soon as possible.
- C. Disturbed soils shall be stabilized using one of the following controls unless specified otherwise: hydroseeding, erosion control blankets, or mulch (straw/wood chips/bark). Disturbed areas shall be completely covered.

### **3.06 EROSION CONTROL**

- A. Disturbed soils shall be temporarily or permanently stabilized and protected against erosion as necessary dependent on slope steepness, accessibility, weather conditions and desired longevity as follows, unless otherwise specified. Erosion control materials shall be installed in conformance with the requirement set forth in Section 02200 EARTHWORK and in the following manner:
  - 1. Apply seed and fertilizer to the bare soil (optional)
  - 2. Apply loose hay or straw (preferred) over the top of the seed at a rate of 2 tons/ac either by machine or by hand distribution until soil is completely covered
  - 3. Anchor the mulch in place by using a tackifier (100 to 300 lbs/acre) such as garden sprayed glue, netting, or crimp it into the soil mechanically (Note: Crimping requires wet soils).

### **3.07 EROSION CONTROL BLANKETS AND GEOTEXTILES**

- A. Blankets are recommended to protect slopes steeper than 2:1, disturbed areas in sensitive areas (such as streams, wetlands), and in channels with flow velocities no greater than 2 ft/s.
- B. Blankets shall be installed according to manufacturer’s recommendations, generally as follows:
  - 1. Begin at the top of the slope and anchor the blanket in a six (6) inch deep by six (6) inch wide trench.
  - 2. Backfill trench and tamp earth firmly.
  - 3. Unroll blanket downslope in the direction of water flow, not horizontally.
  - 4. Lay blankets loosely to maintain direct contact with the soil. Do not stretch.
  - 5. If more than one blanket is required, overlap the edges of adjacent parallel rolls 2 in to 3 in and staple every 3 ft.
  - 6. Staple blankets as specified.



- C. The Contractor shall inspect blankets after installation and before and during significant rain events. Failures shall be repaired immediately. If washout, mat undermining or breakages occur, the Contractor shall determine the source of failures, correct it and repair damage to the slope or channel (rills, gullies etc.) before re-installing and re-anchoring blankets.
- D. Plastic sheeting does not decrease runoff and, as such, shall be limited to covering stock piles or very small graded areas as a temporary measure and for only short periods of time. Plastic sheeting shall be disposed of at a landfill.

### **3.08 INLET PROTECTION AND ENERGY DISSIPATION**

- A. To maintain the function of the storm drain, storm drain inlet grates shall not be covered with filter fabric or with solid barriers, such as metal inlet covers. Storm drains shall be protected using temporary sediment control and energy dissipation practices, as allowed by local encroachment permit requirements, constructed along the flow path and around storm drains to improve the quality of water being discharged to inlets or catch basins. Inlet protection and energy dissipation devices shall be removed when no longer required. The Contractor shall be cautious when utilizing any device which may result in a public hazard.
- B. To be effective, controls shall slow water, pond sediment-laden runoff, and increase settling time. Ponding shall not encroach into highway traffic or onto eroded surfaces and/or slopes.
- C. If high flow conditions are expected, the Contractor shall stabilize slopes and treat disturbed areas with erosion controls (such as geotextile blankets, fiber rolls, mulch), in addition to providing inlet protection.
- D. The Contractor shall provide frequent maintenance of inlet protection devices to minimize short-circuiting and to remove silt deposits and buildup. Sediment shall be collected and usually can be disposed of on site. Excess sediment, which could become re-suspended in a rain event, shall be removed immediately and disposed of off site.

### **3.09 INLET PROTECTION – SAND / GRAVEL BAG BARRIERS**

- A. Gravel bag barriers are applicable when heavy rains are expected, when construction is conducted in wet weather, and when the drain inlet is the lowest point for discharge.
- B. For drainage areas larger than one (1) acre, runoff shall be routed to a sediment trapping device designed for larger flows.
- C. Inlet protection shall be used only when ponding will not encroach into traffic lanes or onto erodible surfaces or slopes. The Contractor shall use traffic barricades to maintain the integrity of inlet protection.

- D. Frequent Contractor maintenance shall be provided to remove silt deposits and buildup and to minimize short-circuiting and overtopping.

### **3.10 *SEDIMENT CONTROL / ENERGY DISSIPATION***

- A. Controls to divert flow, slow flow velocity, and pond and filter runoff shall be implemented in flow areas.
- B. Every attempt should be made to stabilize disturbed soils at the source. If sediment or polluted water is making its way into the drain inlet, the Contractor shall locate the source and contain it using appropriate controls.
- C. A check dam constructed of sand or gravel bags will slow flow velocity, pond water and allow sediment to settle. Check dams are appropriate in small open channels draining ten (10) acres or less.
- D. The Contractor shall maintain check dams by removing trapped sediment to prevent its re-suspension in subsequent storms. The Contractor shall inspect check dams after significant rain events and replace loosed materials (rocks, gravel bags) as necessary.

### **3.11 *FIBER ROLL DIKES***

- A. Fiber rolls shall be entrenched and anchored according to the following installation specifications:
  - 1. Fiber rolls may be used for small areas or short slopes (3:1 or flatter) with low surface flows not to exceed one (1) cfs:
    - a. Along the face of exposed and erodible slopes to shorten slope length.
    - b. At grade breaks where slopes transition to a steeper slope.
    - c. In drainage swales to slow flows.
    - d. Along stream banks to assist stabilization and re-vegetation (wattles favorable for plant establishment).
    - e. Behind sidewalks or curbs.
- B. Contractor shall inspect and maintain fiber rolls to maintain performance. Split, torn, unraveling or slumping rolls shall be repaired or replaced as necessary.

### **3.12 *SILT FENCING***

- A. Silt fencing may be used along the perimeter of the site, along (not across) streams and channels, and around temporary stockpiles. Silt fence material shall be entrenched a minimum of four (4) inch to six (6) inch. The Contractor shall not anchor silt fencing without first entrenching it.

- B. Use of a silt fence shall be limited to locations suitable for temporary ponding or deposition of sediment. Silt fences shall not be used to divert flow and shall be placed along the contour.
- C. Silt fencing shall be routinely inspected by the Contractor, and all undercutting, split, torn or slumping material immediately repaired. The Contractor shall remove silt fencing when no longer necessary for sediment control.

### **3.13 STABILIZED CONSTRUCTION ENTRANCE**

- A. At an unpaved site (for example: an unpaved microtunneling or pump station site or contractor staging area), the point of ingress/egress shall be stabilized to minimize the tracking of mud and dirt onto public roads by construction vehicles according to the following specifications:
  - 1. Design the entrance to support the heaviest vehicles which will use it.
  - 2. Grade the entrance to prevent runoff from the construction site.
  - 3. The rock egress pad shall be twenty (20) feet wide x forty (40) feet long x eight (8) feet deep consisting of six (6) inch to eight (8) inch diameter fractured stone aggregate placed over a geotextile fabric.
  - 4. Mud grates and/or a tire wash shall be used at the intersection of paved roadways and access roads for construction sites adjacent to creek areas.
  - 5. The Contractor shall require that all employees, subcontractors, and suppliers utilize the stabilized construction entrance.
  - 6. The Contractor shall inspect for damage and remove and replace aggregate of egress pad, as necessary, and repair the structure when needed.

### **3.14 STORAGE / MAINTENANCE YARD AND DISPOSAL SITES**

- A. If the Contractor enters into separate agreements with property owners for use of parcels for a Contractor's yard for any of the purposes listed below – those sites will not be under the control of Rodeo Sanitary District. However, the Contractor shall confirm that there are no adverse environmental impacts related to use of parcels where Rodeo Sanitary District has no control.
  - 1. Defined as any area to be used for:
    - a. Loading or unloading
    - b. Materials storage
    - c. Vehicle and equipment maintenance
    - d. Concrete truck washout
    - e. Temporary storage of excess materials or debris
    - f. Storage or disposal of spoil materials (such as excess construction material and excavated material not suitable for use as backfill material).

- B. In cases in which the Contractor enters into agreement with a property owner, the Contractor shall submit a separate Notice of Intent (NOI) to comply with the National Pollutant Discharge Elimination System General Permit to the SWRCB.
- C. In compliance with the General Permit, the Contractor shall prepare a separate Storm Water Pollution Prevention Plan (SWPPP) for the disposal site in accordance with the requirements of the California State Water Resources Control Board and local agency ordinance, unless the site has a separate SWPPP or a separate discharge permit from the SWRCB. The SWPPP shall be signed by both the Contractor and the property owner. A copy of the Contractor's SWPPP shall be submitted to Rodeo Sanitary District prior to any activities in the site. If the Contractor's SWPPP is revised during work progress, all revisions shall be submitted to Rodeo Sanitary District.
- D. Permit application fees and costs incurred in preparing and/or amending the SWPPP developed for the site shall be at the expense of the Contractor.

### **3.15 SOLID AND DEMOLITION WASTE MANAGEMENT**

- A. Upon approval of Inspector, only clean, uncontaminated water may be discharged to the storm drain, waterway, or sanitary sewer. Non-hazardous, solid demolition wastes shall be managed according to the following specifications:
  - 1. Waste collection areas shall be located away from streets, gutters, and storm drains.
  - 2. Dumpsters shall be secured at night and during rain events.
  - 3. Leaky dumpsters shall be replaced and returned for cleaning as necessary.
  - 4. Arrangements for disposal shall be made to ensure dumpsters do not overflow.
- B. Examples of Non-Hazardous Materials:
  - 1. Drilling fluid additives
  - 2. Wood, framing, etc.
  - 3. Concrete, brick, cement mortar
  - 4. Asphalt
  - 5. Cleared vegetation, tree trimmings, plant material
  - 6. Dry paint/non-hazardous paint chips/dust from stripping and sand blasting of non-hazardous paint
  - 7. Absorbent material (rags, mats) used to absorb non-hazardous spills (materials used to absorb oil-based spills shall be disposed of as hazardous waste)
  - 8. Steel and metal scraps

9. Pipe, conduit and wire cuttings
10. Ground and/or broken paving materials
11. Domestic solid wastes (containers, cans, cups, etc.)

### **3.16 HAZARDOUS WASTE AND MATERIALS MANAGEMENT**

- A. The Contractor shall manage hazardous wastes and materials according to the following specifications:
  1. Chemical and/or hazardous materials storage and handling areas shall be located away from watercourses and storm drains.
  2. Secondary containment shall have capacity to contain twice the contents of the largest container, and large enough to capture any accidental releases.
  3. Leaks or spills shall be cleaned up immediately, including within the secondary diked area.
  4. Contractor shall ensure that trailers carrying hazardous materials are covered during transit (Illegal transit of hazardous waste is a violation subject to fine and/or jail time).
  5. Hazardous waste shall be disposed of only at authorized treatment, storage, and disposal facilities (Illegal dumping of hazardous waste is a violation subject to fine and/or jail time).
  6. Contractor shall use only a licensed company to transport and dispose of contaminated materials.
- B. If storm water runoff enters the storage area or otherwise comes in contact with construction material, the Contractor shall determine if the storm water has become contaminated. Only clean, uncontaminated rain water shall be discharged to a storm drain, waterway, or the sanitary sewer.
- C. If the storm water runoff has come in contact with the construction materials, the Contractor shall provide an appropriate collection system for disposal of the storm water runoff in a manner acceptable to the RWQCB. The Contractor shall use only a licensed hazardous waste handling company to clean up large spills.
- D. Major contamination, large spills, and other serious hazardous waste incidents will require initial containment and immediate response from specialists. Spills of any material (e.g. sediment-laden wastewater) hazardous or not, shall be reported immediately. Contractor shall notify the Inspector, the Office of Emergency Service (OES) at 800-852-7550, the RWQCB at 510-622-2300, and the County Health Department when a hazardous spill occurs. If there is indecision as to whether water quality will be impacted, the Contractor shall contact the RWQCB to discuss the situation. If long-term remedial action is necessary, the RWQCB may issue enforcement orders to assure proper cleanup. Failure to report a spill resulting in discharge to a storm drain or waterway will result in greatly increased cleanup costs and enforcement action by the RWQCB.

- E. Example of Hazardous Waste Materials:
1. Drilling fluid additives
  2. Petroleum products, such as oil, fuel, and grease
  3. Asphalt products
  4. Concrete curing compounds
  5. Herbicides and pesticides
  6. Chemical additives
  7. Septic wastes
  8. Paints, thinners, and solvents
  9. Materials used to absorb hazardous spills
  10. Acids, lime, glues, and curing compounds
  11. Any other material considered a hazardous waste by the State of California
- F. The following pre-existing site conditions may make contamination likely:
1. Areas of previous commercial or industrial activity.
  2. Sites with a history of illegal dumping on the site or on adjacent properties.
  3. Sites subject to Superfund, state or local cleanup order.
  4. Pounded storm water, groundwater, or dewatering areas, which exhibit an oily sheen or smell of petroleum.
  5. Soils which appear discolored, smell of petroleum, or exhibit other unusual properties.
  6. Sites where abandoned storage tanks, drums, or other buried debris are encountered during construction activity.

### ***3.17 PAVEMENT MANAGEMENT***

- A. Concrete, asphalt, and seal coat shall be applied during dry, appropriately temperatured weather to prevent contaminants from coming in contact with storm water runoff. Storm drain inlets, catch basins, and manholes shall be covered while applying seal coat, tack seal, slurry seal, fog seal or similar materials. Paving machines shall consistently be placed over drip pans or absorbent materials since they tend to drip continuously.
- B. Unless approved by the Inspector, during wet weather or when rain is forecast within twenty-four (24) hours, the Contractor shall not pave or oil the street. If rain occurs during paving, the Contractor shall arrange for a container to be delivered to the site to intercept rain water.
- C. The Contractor shall not sweep or wash down excess sand (placed as part of a sand seal or to absorb excess oil) into gutters, storm drains, or creeks. The Contractor

shall either; collect the sand and return it to the stockpile or dispose of it in a trash container.

- D. The Contractor shall prevent saw cut slurry from entering catch basins and storm drains. The slurry should be removed using a wet vacuum. The area over which the slurry may spread should also be limited.
- E. When making saw cuts, Contractor shall not allow saw-cutting water to enter a storm drain, waterway, or sanitary sewer under any conditions. Water use should be as little as possible.
- F. Contractor shall protect the drain inlet by covering it completely with filter fabric and containing the slurry by placing barriers around the catch basin (bag/gravel bag dams). The Contractor shall also shovel, absorb, or vacuum the slurry residue from pavement or gutter as necessary and remove from site at the end of the day/job.

### **3.18 CONCRETE MANAGEMENT**

- A. The Contractor shall perform concrete washout in a designated area where the water will flow into a temporary pit or bermed area in the dirt area from where it can be pumped or disposed of by a hazardous waste disposal program. The water may not be discharged to storm drain, waterway, or sanitary sewer.
- B. The Contractor's concrete wash water pit shall be located away from watercourses and storm drains and shall be sized large enough to hold the maximum volume of waste expected. The Contractor shall drain wash water of exposed aggregate concrete to a dirt area or onto stockpiles of aggregate base or sand. Water shall be allowed to percolate into the soil and hardened concrete disposed of in a trash container. If a suitable dirt area is not available, the Contractor shall collect the waste water into a steel, leakproof debris box.

### **3.19 VEHICLE AND EQUIPMENT SERVICES**

- A. The Contractor shall use secondary containment, such as a drip pan, to catch leaks or spills any time that vehicle or equipment fluids are dispensed, changed, or poured, and shall clean up leaks and spills of vehicle or equipment fluids immediately and dispose of the waste and cleanup materials as a hazardous waste.
- B. The Contractor shall inspect vehicles and equipment arriving on site for leaking fluids and shall promptly repair leaking vehicles and equipment. Drip pans shall be used to catch leaks until repairs are made. The Contractor shall perform maintenance and fueling of vehicles or equipment in areas that will not allow runoff of storm water or runoff of spills to storm drains and provide for confined clean-up. The Contractor shall not contaminate the soils or groundwater with such maintenance and fueling activities. The Contractor shall encourage fueling and major maintenance/repair and washing off site whenever possible.

- C. Water from equipment washing shall not be allowed to be discharged to a storm drain, waterway, or the sanitary sewer. The Contractor shall perform vehicle or equipment cleaning with water only in a designated, bermed area that will not allow rinse water to run off site into streets, gutters, storm drains, or creeks. Soaps, solvents, degreasers, steam-cleaning equipment, or equivalent methods will not be allowed. Sumps associated with the wash areas shall be serviced regularly.

### **3.20 SECONDARY CONTAINMENT**

- A. Wet and dry building materials with the potential to pollute runoff shall be handled and delivered with care and stored under cover and/or surrounded by berms to prevent contact with runoff.
- B. The Contractor shall also include containment areas and provide for proper disposal of these materials, their containers, and materials or soil that may be contaminated with these materials.
- C. Perimeter controls, containment structures, and covers shall be repaired as necessary to ensure their proper functioning.
- D. The Contractor shall maintain the site in a neat and clean and well organized condition.
- E. Potential pollutants include:
  - 1. Pesticides and herbicides
  - 2. Fertilizers
  - 3. Detergents
  - 4. Asphalt and concrete compounds
  - 5. Petroleum products, such as fuel, oil, and grease
  - 6. Acids, lime glues, adhesives, curing compounds, etc.
  - 7. Paints and solvents
- F. All hazardous materials shall be labeled and stored according to local, state, and federal regulations and according to fire code requirements. The Contractor shall keep an inventory of hazardous material for use in emergency and shall post proper storage instructions at all times in an open and conspicuous location. The Contractor shall use mats during transport and storage and shall not apply hazardous chemicals outdoors during wet weather.
- G. The Contractor shall immediately clean up all spills, including but not limited to: Slurry from boring operations, excess concrete and grout, coatings, controlled low-strength material, concrete curing compounds, lubricants and paint.



### **3.21 PAINT MANAGEMENT**

- A. Only clean rain water shall be discharged to storm drains and/or waterways. The Contractor shall remove as much excess paint as possible from brushes, rollers, and equipment before starting cleanup. The Contractor may discharge very small amounts of cleaning wastes from brushes, rollers, buckets, and tools contaminated with latex (water-based) paints to the sanitary sewer system provided they do not contain certain additives which are pollutants of concern (mercury, tributyltin). Brushes, rollers, and tools containing latex paints may be washed over a sink with plenty of water. Buckets containing latex paints shall first be emptied into the original can or discarded as above.
- B. For water based paints, paint out brushes to the maximum extent possible and rinse to a drain leading to the sanitary sewer (indoor plumbing). Where not possible, clean with water, disperse wash water over soil, and spade in.
- C. For oil-based paints, paint out brushes to the extent possible; filter and reuse thinner/solvents.
- D. Dried latex paint, old brushes, rollers etc. shall be disposed of as non-hazardous waste. The Contractor shall dispose of thinner, solvent, sludge from cleaning equipment and tools, and excess oil and water-based paint as a hazardous waste. Hazardous materials that are not recyclable shall be disposed of by a licensed hazardous waste hauler.
- E. Hazardous and non-hazardous paint-related materials, paint wastes, adhesives and cleaning fluids shall be recycled when possible and disposed of properly to prevent contact with stormwater and discharge into storm drains / watercourses. Contractor shall designate an area for cleaning of painting equipment and tools. Contractor shall ensure that clean brushes or rinse containers are not washed into street gutters, storm drains or waterways.

**\*\*\* END OF SECTION \*\*\***

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## SECTION 01090

### REFERENCES

#### PART 1 - GENERAL

##### ***1.01 CODES AND STANDARDS***

Whenever reference is made to a code or standard, it means the latest edition in effect the date that the Contract Documents are dated. Where codes, standards and reference documents are referred to in the Contract Documents, the Contractor may submit a written request to the Construction Manager for assistance in locating such documents. Within three days of receipt of such request, the Construction Manager will notify the Contractor as to where the document(s) can be reviewed.

No provision of any such standard, specifications, manual, code or instruction shall be effective to change the duties and responsibilities of the District, District's representative, or any of their consultants, agents, or employees from those set forth in the Contract Documents. Nor shall any of the aforementioned be effective to assign to the District or the District's representative, or any of their consultants, agents, or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

##### ***1.02 DEFINITIONS OF WORDS AND TERMS***

Where used in the Contract Documents, the following words and terms shall have the meanings indicated. The meanings shall be applicable to the singular, plural, masculine and feminine of the words and terms.

- A. Acceptance - Formal action of the District in determining that the Contractor's work has been completed in accordance with the Contract and in notifying the contractor in writing of the acceptability of the work.
- B. Acts of God - "Acts of God" shall include only the following occurrences or conditions and effects: earthquakes in excess of a magnitude of 3.5 on the Richter Scale and tidal waves.
- C. Addenda - Supplemental written specifications or drawings issued prior to bid submittal which modify or interpret these Contract Documents by addition, deletion, clarification, or corrections.
- D. Agreement - The written document covering the performance of the Work as more fully described in Section 00500 AGREEMENT FOR CONSTRUCTION.

- E. Bid - Offer of a bidder submitted on the prescribed form setting forth prices of the Work to be performed.
- F. Bidder - Individual, partnership, corporation, or a combination thereof, including joint venturers offering a bid to perform the Work.
- G. Clarification Letter - A Clarification Letter is issued by the Construction Manager to address the clarification of Contract issues raised by the Construction Manager, Design Consultant or District.
- H. Completion - The word completion shall indicate Substantial Completion.
- I. Construction Manager - The person designated, in writing, by the District to act as its representative at the construction site and to perform construction inspection services and administrative functions relating to this Contract. Initial contact by the Contractor with the District shall be through the Construction Manager.
- J. Contract - The word "Contract" means this Contract, as set forth in the Agreement and the Contract Documents.
- K. Contract Change Order - A written order to the Contractor, covering changes in the plans or quantities, or both, and establishing the basis of payment and time adjustments for the work affected by the changes. Also referred to as a Change Order.
- L. Contract Documents - The words "Contract Documents" shall mean any or all of the following items, as applicable:
  - 1. Notice Inviting Bids
  - 2. Instructions to Bidders
  - 3. Bid Form and Bid Schedule
  - 4. Designation of Subcontractors
  - 5. Bid Guaranty Bond
  - 6. Agreement
  - 7. Performance Bond
  - 8. Payment Bond
  - 9. Insurance Endorsements
  - 10. Project Site Visit Affidavit
  - 11. Non-Collusion Affidavit
  - 12. General Conditions
  - 13. Supplementary General Conditions
  - 14. General Requirements

15. Specifications
16. Drawings
17. Addenda, if any
18. Executed Change Orders, if any
19. Field Orders
20. Notice to Proceed
21. Permits

Each of these items is to be considered by reference as part of the Contract Documents, also referred to as Contract.

- M. Contract Price (also referred to as Contract Amount) - The amount payable to the Contractor under the terms and conditions of the Contract based on the price given on the bidding schedule, with adjustments made in accordance with the Contract. The Total Base Amount given in the Bid Schedule (Section 00310) shall be either a lump sum bid or the summation of the unit price bids multiplied by the estimated quantities set forth in the bid form.
- N. Contract Time - Number of calendar days stated in the Contract for the completion of the Work.
- O. Contractor - The individual partnership, corporation, or combination thereof including joint venturers who enter into the Contract with the District for the performance of the Work. The term appropriately extends to subcontractors, subtier subcontractors, consultants, equipment and material suppliers and their employees which are utilized by the Contractor.
- P. Contractor's Plant and Equipment - Equipment, material, supplies, and all other items, except labor, brought onto the site by the Contractor to carry out the work, but not to be incorporated in the work.
- Q. Corrective Work Item List - List of incomplete items of work, incomplete administrative requirements and items of work which are not in conformance with the Contract, prepared by the Construction Manager and issued to the Contractor as an attachment to the response to the Contractor's notification of Substantial Completion.
- R. Days - The word "Days" shall mean calendar days, including legal holidays, Saturdays and Sundays, unless specifically noted otherwise.
- S. Design Consultant - The engineer or architect designated by the District to have design control over the Work or a specified portion of the Work, acting either directly or through duly authorized representatives. Such representatives shall act within the scope of the particular duties delegated to them. The Design Consultant may also furnish inspection services as provided by the Contract.

- T. Direct - Action of the District or Construction Manager by which the Contractor is ordered to perform or refrain from performing work under the Contract.
- U. District - The word "District" refers to the Rodeo Sanitary District, the governing body of which is termed the Board.
- V. District Representative - The person designated in writing by the District to act as its agent on specified matters relating to this Contract. The District's Representative is not the Construction Manager, but an employee or Consultant of the District who has been designated to represent the District.
- W. Drawings - Also referred to as "Plans". That part of the Contract Documents consisting of the graphical and technical requirements of the Contract as included on the plan sheets.
- X. Engineer - Engineer shall refer to either the Construction Manager or Design Consultant based on their roles as defined in Section 00700 GENERAL CONDITIONS, and their separate contracts with the District.
- Y. Favorable Review - "Favorable Review" means that the person or entity acting on behalf of the District has reviewed a proposal or submittal and found it acceptable as to the aspects for which review was sought. "Favorable Review" does not imply any approval of deviations from the Contract Documents which can only be made by formal Field Directive, Field Order or Contract Change Order.
- Z. Field Directive - Written documentation of the actions of the District or Construction Manager in directing the Contractor. Also referred to as a Directive.
- AA. Field Order - A written instruction given to the Contractor authorizing work that is a change to the scope of work carried out on a time and material basis.
- BB. Final Inspection List - List of materials, equipment, workmanship, or administrative requirements, which are not in conformance with the Contract. The list shall be prepared by the Construction Manager and submitted to the Contractor following the Contractor's notice of completion of the Work, including all items on the Punch List.
- CC. Float - Float or "total float" shall be defined as provided in the Associated General Contractors of America "CPM in Construction, A Manual for General Contractors".
- DD. Furnish - To deliver to the job site or other specified location any item, equipment or material.
- EE. General Conditions - Sections 00700, GENERAL CONDITIONS, and 00800, SUPPLEMENTARY GENERAL CONDITIONS, which form the part of the Contract Documents representing the general clauses that establish how the project is to be administered.

- FF. General Requirements - Division 1, GENERAL REQUIREMENTS, which forms the part of the Contract Documents establishing special conditions or requirements peculiar to the work and supplementary to the General Conditions.
- GG. Herein - Refers to information presented in these Contract Documents.
- HH. Holidays - Legal holidays shall include the following holidays designated by the District: New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, the day after Thanksgiving, Christmas Eve and Christmas Day, New Years Eve.
- II. Install - Placing, erecting, or constructing complete in place any item, equipment, or material.
- JJ. Notice to Proceed - Notice to Proceed shall mean the written notice issued by District to Contractor authorizing him to proceed with the work and establishing the date of commencement of the Contract Time. Notice to Proceed may or may not include separate dates establishing the date of commencement of the submittal process.
- KK. Owner - The word "Owner" shall have the same meaning as the term "District."
- LL. Paragraph - For reference or citation purposes, a paragraph shall refer to the paragraph, or paragraphs, called out by paragraph number and alphanumeric designator.
- MM. Person - The term, person, includes firms, companies, corporations, partnerships, and joint ventures.
- NN. Plans - See "Drawings."
- OO. Project - The undertaking to be performed under the provisions of the Contract.
- PP. Provide - Furnish and install, complete in place.
- QQ. Punch List - List of incomplete items of work, incomplete administrative requirements and items of work which are not in conformance with the Contract, prepared by the Construction Manager and issued to the Contractor as an attachment to the Certificate of Substantial Completion.
- RR. Request for Information - Also referred to as "Request for Clarification." A Request for Information (RFI) is issued by the Contractor to the Construction Manager to request resolution of a question on a Contract issue. A RFI is not to be used for request for material/equipment substitutions or value engineering/cost reduction incentive proposals.

- SS. Request for Quotation - A request for a proposed cost made of the Contractor by the Owner to add, delete or change the Work. A Contract Change Order is issued upon Agreement of Price and nature of the change of the Work.
- TT. Shall - The use of “shall” or “will” means that the Contractor or District, as appropriate, is contractually or legally obligated to take the required action, unless another meaning is clearly indicated.
- UU. Shown - Refers to information presented on the drawings, with or without reference to the drawings.
- VV. Specifications - That part of the Contract Documents consisting of written descriptions of the technical features of materials, equipment, constructions systems, standards, and workmanship.
- WW. Specify - Refers to information described, shown, noted or presented in any manner in any part of the Contract.
- XX. State of California Specifications - The State of California Department of Transportation Standard Specifications in effect at the time of advertising the Work. Also referred to as State Standard Specifications and Caltrans Standard Specifications.
- YY. Subcontractor - A subcontractor is a person or entity who has a direct contract with the Contractor or a subtier subcontractor who has a direct contract with a subcontractor to perform any of the Work associated with the Project The term subcontractor, does not include any separate contractor or any separate contractor's subcontractors.
- ZZ. Submittals - The information which is specified for submission to the Construction Manager in accordance with these Contract Documents.
- AAA. Substantial Completion - “Substantial Completion” means that there is sufficient completion of the Project or an agreed to portion thereof that the District can effectively utilize. Determination of substantial completion is solely at the discretion of the District. Substantial Completion does not mean Complete in accordance with the Contract nor shall Substantial Completion of all or any part of the Project entitle the Contractor to Acceptance under the Contract.
- BBB. Substantial Completion Date - Date when the District puts into service, the Project, or that portion of the Project, which the District has been determined to be Substantially Complete.
- CCC. Sub-subcontractor - A sub-subcontractor is a person or entity who has a direct or indirect contract with a subcontractor to perform any of the Work at the Site. The term subsubcontractor means a sub-subcontractor or an authorized representative thereof, also referred to as subtier-subcontractor.



- DDD. Supplier - Any person, firm, corporation, or organization who supplies materials or equipment for the Work, including that fabricated to a special design, and may also be a Subcontractor or a Sub-contractor.
- EEE. Surety - The person, firm, corporation, or organization that joins with the Contractor in assuming the liability for the faithful performance of the Work and for the payment of all obligations pertaining to the Work in accordance with the Contract Documents by issuing the Bonds required by the Contract Documents or by law.
- FFF. Total Base Bid - The original Contract Price as established from Section 00310 BID SCHEDULE as completed by the Contractor as a part of his Bid for the work.
- GGG. Warranty Period - Period where the Contractor is responsible for repairs to equipment or the Work at no cost to the District after Substantial Completion. Length of period is as established in Section 01740 WARRANTIES AND BONDS, and/or elsewhere in the Contract Documents.
- HHH. Will - See definition of shall.
- III. Work - The term “Work” means all labor, materials, equipment, supplies, services, and other items necessary for the execution, completion and fulfillment of the Contract.
- JJJ. Work Day - Any day except Saturday, Sunday, and legal holidays. For time extension purposes a work day is equivalent to 1.45 calendar days.

### **1.03 ABBREVIATIONS**

Whenever the following terms are used, the intent and meaning shall be as follows:

Abbreviation    Stands For

AASHTO	American Association of State and Highway and Transportation Officials
AAMA	Architectural Aluminum Manufacturers Association
ABMA	American Boiler Manufacturers Association
ACI	American Concrete Institute
ADC	Air Diffusion Council
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AMCA	Air Moving and Conditioning Association
ANSI	American National Standard Institute (formerly United States of America Standards Institute)
APA	American Plywood Association
API	American Petroleum Institute
AREA	American Railway Engineers Association

ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Construction Managers
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing and Materials
AWPA	American Wood-Preserver's Association
AWS	American Welding Society
AWWA	American Water Works Association
CAGI	Compressed Air and Gas Institute CAL/OSHA State of California Department of Industrial Relations, Division of Industrial Safety
CBM	Certified Ballast Manufacturers
CBR	California Bearing Ratio
CI	Chlorine Institute
CISPI	Cast Iron Soil Pipe Institute
CMAA	Crane Manufacturers Association of America
CPSC	Consumer Products Safety Commission
CRA	California Redwood Association
CRSI	Concrete Reinforcing Steel Institute
CTI	Cooling Tower Institute
DFPA	Douglas Fir Plywood Association
EIA	Electronic Industries Association
EPA	U.S. Environmental Protection Agency
ETL	Electronic Testing Laboratory
FM	Factory Mutual Insurance Company
FPS	Fluid Power Society
FS	Federal Specifications
GO 95	General Order No. 95, California Public Utilities Commission Rules for Overhead Electric Line Construction
HI	Hydraulic Institute
HMI	Hoist Manufacturers Institute
IAPMO	International Association of Plumbing and Mechanical Officials
IBR	Institute of Boiler and Radiator Manufacturers
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IPCE	International Power Cable Engineers Association
ISA	Instrument Society of America
MIL	Military Specifications
MSS	Manufacturer's Standardization Society
NAAMM	National Association of Architectural Metal Manufacturers
NBS	National Bureau of Standards
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NSF	National Sanitation Foundation
NWMA	National Woodwork Manufacturers Association

OSHA	Occupational Safety and Health Act
PCMAC	Prestressed Concrete Manufacturers Association of California
RSD	Rodeo Sanitary District
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Structural Steel Painting Council TCA Tile Council of America
UBC	Uniform Building Code
UFC	Uniform Fire Code
UPC	Uniform Plumbing Code
UL	Underwriters Laboratories
WCLIB	West Coast Lumber Inspection Bureau
WIC	Woodwork Institute of California
WPCP	Water Pollution Control Plant

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## SECTION 01100

### SAFETY

#### PART 1 – GENERAL

##### 1.01 REQUIREMENT

- A. The Contractor shall be responsible for and shall have the duty to ensure safety on the jobsite and all areas affected by job-related activities. The Contractor and its subcontractors shall comply with all applicable federal, state and local safety rules, regulations, requirements and orders in the performance of the work. In addition, the Contractor and its subcontractors shall comply with all requirements and procedures of this Section. The Contractor shall take any additional precautions it deems necessary to prevent injury to people (employees, subcontractors and the public) and damage to property (both public and private).
- B. The Contractor shall be responsible for informing its employees, subcontractors, and suppliers of the safety requirements on its jobsite, and shall enforce these requirements. The Contractor shall not allow employees or subcontractors to begin work on this project without a safety orientation specific to the potential hazards of the job.

##### 1.02 RELATED SECTIONS – NOT USED

##### 1.03 REFERENCES

- A. Central Contra Costa Sanitary District (CCCSD)
  - 1. Standard Specifications for Design and Construction, 2014 Edition
- B. State of California Department of Transportation: “Manual of Traffic Controls for Construction and Maintenance Work Zones” (latest edition)
- C. Cal/OSHA Construction Safety Orders
- D. California Code of Regulations General Industry Safety Orders

#### PART 2 – PRODUCTS (NOT USED)

#### PART 3 – EXECUTION

##### 3.01 GENERAL

- A. Use of alcoholic beverages and/or illegal drugs shall be strictly prohibited on the jobsite. Workers who use prescription and non-prescription drugs that may interfere with their ability to work safely shall be prohibited from the jobsite.

- B. The Contractor shall maintain all portions of the jobsite in a safe, neat, clean and sanitary condition at all times.
- C. Toilets shall be furnished by the Contractor for use of its employees, and their use shall be strictly enforced.

### 3.02 PERSONAL PROTECTIVE EQUIPMENT (PPE)

- A. The Contractor shall be responsible for providing and assuring the use of PPE including but not limited to hard hats, eye and face protection, hearing protection, respirators and foot protection.
- B. The Contractor's personnel shall wear hard hats and appropriate foot protection at all times while on the jobsite, except in offices or vehicles.
- C. Proper eye and/or face protection shall be worn whenever there is a risk of exposure to airborne particulates, liquids, or compressed gases.

### 3.03 POWER TOOLS

- A. Electric powered hand tools shall be protected by approved ground fault circuit interrupters, or shall be double insulated.
- B. Fixed electric power tools such as table saws, pipe threaders, etc. shall be properly wired and grounded.
- C. Pneumatically driven power tools shall be disconnected from air lines when not in use. Air lines shall be properly clipped together.
- D. Powder actuated tools shall be used only by licensed personnel who have a valid license in their possession.

### 3.04 TRAFFIC CONTROL

- A. The Contractor shall provide for the traffic safety of its workers, RSD personnel and the public during construction. Traffic shall be permitted to pass through the work zone safely and with minimum delay.
- B. The Contractor shall comply with the State of California Department of Transportation's "Manual of Temporary Traffic Controls for Construction and Maintenance Work Zones" (latest edition), and any applicable local agency encroachment permit requirements when work is done in streets, roadways, or similar thoroughfares subject to vehicular traffic. No work may be performed in any public right-of-way without first obtaining an encroachment permit from the agency having local jurisdiction (i.e., local traffic engineering, public works department, and/or police).

- C. When a job requires that work be done in streets or roads, the Contractor shall submit a detailed traffic safety plan for rerouting and/or restricting traffic to RSD for review and to the local agency having jurisdiction for approval before any work is started. The traffic plan shall show locations of signs, flaggers, traffic control devices and barriers relative to the working area. Flaggers shall be properly trained as required by Cal/OSHA.
- D. If the Contractor needs to employ detours, other traffic rerouting or restrictions to facilitate its work, it shall acquire a written permit from the state local agency having jurisdiction. No detours, traffic restrictions or reroutings shall be initiated prior to the Inspector's receipt of a copy of the permit and compliance by the Contractor with all permit conditions.
- E. Contractors doing work in public streets or public right-of-ways shall:
  - 1. Obtain all necessary permits.
  - 2. Provide timely notification to all affected agencies including:
    - a. Police
    - b. Fire
    - c. Public Works
    - d. Bus and Transit
    - e. Local Hospitals
    - f. Postal Service
    - g. Schools
    - h. Garbage Service
  - 3. Coordinate the work with all affected agencies.
  - 4. Provide timely notice to occupants of abutting properties and local residents of access limitations made necessary by the work.
  - 5. Install and maintain required traffic control devices.
  - 6. Provide trained and appropriately equipped flag persons when required.
  - 7. Schedule and expedite the work to cause the least inconvenience to the public.
  - 8. Provide adequate safeguards for workers, RSD personnel and the general public.

9. Assure that employees working in or adjacent to a traveled roadway wear vests or jackets of an approved color. For night work, the vests or jackets shall be affixed with approved reflecting stripes.
10. Regularly inspect the jobsite to ensure that all traffic control devices are in place and operate as intended at all times.
11. Remove traffic control devices when they are no longer needed.

### 3.05 TRENCHING/EXCAVATIONS

- A. The Contractor shall comply with the requirements of Section 02350, SHORING FOR SURFACE STRUCTURES, TRENCHES, AND OPEN CUT EXCAVATIONS, whenever any excavation or trenching work is done

### 3.06 FIRST AID

- A. The Contractor shall provide first aid and medical treatment for its employees and comply with the first aid requirements of the Cal/OSHA Construction Safety Orders.

### 3.07 FIRE PREVENTION

- A. The Contractor shall follow the requirements in California Code of Regulations, Title 8, Construction Safety Orders, Article 36 and General Industry Safety Orders, Article 88.
- B. When work is being performed that generates sparks or open flame, the Contractor shall provide an adequate number of fire extinguishers of the appropriate types at the work site. All employees shall be trained to use fire extinguishers

### 3.08 CONFINED SPACE ENTRY

- A. The Contractor shall comply with the provisions of California Code of Regulations General Industry Safety Orders, Title 8, Chapter 4, Subchapter 7, Group 106, Article 108 for confined spaces. In addition, the Contractor shall comply with the requirements contained herein.
- B. The following paragraphs contain minimum requirements for project work. RSD or the Contractor may impose stricter requirements dictated by specific conditions. A written copy of the Contractor's confined space operating and rescue procedures shall be kept at the site and be available for review by the RSD representative at all times. The Contractor shall be responsible for ensuring that only properly trained employees perform confined space work.
- C. Scheduling - The Contractor shall schedule any confined space entry at least one (1) working day prior to the planned entry and at that time, shall submit a plan for the entry including the exact location of the space to be entered, the nearest cross



street, exact house or business address, or site map, and a list of the Contractor's personnel that will be working on the confined space entry. If there is any change in the plan prior to the entry, the Contractor shall provide the updated information to the Inspector before the actual entry takes place.

D. Communications

1. The Contractor shall notify the Inspector and ensure that communication devices are functioning properly immediately prior to the actual entry. Generally, cellular phones are the only approved method of emergency communication. The Contractor shall verify and confirm that phone contact with emergency responders is accessible before the confined space entry, and shall establish an alternative method of communication if necessary to ensure the safety of its personnel.
2. A fully charged cellular phone with a back-up battery or vehicle adaptor shall be available prior to the entry. The phone shall be positioned immediately adjacent to the point of entry so that emergency assistance can be summoned directly. If this equipment is not available, no entry into the space shall be made. If the cellular phone becomes inoperative during a confined space entry, the entry shall be terminated and rescheduled. This practice does not, however, relieve the Contractor of his/her responsibility to immediately notify the Inspector of any unusual occurrence at the confined space entry site

E. RSD Right to Cancel

1. RSD may deny a planned confined space entry or cancel an in-progress confined space entry if conditions (e.g., noncompliance with procedures, inclement weather, unacceptable interruptions to operating systems, etc.) so dictate.

F. Pre-entry Procedures

1. **Entry Permit:** The Contractor will submit its own confined space entry permit form for approval. The Contractor shall provide the Inspector with a complete entry permit form at least one (1) working day prior to commencing a confined space entry. Immediately prior to the confined space entry, the form shall be signed by the Contractor and the Inspector. The Confined Space Entry Permit shall be kept at the job-site, and shall be returned to the Inspector when the confined space entry has been completed.
2. **Blocking or Plugging Sewers:** The Contractor shall obtain the Inspector's permission prior to blocking or plugging any sewers.
3. **Gas Detection Meters:** Gas detection meters shall be acceptable to the RSD representative and shall have sensing elements capable of detecting and

monitoring flammable gas, vapor or mists; oxygen; hydrogen sulfide; and carbon monoxide. Physical properties to be monitored include:

- flammable gas, vapor, or mists lower flammable limit (L.F.L.) – (10 percent L.E.L. maximum)
- oxygen - (19.5 percent minimum, 23.5 percent maximum)
- hydrogen sulfide concentration - (10 ppm maximum)
- carbon monoxide concentration - (25 ppm maximum)

Although flammables, hydrogen sulfide, oxygen deficiency, and carbon monoxide are of primary concern, other gas detection equipment may be required if other contaminants are suspected.

4. Testing: The Contractor shall test the air with properly calibrated and maintained gas detection equipment. The Contractor shall check gas detection equipment daily for proper operation including verifying that the equipment is electrically functional and has been tested with the calibration gas. The Contractor shall make a written record of the daily maintenance check. The Contractor shall record pre-entry air monitoring results on the permit and shall continue to record air monitoring results on the permit at intervals not to exceed fifteen (15) minutes.
5. Retrieval Systems (Side Entry): Each Contractor's employees working in a confined space where entry is made through a side opening such as a pipeline or tunnel shall wear a safety harness with line attached which meets the requirements of Cal/OSHA.
6. Retrieval Systems (Vertical Entry): Each Contractor's employee working in a confined space where entry must be made through a top opening shall wear a safety harness with line attached. The harness and line shall meet the requirements of Cal/OSHA. A hoisting device such as a tripod and winch that meets the requirements of Cal/OSHA shall be provided for lowering and lifting employees out of the space.
7. Equipment and Training: Prior to commencing any confined space entry, the Contractor shall provide workers associated with confined space entries with the appropriate equipment and adequate training. Rescue and emergency personnel shall be CPR/First Air trained and respirator qualified. Attendance records of training sessions shall be maintained by the Contractor. These records shall be available to RSD upon request.
8. Non-permit Confined Spaces: Certain projects may include work on existing manholes where complete bypassing is used and sewer inlets and outlets are plugged, newly constructed sanitary sewers, or newly constructed manholes where existing sewers have not been broken into and

no coatings are being applied. If the Contractor complies with the following minimum requirements, these newly constructed sanitary sewers and manholes will be considered non-permitted confined spaces and the following procedures shall be employed:

- a. The atmosphere's air quality in the manhole or sewer shall be initially checked prior to entry using an acceptable gas detection meter to ensure that a safe atmosphere exists.
- b. The air quality in the manhole or sewer shall be continuously monitored using gas detection meters with readings on the meter being regularly monitored at intervals not to exceed fifteen (15) minutes.
- c. Continuous mechanical ventilation shall be provided into manholes or sewers throughout the duration of the entry.

9. Minimum Number of Workers Required:

- a. Entry Permit: The Contractor shall assign a minimum of three (3) workers to Confined Space work where an Entry Permit is required: at least one (1) worker to enter and work in the Confined Space at least one (1) worker to continually observe and supervise the work from outside the space; and at least one (1) worker assigned to provide the required continuous communications duties.
- b. Non-Permit: A minimum of two (2) workers shall be assigned to work in Non-Permit Confined Spaces: at least one (1) worker to enter and work in the Non-Permit Confined Space; and at least one (1) worker to continually observe, supervise the work and provide the required continuous communications duties from outside the space.

**\*\*END OF SECTION\*\***

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## SECTION 01200

### PROJECT MEETINGS

#### PART 1 - GENERAL

##### ***1.01 PRE-CONSTRUCTION CONFERENCE***

Prior to the start of construction the District will conduct a pre-construction conference that shall be attended by the Contractor's Project Manager/Project Engineers and major subcontractors and major equipment and material suppliers, affected utilities and others as determined by the Contractor and Construction Manager. At the conference, the District will review the Contractor's proposed schedule of operations and the construction procedure and sequence requirements. Also discussed will be the Contractor's field organization, submittals, progress payments, change order procedures, safety requirements, permits and inspections, and other matters.

##### ***1.02 PROGRESS MEETINGS***

The Construction Manager shall schedule, arrange and conduct progress meetings. These meetings shall be conducted not more than once per week and shall be attended by the Contractor's superintendent and representatives of all subcontractors, utilities, and others, who are active in the execution of the Work. The purpose of these meetings shall be to review the Contractor's three (3) week schedule provided in accordance with Section 01310-1.07, **WEEKLY ACTIVITIES PLAN**, resolve conflicts, and in general, coordinate and expedite the execution of the Work.

The agenda of progress meetings shall include, as a minimum, review of progress and schedule, clarifications, changes, quality of work, progress payment request, and record documents. The Construction Manager shall prepare and distribute minutes to the meetings.

##### ***1.03 PARTNERING MEETINGS***

If desired by the Contractor, the District will host an initial Partnering Workshop, form and duration mutually agreeable to both the District and the Contractor.

The Construction Manager shall schedule and arrange periodic Partnering meetings as a follow up to the original workshop. These meetings shall occur and be attended by various participants as agreed at the initial partnering workshop. The purpose of these meetings is to keep all parties involved and apprised of project status, events, schedule and resolve potential disputes.

#### ***1.04 OTHER PROJECT MEETINGS***

The Contractor shall attend and require the participation of other subcontractors or suppliers for other project related meetings when requested by the Construction Manager or District.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*\* END OF SECTION \*\*\***

## **SECTION 01300 SUBMITTALS**

### **PART 1 - GENERAL**

#### **1.01 Summary**

- A. Where the Contractor is required by these Specifications to make submittals, they shall be made to the Construction Manager with a letter of transmittal and in accordance with the requirements of this Section.
- B. The Contractor shall submit the following items to the Construction Manager.
  - 1. Schedule of Submittals and Shop Drawings
  - 2. List of Submittals, Shop Drawings, Product Data and Materials
  - 3. Contractor's Safety Program
  - 4. Designated Safety Supervisor
  - 5. Designated "Competent Person(s)"
  - 6. Schedule of Values
  - 7. Construction Schedule
  - 8. Substitutions List
  - 9. Shop Drawings
  - 10. Product Data
  - 11. Samples
  - 12. Material Safety Data Sheets
  - 13. Operation and Maintenance Manuals
  - 14. Project Closeout Information
  - 15. Warranty Data
  - 16. Others as Specified in the Technical Specifications
  - 17. Manufacturer's Instructions
  - 18. Manufacturer's Certifications and Test Reports
  - 19. Construction and Demolition Debris Management Plan
- C. Quantity of Submittals:
  - 1. Submit one (1) digital PDF format of all submittals.
    - a. PDF submittal shall be clear and readable.
    - b. PDF submittal shall be searchable (not scanned or copied).
    - c. Annotate or mark submittal to clearly show the item or model being submitted.
    - d. Submittal shall have a Cover Letter

- i. Cover Letter shall detail all relevant information included within the submittal package and describes the applicability of the submitted documentation.
    - ii. Cover letter shall note all product substitutions and summarize all proposed products or materials not consistent with the project documents.
  - e. Submittals shall have a detailed table of contents
  - f. The Contractor shall utilize the relevant specification section to indicate conformance, substitutions, deviations or non-conformance to the technical information. Next to each specification paragraph or line item, utilize the following designations:
    - i. Utilize a check mark “√” next to each specification to indicate full compliance to the specification paragraph or line item as a whole;
    - ii. If substitutions, deviations or non-conformance from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and noted by a number in the margin of the paragraph or line item that references to a detailed written explanation of the request for substitution, deviation, or non-conformance.
  - g. Where applicable, a copy of the contract document plans that apply to the submitted equipment or materials shall be annotated to indicate specific changes or conformance to the Contract Documents.
- D. If paper copies are submitted:
  - 1. Provide three (3) copies, plus the number of copies the Contractor wants to be returned.
- E. Reviewed copies of the Construction Schedule and the Final Operation and Maintenance Manuals will not be returned to the Contractor. It shall be the Contractor's responsibility to copy and/or conform reviewed submittals in sufficient numbers for its files, subcontractors, and vendors.

## **1.02 Contractor's Responsibilities**

- A. The Contractor shall submit, at its own expense, samples, submittals and details of structural and reinforcing steel, equipment, material, electrical controls, architectural fabrications, pipe, pipe joints, special pipe sections, and any other appurtenances as required in Technical Specifications.
- B. All samples, submittals and supporting data, catalogs, schedules, etc., shall be submitted as the instruments of the Contractor, who shall be responsible for their accuracy and completeness and coordination. Such responsibility shall not be delegated in whole or part to subcontractors or suppliers. These submittals may be prepared by the Contractor, subcontractors, or suppliers, but the Contractor shall ascertain that submittals meet all of the requirements of the Contract Documents, while conforming to structural, space, and access conditions at the point of installation. Designation of work "by others," if shown in submittals, shall



mean that the work will be the responsibility of the Contractor rather than the subcontractor or supplier who prepared the submittals.

- C. The Contractor shall insure that there is no conflict with other submittals and notify the Construction Manager in each case where its submittal may affect the work of another contractor or the District. The Contractor shall insure coordination of submittals among the related crafts and subcontractors. The Contractor accepts the responsibility and expense for additional costs and delays which may result from Work performed without Favorably Reviewed submittals.
- D. Submittals shall be prepared in such form that data can be identified with the applicable Specification paragraph. The data shall clearly demonstrate compliance with the Contract Plans and Specifications and shall relate to the specific equipment to be furnished. Where manufacturer's standard drawings are employed, they shall be marked clearly to show what portion of the data is applicable to this project.

### **1.03 MATERIAL AND EQUIPMENT SUBSTITUTIONS**

#### **A. General**

1. In preparing these Contract Documents, the Design Consultant has named those products which to its knowledge meet the Technical Specifications and are equivalent in construction, functional efficiency, and durability.
2. Wherever catalog numbers and specific brands or trade names preceded by "similar and equal" or followed by the designation "or equal" are used in conjunction with a designated material, product, thing, installation, or service mentioned in these Specifications, they are used to establish the standards of quality and utility required.
3. The first-named manufacturer is the basis for the project design and the use of alternative named or unnamed manufacturer's products proposed by the Contractor may require modifications in the project design and construction.
4. Where only one product has been named by brand, it is the only brand, trade name, or manufactured product known to the Design Consultant that meets the requirements of the Technical Specifications. Bidders will have until ten (10) days prior to the date set for the opening of bids to submit data substantiating a request for a substitution of "an equal" item.
5. The District has made a determination that no substitution will be considered and that the following listed materials and/or equipment must be furnished as designated below in order to match others in use by the District or because it is a unique or novel product application required to be used by the District:

No Sole Source Materials or Equipment Identified

#### **B. Substitutions**

1. Substitutions, which are equal in quality and utility to those specified, will be permitted, subject to the following provisions. For this purpose, the

contractor shall submit to the Construction Manager within fifteen (15) days of the Notice of Award, a typewritten list containing a description of each proposed substitute item or material. Sufficient data, drawings, samples, literature, calculations, or other detailed information as will demonstrate to the Design Consultant that the proposed substitute is equal in quality and utility to the material specified shall be appended to this list. The Design Consultant will Favorably Review in writing such proposed substitutions as are, in its opinion, equal in quality to the items or materials specified. In the event that a substitute is Favorably Reviewed, fifty (50) percent of all savings shall be credited to the District.

2. Failure of the Contractor to submit proposed substitutions for review in the manner described above and within the time prescribed shall be sufficient cause for rejection by the Construction Manager of any substitutions otherwise proposed.

C. Modifications and Costs

1. If alternative named or substitutions are proposed by the Contractor and Favorably Reviewed by the Design Consultant, the Contractor is responsible for providing, at no additional cost to the District, any electrical, mechanical, structural, or other related changes or testing that may be required to accommodate or provide the particular material or equipment the Contractor desires to use. Any deviation from the Specifications or the Drawings resulting from the type of material or equipment to be used shall not be the basis for any "extra charges" above and in excess of the original bid price of the work.
2. In addition the Contractor is responsible for all additional costs to the District, and its agents and representatives, for evaluation of data submitted by the Contractor for alternative named or substitutions and any redesign necessary. The District shall deduct the costs from the Contract monies due the Contractor.

**1.04 SUBMITTAL AND MATERIAL LIST**

- A. Within fifteen (15) days after the Award of Contract and prior to the submission of the initial shop drawings, the Contractor shall submit a complete list of all required submittals to the Construction Manager for favorable review.
- B. The Submittal and Material List shall include a description of each item, Specification reference and the anticipated submittal date. The List shall include all items of equipment and materials for mechanical, piping, electrical, heating and ventilating, equipment piping, and plumbing work; and the names of manufacturers with whom purchase orders have been placed.
- C. Items on the List shall be arranged in the same order as in these Specifications, and shall contain sufficient data to identify precisely the items of material and equipment the Contractor proposes to furnish. The List shall reference the applicable Specification section or Drawing.
- D. After the submission is Favorably Reviewed and returned to the Contractor by the Construction Manager, it shall become the basis for the submission of detailed

manufacturer's drawings, catalog cuts, curves, diagrams, schematics, data, and information on each separate item for review.

- E. An incomplete submittal list shall not be the basis for avoiding a submittal required by the Contract Documents. No work shall proceed on any item until it has been submitted and favorably reviewed. An incomplete submittal list is not a basis for avoiding a submittal required by the Specifications.

## 1.05 TRANSMITTAL PROCEDURES

### A. Transmittal Form

1. A separate transmittal form shall be used for each specific item, class of material, equipment, and items specified in separate, discrete sections, for which the submittal is required.
2. Submittal documents common to more than one piece of equipment shall be identified with all the appropriate equipment numbers. Submittals for various items shall be made with a single form when the items taken together constitute a manufacturer's package or are so functionally related that expediency indicates checking or review of the group or package as a whole.
3. The specification section and subsection or paragraph to which the submittal is related shall be indicated on the transmittal form.
4. A unique number, sequentially assigned, shall be noted on the transmittal form accompanying each item submitted. Original submittal numbers shall have the following format: "XXX"; where "XXX" is the sequential number assigned by the Contractor. Resubmittals shall have the following format: "XXX-Y" where "XXX" is the originally assigned submittal number and "Y" is a sequential letter assigned for resubmittals, i.e., A, B, or C being the 1st, 2nd, and 3rd resubmittals, respectively. Submittal 25B, for example, is the second resubmittal of Submittal 25.

### B. Deviations from the Contract

1. If the submittals show any deviations from the Contract requirements, the Contractor shall submit with the submittal submission a separate written description of such deviations and the reasons therefore.
2. If the District accepts such deviation, the District shall issue an appropriate Contract Change Order, except that, if the deviation is minor, or does not involve a change in price or in time of performance, a Change Order need not be issued.
3. If any deviations from the Contract requirements are not noted on the submittal, the review of the shop drawing shall not constitute acceptance of such deviations.

### C. Submittal Completeness

1. The Contractor shall review and check all submittals before submitting them to the Construction Manager.

2. The Contractor shall stamp and certify on the transmittal letter and on each shop drawing that they have been checked, are in compliance with the Plans and Specifications, and all deviations from the Contract requirements are noted.
3. If the Contractor submits an incomplete submittal, the submittal will be returned to the Contractor without review.
4. A complete submittal shall contain sufficient data to demonstrate that the items comply with the Specifications, shall meet the minimum requirements for submissions cited in the technical specifications, shall include materials and equipment data and seismic anchorage certifications where required, and shall include any necessary revisions required for equipment other than first named.
5. It is considered reasonable that the Contractor shall make a complete and acceptable submittal to the Construction Manager at least by the second submission of data.
6. The District reserves the right to deduct monies from payments due the Contractor to cover additional costs of review beyond the second submission.

D. Submittal Period

1. All submittals shall be completed within fourteen (14) days after the Notice to Proceed unless the Construction Manager accepts an alternate schedule for submission of submittals proposed by the Contractor.
2. Submittals shall be submitted in time to allow appropriate time for review and response to submittals as provided for herein prior to the incorporation of materials and equipment in the Work.

E. Certificates of Compliance

1. For materials furnished and installed in accordance with Division 2 of these Specifications and for standard "off-the-shelf" materials where the Contractor is furnishing the materials listed in the Contract Documents, the Contractor may furnish a Certificate of Compliance in lieu of a full shop drawing for such materials.
2. The Certificate of Compliance shall be submitted as otherwise stipulated in Section 01300-1.05, TRANSMITTAL PROCEDURES. The certificate shall be signed by the manufacturer or supplier of the material and shall state that the materials involved comply in all respects with the requirements of the Contract Documents.
3. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the Contractor of responsibility for incorporating material in the Work which conforms to the requirements of the Contract Documents.

F. Alternate Submittals

1. If a submittal is approved and the Contractor elects to submit an alternate item for review for the same application, the Contractor shall be responsible for the review costs for the alternate submittal.

## **1.06 REVIEW PROCEDURE**

- A. Submittals shall be submitted to the Construction Manager for review and returned to the Contractor within fourteen (14) days after receipt.
- B. Review of submittals by the Design Consultant has as its primary objective the completion for the District of a project in full conformance with the Contract Plans and Specifications, unmarred by field corrections, and within the time provided.
- C. In addition to this primary objective, submittal review as a secondary objective will assist the Contractor in its procurement of equipment that will meet all requirements of the project Plans and Specifications, will fit the structures detailed on the Plans, will be completed with respect to piping, electrical, and control connections, will have the proper functional characteristics, and will become an integral part of a complete operating facility.
- D. After review by the Design Consultant of each of the Contractor's submissions, the material will be returned to the Contractor with actions defined as follows:
  1. NO EXCEPTIONS NOTED (RESUBMITTAL NOT REQUIRED) - Accepted subject to its compatibility with future submissions and additional partial submissions for portions of the work not covered in this submission. Does not constitute approval or deletion of specified or required items not shown in the partial submission.
  2. MAKE CORRECTIONS NOTED (RESUBMITTAL NOT REQUIRED) - Same as 1, except that minor corrections as noted shall be made by the Contractor.
  3. MAKE CORRECTIONS NOTED (RESUBMIT) - Rejected because of major inconsistencies or errors which shall be resolved or corrected by the Contractor prior to subsequent review by the Design Consultant.
  4. NOT ACCEPTABLE (RESUBMIT) - Submitted material does not conform to Plans and Specifications in major respect, i.e.: wrong size, model, capacity, or material.
- E. Items 1 and 2 above (no resubmittal required) are considered "Favorable Review." Items 3 and 4 above (correction and resubmittal required) are considered "unfavorable review."

## **1.07 EFFECT OF REVIEW OF CONTRACTOR'S SUBMITTALS**

- A. The Design Consultant's Favorable Review of submittals shall be obtained prior to the fabrication, delivery and construction of items requiring submittal review.
- B. Favorable Review of submittals does not constitute a Change Order to the Contract requirements.

- C. The Favorable Review of all submittals by the Design Consultant shall apply in general design only and shall in no way relieve the Contractor from responsibility for errors or omissions contained therein.
- D. Favorable Review by the Design Consultant shall not relieve the Contractor of its obligation to meet safety requirements and all other requirements of laws, nor constitute a Contract Change Order.
- E. Favorable Review will not constitute acceptance of any responsibility for the accuracy, coordination, and completeness of the submittals or the items of equipment represented on the submittals.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*\* END OF SECTION \*\*\***

## **SECTION 01301 SCHEDULE OF VALUES**

### **PART 1 - GENERAL**

#### **1.01 Summary**

- A. This Section defines the process whereby the Schedule of Values (lump sum price breakdown) shall be developed. Monthly progress payment amounts shall be determined from the monthly progress updates of the Schedule activities.

#### **1.02 Submittals**

A. Preliminary Schedule of Values

1. The Contractor shall submit a preliminary Schedule of Values for the major components of the work at the Preconstruction Conference. The listing shall include, at a minimum, the proposed value for major work components in accordance with the Contract Documents and Bid Schedule.
2. The Contractor and Owner's Representative shall meet and jointly review the preliminary Schedule of Values and make any adjustments in value allocations if, in the opinion of the Owner's Representative, these are necessary to establish fair and reasonable allocation of values for the major work components.
  - a. Front end loading will not be permitted.
  - b. The Owner's Representative may require reallocation of major work components from items in the above listing if, in the opinion of the Owner's Representative, such reallocation is necessary.
  - c. This review and any necessary revisions shall be completed within 15 days from the date of Notice to Proceed.

B. Detailed Schedule of Values

1. The Contractor shall prepare and submit a detailed Schedule of Values to the Owner's Representative within 30 days from the date of Notice to Proceed.
2. The detailed Schedule of Values shall be based on the accepted preliminary Schedule of Values for major work components. Because the ultimate requirement is to develop a detailed Schedule of Values sufficient to determine appropriate monthly progress payment amounts, to allow a fair and reasonable estimate to be made of the value of work installed, and sufficient detailed breakdown shall be provided to meet this requirement. The detail of the cost breakdown must be sufficient to provide timely processing of the monthly progress payment request. A breakdown of materials and construction may be requested.
3. The Owner's Representative shall be the sole judge of acceptable numbers, details and description of values established. If, in the opinion of the Owner's Representative, a greater number of Schedule of Values items than proposed by the Contractor are necessary, the Contractor shall add the additional items so identified by the Owner's Representative.
4. The Contractor and Owner's Representative shall meet and jointly review the detailed Schedule of Values within 35 days from the date of Notice to Proceed.
5. The value allocations and extent of detail shall be reviewed to determine any necessary adjustments to the values and to determine if sufficient detail has been proposed. Any adjustments deemed necessary to the value allocation or level of detail shall be made by the

Contractor and a revised detailed Schedule of Values shall be submitted within 40 days from the date of Notice to Proceed.

6. The cost breakdown shall include separate allowances for any testing and startup work required.
7. Measurable approximate quantities of work performed by the Contractor or its subcontractors shall be provided.
8. For quantities that are the sum total of several individual quantities, backup summaries shall be provided which list the individual descriptions and quantities. These summaries then will be used to determine the quantities of work in place in subsequent progress payment requests.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*END OF SECTION\*\***



## SECTION 01310

### PROGRESS SCHEDULES

#### PART 1 - GENERAL

##### ***1.01 GENERAL***

The Contractor shall provide a construction schedule that includes a procedural outline of any system shutdowns and proposed tie-in procedures, which shall be subject to the favorable review of the Construction Manager and the District.

##### ***1.02 NOT USED***

##### ***1.03 CONSTRUCTION SCHEDULE***

###### A. General

The Construction Schedule for this Project will also be referred to as the Base Schedule.

The Contractor shall designate, in writing, an authorized representative in its firm who will be responsible for the preparation, revising, and updating of the Base Schedule. The Contractor's representative shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling the construction scheduling requirements set forth herein, and such authority will not be interrupted throughout the duration of the Project. The requirements for the Base Schedule are included to assure adequate planning and execution of the Work and to assist the Construction Manager in appraising the reasonableness of the proposed schedule and evaluating progress of the Work.

###### B. Preliminary Progress and Base Schedule

1. Within fourteen (14) days after notice of award of Contract, the Contractor shall submit a Preliminary Progress Schedule covering the following project phases and activities:
  - a. Procurement and Submittals, including shop drawings and fabrication and delivery of key and long lead time procurement activities.
  - b. All activities planned in the execution of the Work.
  - c. The total duration of the summary activities shall equal the Contract Time.
  - d. Approximate duration for each summary activity representing the Contractor's best estimate for the work the summary activity represents.

2. The Preliminary Progress Schedule shall describe the activities to be accomplished and their dependency subject to all requirements under these Construction Schedule provisions, as appropriate. The Preliminary Progress Schedule will be used temporarily to record and monitor the progress of the Work until a Base Schedule has been completely developed and Favorably Reviewed. Recorded data on the Preliminary Progress Schedule shall be incorporated into the Base Schedule during the first schedule update.
3. The Construction Manager shall review the schedule and provide any comments, its Favorable Review of the schedule, or request a meeting to review the schedule with the Contractor within seven (7) days of receipt of the schedule. If requested, the Contractor shall participate in a review and evaluation of the schedule with the Construction Manager. Any revisions necessary as a result of this review shall be resubmitted for review by the Construction Manager within five (5) days.
4. The Base Schedule shall be used in implementation of the work and progress of the work will be compared to the Base Schedule at each weekly progress meeting.

#### ***1.04 WEATHER CONDITIONS***

Seasonal weather conditions shall be considered in the planning and scheduling of work influenced by high or low ambient temperatures or precipitation to ensure the completion of the Work within the Contract Time. No time extensions will be granted for the Contractor's failure to take 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.

The expected loss of working days specified in the Supplementary General Conditions, Section 00800-1.03, **WEATHER DAYS**.

#### ***1.05 UPDATES***

- A. Submittal Period

The Contractor shall submit at weekly intervals a report of the actual construction progress. Each weekly report shall cover the previous week's progress. If, in the opinion of the Construction Manager, the project is behind schedule, the report shall include a revised tabular reports showing the Contractor's proposed revised schedule to complete the project by the designated Contract Time.

#### ***1.06 TIME IMPACT ANALYSES***

- A. When Change Orders are initiated or delays are experienced, the Contractor shall submit to the Construction Manager a written Time Impact Analysis illustrating the influence of each change, delay, or Contractor request on the current Progress Schedule completion date.

1. Construction Schedule – Analysis

- a. The analysis shall demonstrate the time impact based on the beginning and ending date of the occurrence, change, delay or revision; the status of construction at that point in time immediately preceding the occurrence, change, delay or revision; and the event time computation of all affected activities.
  - b. The event times used in the analysis shall be those included in the latest updated copy of the Construction Schedule or as adjusted by mutual agreement between the Construction Manager and Contractor.
- B. Activity time delays will not automatically mean that an extension of Contract Time is warranted or due the Contractor.
  1. It is possible that an excusable delay or contract modification will not affect existing critical activities or cause noncritical activities to become critical, i.e., a delay or modification may result in only absorbing a part of the available total float that may exist within an activity chain of the network, thereby not causing any effect on the Contract completion date or Contract Time.
  2. The Contractor acknowledges and agrees that mitigation for delays due to changes, differing site conditions, and other causes will require revision of preferential sequences of the Work. Accordingly, to mitigate delays, the activities shall be resequenced prior to the Contractor proposing an updated schedule which supports a delay to the Project as a whole. When a delay to the Project as a whole can be avoided by revising preferential sequencing, and the Contractor chooses not to implement the revisions, the Contractor will be entitled to a time extension but is not entitled to compensation for indirect overhead for this extended duration.
  3. Actual delays in activities which do not affect the critical path work or which do not move the Contractor's planned completion date beyond a milestone or the Contract completion date will not be the basis for an adjustment to the Contract Time.
  4. Extensions of time can be granted for a delayed or impacted activity only for the duration of the time adjustment which exceeds the total float for the schedule path wherein the activity is located. The adjustment is only applicable during the time the delay occurred or when the change is ordered.
- C. Time Impact Analyses shall be submitted within seven (7) days after a delay occurs or with the Contractor's cost proposal in response to a notice of change from the Construction Manager. In cases where the Contractor does not submit a Time Impact Analysis for a specific Change Order, delay, or other Contractor requested time extension within the specified period of time, then it is mutually agreed that the particular Change Order, delay, or Contractor request has no time impact on the Contract completion date and no time extension is required.

1. Approval or rejection of Time Impact Analyses by the Construction Manager and the District will be made within seven (7) days after receipt of the Time Impact Analysis unless subsequent meetings and negotiations are necessary.
2. Upon approval, a copy of the Time Impact Analysis signed by the Construction Manager and District will be returned to the Contractor.
3. Upon mutual agreement by both parties, schedule revisions illustrating the influence of Change Orders, delays, and/or Contractor requests will be incorporated into the next schedule update.

### ***1.07 WEEKLY ACTIVITIES PLAN***

On the last working day of every week the Contractor shall submit to the Construction Manager the Contractor's Plan of Activities for the following three weeks. The Plan of Activities shall describe the activity and location of the activity and include the activity number as provided in the Construction Schedule.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*\*\* END OF SECTION \*\*\*\***

## **SECTION 01400**

### **QUALITY CONTROL**

#### **PART 1 - GENERAL**

##### **1.01 INSPECTION AND TESTING**

Additional requirements for tests are described in the Central Contra Costa Sanitary District Standard Specifications for Design and Construction, 2014 Edition and the Contract Documents.

###### **A. General**

Where the Contract Documents require work to be tested or approved, it shall be tested in the presence of the Construction Manager or its authorized representative. The Construction Manager shall have the right to witness all on-site tests performed by the Contractor and any shop tests. The results of any tests performed by the Contractor shall be made available for the information of the Construction Manager.

Inspections, tests or Favorable Reviews by the Construction Manager or others shall not relieve the Contractor from its obligation to perform the work in accordance with the requirements of the Contract Documents or for its sole responsibility for the quality of workmanship and materials.

Except as specifically required under the Technical Specifications for testing and inspection, all tests for materials furnished by the Contractor will be done in accordance with commonly recognized standards of national organizations. Where tests are to be performed by the Construction Manager or by an independent laboratory or agency, the Contractor shall furnish such samples of all materials as required by the Construction Manager without charge. The sample or samples of materials to be tested shall be selected by such laboratory or agency, or the Construction Manager, and not by the Contractor. No material for which the Contract Documents require the submittal and approval of tests, certificates of compliance or other documentation shall be incorporated in the Work until such submittal has been made and approved.

The Contractor shall provide safe access for the Construction Manager and inspectors to adequately inspect the quality of work and the conformance with the Contract Documents. The Contractor shall furnish the Construction Manager the necessary labor and facilities for such things as excavation in the compacted fill to the depths required to take samples. The Contractor shall provide adequate lighting, ventilation, ladders and other protective facilities as may be necessary for the safe performance of inspections.

Records shall be available at all reasonable hours for inspection by other local or State agencies to ascertain compliance with laws and regulations.

Upon completion of the Work the Construction Manager will conduct a final inspection as provided for in Section 00700-8.07, **FINAL INSPECTION AND PAYMENT**.

**B. Notice**

The Contractor shall notify the Construction Manager at least 24 hours before any field testing or special inspections are required to be performed by the Construction Manager or independent laboratory furnished by the District. The Contractor shall notify the Construction Manager at least two hours before any inspection is required to be performed or to witness the Contractor's on-site field testing.

Whenever the Contractor varies the period during which work is carried on each day, the Contractor shall give due notice to the Construction Manager so that proper inspection may be provided. Any work done in the absence of the Construction Manager shall be subject to rejection.

The Contractor shall give the Construction Manager written notification at least 30 days prior to the shipment of materials and equipment to be tested and/or inspected at the point of origin. Satisfactory tests and inspections at the point of origin shall not be construed as a final acceptance of the materials and equipment nor shall such tests and inspections preclude retesting or reinspection at the site of the Work.

**C. Costs of Testing**

1. The Contractor shall be responsible for, and shall pay for, all quality control and off-site tests of materials required including all source and mix design tests for the approval of soil and concrete materials. The District will perform the soils and concrete confirmation tests detailed in the Technical Specifications during the performance of the Work. District will retain and pay a qualified testing agency to perform soil compaction testing and work identified as requiring special inspections and testing as defined by UBC section 1701. All other testing required by the Technical Specifications shall be the responsibility of the Contractor.
2. The Contractor shall be responsible for, and shall pay for, all source quality control and all on-site tests of materials required, except those tests specifically noted to be performed and paid for by the District.
3. The Construction Manager shall have the authority to require additional tests or inspections due to the manner in which the Contractor executes its work. Examples of such additional tests and inspections include; tests of materials substituted for previously accepted materials, or substituted for specified materials, or retests made necessary by failure of material to comply with the requirements of the Specifications. Where such tests and inspections are required by Contract to be performed by the District, the District will pay for the additional tests and inspections but will issue a unilateral Change Order to deduct these costs from the Contract price.

4. In the event the Contractor prematurely notifies of testing, inspection, special inspection, or on site inspection in accordance with Section 01400-1.01B, and the Contractor is not prepared or the project has not progressed to the point requiring testing, inspection, special inspection, or on site inspection, the Contractor shall pay for all costs associated with the premature notification of testing and inspection personnel and equipment.

**D. Work Covered Prior to Inspection and/or Testing**

Work requiring inspection and/or testing shall not be concealed or buried prior to the acceptance of such inspection or testing. Work covered without the favorable review or consent of the Construction Manager shall, if required by the Construction Manager, be uncovered for inspection and/or testing at the Contractor's expense.

**E. Work Covered With Prior Inspection and/or Testing**

If the Construction Manager considers it necessary or advisable that covered work which was favorably inspected and tested be uncovered for reinspection and/or retesting, the Contractor, at the Construction Manager's request, will uncover, expose or otherwise make available for observation, inspection or testing as the Construction Manager may require, that portion of the work in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such work is defective, the Contractor will bear all expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such work is not found to be defective the Contractor will be allowed an increase in the Contract price or an extension of the Contract time, or both, directly attributable to such uncovering, exposure, observation, testing and reconstruction, and a Change Order shall be issued for such additional work.

**F. Coordination of Other Inspections**

The Contractor is completely responsible for scheduling all agency inspections in accordance with the agency requirements. The Contractor shall notify the Construction Manager of all building and other work component inspection notices and schedules. Failure of the Contractor to properly coordinate and schedule these inspections shall not be cause for time extensions.

**1.02 TEST WATER**

The Contractor shall furnish and dispose of the water which is required for testing of piping and structures. The Contractor shall dispose of all testing water without damage to property, and in accordance with applicable regulations.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*\* END OF SECTION \*\*\***



**SECTION 01430  
OPERATING AND MAINTENANCE INFORMATION**

**PART 1 - GENERAL**

**1.01 Summary**

- A. Contractor shall supply Operations and Maintenance (O&M) Manuals for equipment as specified in other parts of the Project Documents.

**1.02 Description**

- A. The Contractor shall provide four (4) sets of operating and maintenance instructions for all equipment and devices furnished under this contract and one (1) pdf set. The operating and maintenance material supplied shall be original printed copies of manufacturer's brochures and/or manuals. Photocopied material will not be acceptable. Operating and maintenance instructions for each item of equipment and each equipment assembly shall consist of:

1. Names and addresses of manufacturer, nearest representative of manufacturer, and nearest supplier of manufacturer's equipment and parts
2. For equipment requiring lubrication, the manufacturer's recommended lubricants and lubrication schedule.
3. For equipment containing integral electrical controls, diagrams showing internal and connection wiring.
4. Specified operating and maintenance information. This information shall include, but not necessarily be limited to, the following items:
  - a. Equipment data: The Contractor shall provide a good quality photocopy of Equipment Maintenance Summary sheets for review and shall make corrections to the originals as noted in the submittal review comments.
  - b. Start-up procedures: These instructions shall include equipment manufacturer's recommendations regarding installation, adjustment, calibration and trouble-shooting.
  - c. Operating procedures: These instructions shall include the equipment manufacturer's recommended step-by-step procedures for starting, operating and stopping the equipment under all modes of operation.
  - d. Preventive maintenance procedures: These instructions shall include the equipment manufacturer's recommendations regarding the steps and schedules to be followed in maintaining the equipment.
  - e. Parts list: This list shall include generic title and identification number of each component part of the equipment.
  - f. Exploded views: These shall be provided where appropriate.
  - g. Spare parts list: This list shall include the manufacturer's recommendations of number of parts that should be stored by the Owner.
  - h. Overhaul instructions: These instructions shall consist of the manufacturer's directions for the disassembly, repair and reassembly of the equipment.

**1.03 Submittal Procedure**

- A. Operating and maintenance (O&M) instructions shall be submitted to the Owner's Representative accompanied by the submittal transmittal form described in Section 01300.

B. Required submittals:

1. Initial Submittal: One (1) copy of O & M Manual shall be submitted for approval. Initial O&M submittal may be hard copy or PDF format.
2. Intermediate Submittal: One (1) copy of revised O & M Manual shall be submitted for approval. Intermediate O&M may be hard copy or PDF format.
3. Final Submittal: Once approved, submit four (4) paper copies and one (1) PDF.
4. The submitted O&M Manuals shall have a separate submittal numbering system from the general equipment and material submittals required to confirm conformance with the design specifications.

C. PDF Format shall be manufacturer's data converted directly to PDF. Scanned PDF information is not acceptable unless approved by the Owner's Representative.

1. PDF documents shall be bookmarked, indexed and in searchable format.

D. For ease of identification, each manufacturer's brochure and manual shall be appropriately labeled with the equipment name, equipment number and specification number, as it appears in the contract documents.

E. The information shall be organized in binders in numerical order by the specification section numbers assigned in the contract documents. The binders shall be provided with a table of contents and tab sheets to permit easy location of desired information. Each numerical section shall contain a complete itemized data list with equipment name and equipment number for the information contained in that section. Binders shall be three-ring with clear vinyl pockets on the front and spine. The binder title shall be clearly visible on the spine and the front cover.

F. The following procedures shall be used:

1. Contractor shall include in each O&M submittal a good quality photocopy of associated Equipment Maintenance Summary sheets, for each specification section for review.
2. Submittals will be returned with a review sheet and comments.
3. Contractor shall resubmit, if requested by the Owner's Representative, and retain all copies of approved submittals until all sections have been approved.
4. When all sections have been approved, Contractor shall organize and bind the manuals for all the sections of the contract specifications according to the above instructions and submit one complete set of O&M Manuals for final review. Contractor shall submit separately and unbound the completed original Equipment Maintenance Summary sheets.
5. Final review will be for the organization and binding of a complete set of manuals as specified and will not include review of previously approved material.
6. When the complete set is approved, the Contractor shall submit four (4) complete sets to the Owner's Representative as approved and specified.

G. If the manufacturer's standard brochures and manuals are used to describe operating and maintenance procedures, such brochures and manuals shall be modified to reflect only the model or series of equipment used on this project.

1. Clearly mark or annotate the actual model supplied for the project.
2. Extraneous material shall be crossed out neatly or otherwise annotated or eliminated.

#### **1.04 Field Changes**

A. Following the acceptable installation and operation of an equipment item, the item's operating and maintenance instructions, including drawings, shall be modified and supplemented by the

Contractor to reflect any as-built conditions, field changes or information required by field conditions.

**1.05 Payment**

- A. Acceptable operating and maintenance information must be delivered to the Owner's Representative before the Contractor can be paid for more than 80 percent of the purchase value of that equipment and prior to installation of the equipment. Purchase value shall be the net price for the equipment as given on the paid invoice. Acceptable operating and maintenance information for the project must be delivered to the Owner's Representative prior to the project being 75 percent complete. Progress payments for work in excess of 75 percent completion will not be made until the specific acceptable operating and maintenance information has been delivered to the Owner's Representative.

**PART 2 - MATERIALS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*END OF SECTION\*\***

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## SECTION 01510

### TEMPORARY UTILITIES

#### PART 1 - GENERAL

##### ***1.01 ELECTRICAL SERVICE***

Electric power availability is limited at the site. The Contractor may use plant 110V power outlets for small tools. For other electric power required, the Contractor shall arrange, at its own cost, with the local utility to provide adequate temporary electrical service at a mutually agreeable location. The Contractor shall then provide adequate jobsite distribution facilities conforming to applicable codes and safety regulations. The Contractor shall provide, at its own cost, all electric power required for construction, testing, general and security lighting, and all other purposes whether supplied through temporary or permanent facilities.

##### ***1.02 WATER***

No water is available at the project site. The Contractor shall pay for and shall construct all facilities necessary to furnish water for its use during construction. Water used for human consumption shall be kept free from contamination and shall conform to the requirements of the State and local authorities for potable water. The Contractor shall pay for all water used for the Contractor's operations prior to final Acceptance.

##### ***1.03 TEMPORARY LIGHTING***

The Contractor shall provide temporary lighting in all work areas sufficient to maintain a lighting level during working hours not less than the lighting level required by California OSHA standards. As permanent lighting facilities are completed they may be used in lieu of temporary facilities, provided however, that bulbs, lamps, or tubes of such facilities used by the Contractor shall be replaced prior to final Acceptance of the Work.

##### ***1.04 HEATING AND VENTILATION***

The Contractor shall provide means for heating and ventilating all work areas as may be required to protect the Work from damage by freezing, high temperatures, weather, or to provide a safe environment for workers. Un-vented direct fired heaters shall not be used in areas where freshly placed concrete will be exposed to the combustion gases until at least two hours after the concrete has attained its initial set.

##### ***1.05 SANITARY CONVENIENCES***

The Contractor shall provide suitable and adequate sanitary conveniences for the use of all persons at the site of the Work. Such conveniences shall include chemical toilets or water closets and shall be located at appropriate locations at the site of the Work. Chemical toilets

shall be maintained in a sanitary condition at all times. All sanitary conveniences shall conform to the regulations of the public authority having jurisdiction over such matters. At the completion of the Work, all such sanitary conveniences shall be removed and the site left in a sanitary condition.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*\* END OF SECTION \*\*\***

## SECTION 01560

### TEMPORARY CONTROLS

#### PART 1 - GENERAL

##### ***1.01 TEMPORARY FACILITIES***

Construction hoists, elevators, scaffolds, stages, shoring, and similar temporary facilities shall be of ample size and capacity to adequately support and move the loads to which they will be subjected. Railings, enclosures, safety devices, and controls required by law or for adequate protection of life and property shall be provided.

##### ***1.02 STAGING AND FALSEWORK***

Temporary supports shall be designed by a registered professional engineer with an adequate safety factor to assure adequate seismic and load bearing capability. The Contractor shall submit design calculations for staging and shoring prior to commencement of work and as required by Section 02350-1.04.

Excavation support shall be in accordance with Section 00700-4.07E, **EXCAVATION SAFETY**.

##### ***1.03 PROTECTION OF WORK, PROPERTY AND PERSONS***

The Contractor shall be responsible for the care of all work until its completion and final Acceptance; and the Contractor shall, at its own expense, replace damaged or lost material and repair damaged parts of the Work, or the same may be done by the District, and the Contractor and its sureties shall be liable therefore. The Contractor shall make its own provisions for properly storing and protecting all material and equipment against theft, injury, or damage from any and all causes. Damaged material and equipment shall not be used in the Work. The Contractor shall take all risks from floods and casualties, or for delays from such causes. The Contractor may, however, be allowed a reasonable extension of time on account of such delays, subject to the conditions herein before specified. The Contractor shall remove from the vicinity of the completed work all plant, buildings, rubbish, unused material, concrete forms, sheeting or equipment belonging to the Contractor or used under its discretion during construction; and in the event of the Contractor's failure to do so, the same may be removed by the District at the expense of the Contractor, and the Contractor and its sureties shall be liable therefore.

The Contractor shall adopt all practical means to minimize interference to traffic and inconvenience, discomfort, or damage. The Contractor shall protect against damage, any piling, duct or structures crossing trenching or encountered in the Work and shall be responsible for any damage done to such structures, or damage therefrom. The Contractor shall support or replace, any such structures without delay and without any additional compensation, to the entire satisfaction of the Construction Manager. All obstructions to

traffic shall be guarded by flagmen as required and by barriers and illuminated at night. The Contractor shall be responsible for all damage to persons and property directly or indirectly caused by its operations, and under all circumstances the Contractor shall comply with the regulations of the City or County, and the laws and regulations of the State of California, relative to safety of persons and property and the interruption of traffic and the convenience of the public within the respective jurisdiction, and the Contractor shall be solely responsible for any damages caused by failure to provide proper safety.

The Contractor will be held responsible for and be required to make restitution, at its own expense, for all damage to persons or property caused by the Contractor or subcontractor, or the agents, or employees of either during the progress of the Work and until its final Acceptance.

#### ***1.04 FENCES (NOT USED)***

#### ***1.05 TEMPORARY ENCLOSURES***

When sandblasting, spray painting, spraying of insulation, or other activities inconveniencing or dangerous to property or the health of employees or the public are in progress, the area of activity shall be enclosed adequately to contain the dust, over-spray, or other hazard. In the event there are no permanent enclosures of the area, or such enclosures are incomplete or inadequate, the Contractor shall provide suitable temporary enclosures.

#### ***1.06 ABOVE GRADE PROTECTION***

On multi-level structures the Contractor shall provide safety protection that, as a minimum, shall meet the requirements of Title 8, California Code of Regulations.

#### ***1.07 WORKING HOURS***

Construction shall be allowed only between the hours of seven (7:00) a.m. and four (4:00) p.m. on weekdays, unless otherwise approved by the District.

The Contractor shall be responsible for any inspection and additional administration costs incurred by the District, or its agents and representatives, for work by the Contractor outside regular defined working hours on weekdays, or any work on weekends or holidays recognized by the District.

If an inspection is required at any time other than during the work hours identified, contractor shall notify the Construction Manager (or shall make such request for overtime inspection at the office of the Sanitary District) at least one (1) hour prior to the end of the work day. A fee shall be charged for overtime inspection and shall be determined as follows: the Inspector's hourly rate of pay in effect at that time shall be doubled; such double-time rate shall then be multiplied by a minimum chargeable time of two (2) hours. If the Inspector is required to stay on the job more than two hours, the double-time rate



shall be paid for each hour thereafter; portions of hours shall be charged as a full hour. Such costs shall be withheld from the succeeding monthly progress payment.

Any work in Section 01010, **SUMMARY OF WORK**, specifically required to be performed outside the normal working hours is excluded from the provisions of this paragraph. The District may also exclude other work performed outside the normal working hours from the provisions of this paragraph.

The Contractor shall notify the Construction Manager at least 24 hours prior to any work outside the normal working hours defined above for work planned on weekends or holidays.

Such costs shall be withheld from the succeeding monthly progress payment. Any work in Section 01010, **SUMMARY OF WORK**, specifically required to be performed outside the normal working hours is excluded from the provisions of this paragraph.

### ***1.08 DUST CONTROL***

During the performance of all Work under this Contract, the Contractor shall assume all responsibility for dust control and shall furnish all labor, equipment, and means required to carry out proper and efficient measures wherever and whenever dust control is necessary to prevent the Contractor's operations from producing dust damage and nuisance to persons and property.

The Contractor shall implement Bay Area Air Quality Management District (BAAQMD) basic control measures for dust control, including:

- A. Maintain dust control within the site and provide adequate measures to prevent a dust problem for neighbors. Use water sprinkling, temporary enclosures, and other suitable methods to limit the rising of dust and dirt. Dust control will be adequate to ensure that no visible dust clouds extend beyond the project boundaries or extend more than 50 feet from the source of any onsite project construction activities.
- B. Load trucks in a manner that will prevent materials or debris from dropping on streets. Trim loads and remove all material from shelf areas of vehicles to prevent spillage. Take precautions when necessary to avoid creating dust and litter by watering the load after trimming and by promptly sweeping the pavement to remove dirt and dust.
- C. Cover all trucks hauling soil, sand, and other loose materials.
- D. Pave, apply water, or apply nontoxic soil stabilizers or rock on all unpaved access roads, parking areas, and staging areas at construction sites.
- E. Sweep daily with water sweepers all paved access roads, parking areas, and staging areas at construction sites.

- F. Sweep streets daily with water sweepers if visible soil material is carried onto adjacent public streets.
- G. Enclose, cover, water, or apply nontoxic soil binders to exposed stockpiles (dirt, sand, etc.).
- H. Limit traffic speeds on unpaved road surfaces to 15 miles per hour.
- I. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- J. Replant vegetation in disturbed areas as quickly as possible.

Unless the construction dictate otherwise, and unless otherwise approved by the Construction Manager, the Contractor shall furnish and operate a self-loading motor sweeper with spray nozzle at least once each working day to keep paved areas acceptably clean whenever construction, including restoration, is incomplete.

If the contractor does not provide and/or conduct dust control as required above or otherwise approved in writing by the Construction Manager, the District has the right to contract such services separately and withhold those costs from the contractor.

Any claims resulting from dust damage or nuisance shall be borne solely by the Contractor.

### ***1.09 FIRE EXTINGUISHER***

Sufficient number of fire extinguishers of the type and capacity required to protect the Work and ancillary facilities, shall be provided and maintained by the Contractor in readily accessible locations.

### ***1.10 USE OF EXPLOSIVES***

The use of explosives is prohibited.

### ***1.11 REMOVED MATERIALS***

All concrete, paving, reinforcing steel, fencing materials, rock, soil, strips, and other waste material and construction debris shall be removed from the site by the Contractor and disposed of in accordance with applicable regulations and laws.

### ***1.12 CONSTRUCTION CLEANING***

Throughout the period of construction the Contractor shall keep the Work site; including work, storage, parking, and employee areas; free and clean of all rubbish and debris, and shall promptly remove from the site, or from property adjacent to the site of the Work, all unused and rejected materials, surplus earth, concrete, plaster, and debris. In particular the Contractor shall keep the site clean to maintain safe access and to avoid fire hazard.

### ***1.13 NOISE ABATEMENT***

- A. Operations at the Worksite shall be performed so as to minimize unnecessary noise. Special measures shall be taken to suppress noise during night hours, if night work is specified under this contract. Noise levels due to construction activity shall not exceed 75-dBA.
- B. The District Construction Manager will be responsible for responding to noise complaints during the construction phases. The name and phone number of the District Construction Manager will be conspicuously posted at construction areas and on all advanced notifications. This person will take steps to resolve complaints, including periodic noise monitoring, if necessary. Results of noise monitoring will be presented at regular project meetings with the project contractor, and the Construction Manager will coordinate with the contractor to modify any construction activities that generated excessive noise levels.
- C. Contractor will be required to implement appropriate noise controls to reduce daytime construction noise levels to meet the 75-dBA daytime speech interference criterion. For nighttime construction, all worksites located within 2,000 feet of any noise-sensitive receptors will be required to implement appropriate noise controls to maintain noise levels at or below 60-dBA or a 50-dBA nighttime sleep interference criterion at the closest sensitive receptors.
- D. Noise controls could include any of the following, as appropriate:
  - 1. Best available noise control techniques (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) will be used for all equipment and trucks in order to minimize construction noise impacts.
  - 2. If impact equipment (e.g., jack hammers, pavement breakers, and rock drills) is used during project construction, hydraulically or electric-powered equipment will be used wherever feasible to avoid the noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed-air exhaust will be used. External jackets on the tools themselves will be used, where feasible. Quieter procedures, such as drilling rather than impact equipment, will be used whenever feasible.
  - 3. Where shoring of pipeline trenches or pits is required, alternative methods such as trench boxes shall be utilized to the extent feasible to avoid noise impacts associated with sheetpile driving. If sheetpile driving is required, sonic or vibratory pile drivers will be used instead of impact pile drivers if feasible (sonic pile drivers are only effective in some soils). Any sheetpile driving activities shall be prohibited during the evening and nighttime hours (7 p.m. to 7 a.m.).

4. Operation of equipment requiring use of back-up beepers will be avoided near sensitive receptors to the extent feasible during nighttime hours (10 p.m. to 7 a.m.).
5. Stationary noise sources will be located as far from sensitive receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) will be used to ensure local noise ordinance limits are met. Enclosure opening or venting will face away from sensitive receptors. If any stationary equipment (e.g., ventilation fans, generators, dewatering pumps) is operated beyond the time limits specified by the pertinent noise ordinance, this equipment will conform to the affected jurisdiction's pertinent day and night noise limits.
6. Material stockpiles as well as maintenance/equipment staging and parking areas will be located as far as feasible from residential and school receptors.
7. If construction within 100 feet of school classrooms or childcare facilities must occur when school is in session, interior noise levels in classrooms will not exceed 60 dBA if possible to avoid speech interference problems
8. Proposed jack-and-bore pits will be located as far from sensitive receptors as technically feasible. If ventilation fans, dewatering pumps, or generators are required as part of this type of pipeline crossing, such equipment will comply with daytime and nighttime noise limits specified above.
9. Wherever necessary, temporary or permanent noise barriers will be erected to maintain construction noise levels at or below the 70-dBA daytime speech interference criterion and the 50-dBA nighttime sleep interference criterion.
10. Haul truck operations shall be restricted to designated haul routes to the extent feasible and will be prohibited during the more noise-sensitive nighttime hours (10 p.m. to 7 a.m.)
11. Internal combustion engines used on the Work shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated without a muffler.

#### ***1.14 DRAINAGE CONTROL***

In excavation, fill, and grading operations care shall be taken to disturb the pre-existing drainage pattern as little as possible. Particular care shall be taken not to direct drainage water onto private property or into streets or drainage ways inadequate for the increase flow. Drainage means shall be provided to protect the Work.

#### ***1.15 EROSION CONTROL***

- A. All excavated areas shall be provided with temporary erosion control measures.

- B. Temporary erosion control shall be required for all areas where natural ground cover is disturbed, all temporary excavation stockpiles, including structures and trench excavations.
- C. Erosion control shall be by means of filter fabric fences or hay bales placed to completely circumvent the down-slope side of any excavated stockpile.
- D. Protected areas shall be regularly inspected and maintained by the Contractor during the course of the work.
- E. All excavations, spills, and waste materials shall not be placed in areas subject to washout, flooding or natural drainage.
- F. See Section 01060-1.03, Storm Water Quality Controls, and Section 01070, Water Quality Protection for additional requirements

### ***1.16 WARNING DEVICES AND BARRICADES***

The Contractor shall adequately identify and guard all hazardous areas and conditions by visual warning devices and, where necessary, physical barriers. Such devices shall, as a minimum, conform to the requirements of Cal/OSHA.

The Contractor is responsible for providing and maintaining barricades necessary to prevent accidental falls through any unattended open hatches or trenches, or entrances into potentially hazardous work areas in the Contractor's work area.

### ***1.17 TRAFFIC REGULATIONS***

#### **A. General**

The Contractor shall take all necessary steps to minimize inconvenience to the general public throughout all work under this Contract. No driveways or private roads shall be blocked without notifying the property owner and access must be restored during all non-working hours. Safe access must be maintained for pedestrian traffic throughout the work area at all times.

At least one lane of traffic in each direction must be kept open at all times unless prior approval is provided by the District and Contra Costa County which has authority for the right-of-way. No roads shall be blocked or made inaccessible, due to the Contractor's work, without prior written approval of the District and Contra Costa County. More stringent requirements may be imposed in the right-of-way permits.

The Contractor shall not block or obstruct fire lanes at any time.

The Contractor shall adopt all practical means to minimize interference to traffic and inconvenience, discomfort, or damage. The Contractor shall protect against damage, any pilling, duct or structures crossing trenching or encountered in the

work and shall be responsible for any damage done to such structures or damage therefrom. The Contractor shall support or replace, any such structures without delay and without any additional compensation, to the entire satisfaction of the Construction Manager. All obstructions to traffic shall be guarded by flagmen as required and by barriers and illuminated at night. The Contractor shall be responsible for all damage to persons and property directly or indirectly caused by its operations, and under all circumstances the Contractor shall comply with the regulations of the District and County, and the laws and regulations of the State of California, relative to safety of persons and property and the interruption of traffic and the convenience of the public within the respective jurisdiction, and the Contractor shall be solely responsible for any damages caused by failure to provide proper safety.

B. Haul Routes

In addition to any haul routes that may be designated in the Contract Documents, or at the preconstruction conference, the Contractor shall furnish evidence that the Public Agency(ies) which has authority for the right-of-ways proposed to be utilized by the Contractor for haul routes has approved the proposed route(s) for all construction traffic created by the Project. Upon approval, the Contractor shall strictly adhere to that route(s) only, unless written permission is obtained from such Public Agency(ies) to change the route(s).

C. Traffic Control

Traffic control shall be in accordance with the California Manual of Uniform Traffic Control Devices. The Contractor shall submit for approval, by the District and Contra Costa County, its traffic control plans prior to work on public streets.

Traffic control shall include signs, warning lights, reflectors, barriers, and other necessary safety devices and measures, including sufficient flaggers to direct vehicular traffic through the construction areas.

No material or equipment shall be stored/parked where it will interfere with the free and safe passage of public traffic, and at the end of each day's work, and at other times when construction operations are suspended for any reason, the Contractor shall remove all equipment and other obstructions from the public right-of-way.

Should the Contractor appear to be negligent in furnishing warning and protective measures, as above provided, the Construction Manager may direct attention to the existence of a hazard, and the necessary warning and protective measures shall be furnished and installed by the Contractor at its expense.

## ***1.18 ROADS AND FENCES***

Roads subject to interference by the prosecution of the work covered by this Contract shall be kept open, and fences subject to interference shall be maintained by the Contractor

during the work and shall be replaced to their original condition unless specifically shown otherwise on the Drawings. Such signs and barricades as are required by local laws and as necessary for the safe prosecution of the Work shall be provided.

Excavated dirt shall not be stored on roads, paths, or planted areas. Care shall be taken to protect improvements.

### ***1.19 Parking and staging areas (NOT USED)***

### ***1.20 TREES AND SHRUBS***

Except as noted on the plans, the Contractor shall not remove trees or shrubs without authorization of the Construction Manager. Injuries to tree roots and limbs shall be avoided. No roots shall be cut or limbs pruned, without prior notification to and review of Contractor's proposed methods by the Construction Manager.

### ***1.21 OFFICE OF CONTRACTOR AT SITE***

During the performance of this Contract, the Contractor may maintain a suitable office at the site of the Work which shall be the headquarters of a representative authorized to receive drawings, instructions, or other communications or articles from the Construction Manager or the District; and any such thing tendered to the representative or delivered at the Contractor's office at the site of the Work in the representative's absence shall be deemed to have been received by the Contractor.

### ***1.22 CONTRACTOR'S WORK AND STORAGE AREA***

The Contractor shall make its own arrangements for staging, storage and shop areas necessary for the proper execution of the work.

The Contractor's construction equipment, vehicles, and materials shall not remain in public streets during non-working hours. It shall be the responsibility of the Contractor to transport and store such items at the Contractor's own facility or within construction easements on nonpublic areas at the end of each workday.

### ***1.23 Construction manager's field office (not used)***

### ***1.24 PHOTOGRAPH AND VIDEO RECORDING OF SITE CONDITIONS***

Existing conditions throughout the project site shall be photographed and videotaped by Contractor before starting construction. Recording shall include and show every detail of existing location, including the current condition of the curb, gutter, sidewalk, landscaping, streetlights, and structures near the project including backyards, face of buildings, canopies, shades, decking, fences, concrete, irrigation systems, driveways, canals, access roads, plants and landscaping, and any other features within the limits of work, including Contractor staging areas. Photos and videotape shall be performed in the presence of the Construction Manager.

The Contractor shall provide additional photos and video recording as deemed necessary by the Construction Manager at no additional cost to the Owner.

The Contractor shall not start any work on site until the photos and video images are submitted and approved by the Construction Manager.

### ***1.25 LIMITATIONS ON EXHAUST EMISSIONS***

To limit exhaust emissions from diesel powered equipment, the Contractor will incorporate into the work the following BAAQMD Exhaust Controls requirements:

- A. Use line power instead of diesel generators where feasible at all construction sites where line power is available.
- B. Limit the idling of all mobile and stationary construction equipment to five minutes.
- C. If stationary equipment (such as generators or dewatering pumps) must be operated continuously, locate such equipment at least 100 feet from homes or schools where possible.
- D. Perform low-emissions tune-ups and perform such tune-ups regularly for all equipment, particularly for haul and delivery trucks.
- E. Require use of diesel particulate filters wherever feasible.

### ***1.26 LIMITATIONS ON CONSTRUCTION RELATED VIBRATION CONDITIONS***

If sheetpile driving is utilized in the project, it shall be performed in a manner to reduce the potential for cosmetic damage to adjacent structures during project construction. Impact sheetpile driving equipment shall be operated to maintain a peak particle velocity of less than 1 in/sec at a distance of 20 feet from the trench and in no case shall the peak particle velocity exceed 0.2 in/sec within 10 feet of any adjacent residential structures unless the structure has been inspected and categorized using District environmental standards as having a higher vibration limit.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*\* END OF SECTION \*\*\***



## SECTION 01580

### MATERIAL AND EQUIPMENT

#### PART 1 - GENERAL

##### ***1.01 SALVAGING AND STORAGE OF EQUIPMENT AND MATERIALS***

No salvage of materials is anticipated in this project. All material and items, including all junk or scrap material, removed by the Contractor shall be removed and properly disposed by the Contractor from the site.

##### ***1.02 CONTRACTOR STORAGE AREAS***

The Contractor shall take all responsibility for storage of materials. No equipment for incorporation in the project may be stored in any area subject to natural or man-made flooding.

The Contractor's construction equipment, vehicles, and materials shall not remain in public streets during non-working hours unless approved by the Construction Manager in writing. It shall be the responsibility of the Contractor to transport and store such items at the Contractor's own facility or within construction easements on nonpublic areas at the end of each workday.

Should the Contractor elect to use private property or other property not owned by the District for construction purposes or storage of materials for the Project, the Contractor shall defend, indemnify and hold harmless the District from any claims arising from such storage or use, to the fullest extent permitted by law.

##### ***1.03 HAZARDOUS MATERIALS***

All hazardous materials shall be stored and handled in strict accordance with the Material Safety Data Sheets for the products. Material Safety Data Sheets shall be submitted to the Construction Manager prior to the delivery of materials to the project. The storage and handling of potential pollution causing and hazardous materials, including but not necessarily limited to, gasoline, oil and paint shall be in accordance with all local, state and federal requirements.

##### ***1.04 DISPOSAL OF EXCAVATED MATERIAL***

The Contractor shall be responsible for making its own arrangements for disposal of all excavated material or other materials at a legal disposal site. No soil testing has been performed by the District for this project.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*\* END OF SECTION \*\*\***

## **SECTION 01611 SEISMIC DESIGN REQUIREMENTS**

### **PART 1 - GENERAL**

#### **1.01 Section Includes**

- A. The following primary and secondary structural system elements, non-structural components, and/or equipment supported by structures.
  - 1. Mechanical, electrical, and plumbing equipment and appurtenances.
  - 2. Conduit, piping, cable trays, raceways, ducts and similar systems.
  - 3. Tanks and vessels (include contents), including support systems.
  - 4. Storage racks, suspended ceilings, light fixtures, raised floors, partitions, store-fronts, windows, louvers, architectural features and other non-structural components.

#### **1.02 Referenced Sections**

- A. The following Sections are referenced in this Section
  - 1. Section 05501 – Anchor Bolts and Anchoring Devices

#### **1.03 References**

- A. 2019 California Building Code (CBC)
- B. ASCE 7-16 Design Loads for Buildings and Other Structures

#### **1.04 Definitions**

- A. Engineer of Record: The Engineer responsible for the preparation of Contract Documents.
- B. Specialty Engineer: Structural or Civil Engineer provided by the Contractor licensed in the State where the project is being built responsible for specific elements of the primary structural system, the secondary structural system, non-structural elements and/or equipment supported by structures.

#### **1.05 General Design Requirements**

- A. The seismic design for non-structural components and equipment shall be in accordance with the CBC Chapter, ASCE 7, and the required coefficients and factors for determining the total design seismic forces are provided in the Seismic Design Criteria in Paragraph D below.
- B. Coordinate the layout so that adequate space is provided between items for relative motion. Provide additional supports and restraints between items of different systems when necessary to prevent seismic impacts or interaction.
- C. Seismic forces shall be determined in accordance with the following seismic design criteria:
  - 1. Site-Specific Spectral Response Coefficients
    - a. Short Period Design Spectral Response Acceleration, 5 percent Damped:  $S_{DS} = .39 g$  (where  $g$  is acceleration from gravity)
    - b. 1 Second Period Design Spectral Response Acceleration, 5 percent Damped:  $S_{D1} = 0.28$

2. Site Class: D
3. Importance Factor:  $I_e = 1.5$
4. Seismic Design Category: D, unless noted otherwise
5. Risk Category: IV, unless noted otherwise
6. Component Importance Factor,  $I_p$ :
  - a. Mechanical and Electrical Equipment: Use 1.5.
  - b. Tanks and Tank Anchorage: Use 1.5.
  - c. Components that contain hazardous materials: Use 1.5.
  - d. Components that are required for life safety: Use 1.5.
  - e. Components that must remain functional after an earthquake, such as fire protection sprinkler systems: Use 1.5.
7. Do not use more than 60 percent of the weight of tanks and mechanical and electrical equipment for designing anchors for resisting overturning due to seismic forces.
8. Do not use friction to resist sliding due to seismic forces.

#### **1.06 Design Requirements for Piping, Conduit, and Ducts**

- A. The Contractor is responsible for producing designs for support of piping, conduit, duct or other systems to resist total seismic forces based on the seismic design criteria coefficients specified above, unless shown on the Contract Documents. Except where the technical specifications give specific exemption from resistance of seismic forces, all supports shall be designed to meet seismic criteria.
- B. Where possible, pipes, conduit, and their connections shall be constructed of ductile materials (e.g., copper, ductile iron, steel or aluminum and brazed, welded or screwed connections). Pipes, conduits and their connections, constructed of nonductile materials (e.g., cast iron, no-hub pipe and plastic), shall have the brace spacing reduced to one-half of the spacing allowed for ductile material.
- C. Seismic restraints may be omitted for the following conditions, where flexible connections are provided between components and the associated ductwork, piping and conduit:
  1. Fuel piping less than 1-inch inside diameter.
  2. All other piping less than 2.5-inches inside diameter or all piping suspended by individual hangers 12 inches or less in length from the top of the pipe to the bottom of the structural support for the hanger or electrical conduit less than 2.5-inches trade size.
  3. All rectangular air-handling ducts less than 6 square feet in cross-sectional area or all round air-handling ducts less than 28-inches diameter or all ducts suspended by individual hangers 12 inches or less in length from the top of the duct to the bottom of the structural support for the hanger, where the hangers are detailed to avoid bending of the hangers and their connections.
- D. All trapeze assemblies supporting pipes, ducts and conduit shall be braced to resist the total seismic forces considering the weight of the elements on the trapeze. Pipes, ducts and conduit supported by a trapeze where none of those elements would individually be braced need not be braced if connections to the pipe/conduit/ductwork or directional changes do not restrict the movement of the trapeze. If this flexibility is not provided, bracing will be required when

the aggregate weight of the pipes and conduit exceed 10 pounds/foot. The weight shall be determined assuming all pipes and conduit are filled with water.

- E. As an alternative to designing the supports and anchorage, where an approved national standard provides a basis for the earthquake-resistant design, submit standard, data, and details for piping, conduit, duct or other systems:
  - 1. For ductwork, mechanical piping, process piping and electrical conduits, follow Guidelines for Seismic Restraints of Mechanical Systems by SMACNA modified as follows:
    - a. Seismically brace piping regardless of size or location. Provide transverse braces at all changes in direction and at the end of all pipe runs. Space transverse braces not more than 20 feet apart. Provide longitudinal braces at 40-foot centers.
    - b. Seismically brace all ductwork regardless of size or location. Provide transverse braces at all changes in direction and at each end of run. Space braces not over 20 feet apart. Provide longitudinal braces at 40-foot centers.
  - 2. For fire protection systems, follow NFPA 13 modified as in Paragraph 1.b above. Ensure that no seismic interaction occurs with items of other systems.

### **1.07 Design requirements for Underwater Items**

- A. To allow for water sloshing, design rigid items such as piping or equipment supports for twice the lateral force, computed as if the item were above water.
- B. Design flexible items to accommodate sloshing motions without damage to rigid machinery.
- C. Provide retainers to hold items from falling and damaging rotating equipment below, if bolted connections will fail because of ground motion displacing the supports.

### **1.08 Submittals**

- A. Shop Drawings
  - 1. Submit signed and sealed structural calculations and detailed drawings for the following listed elements and where required in Divisions 2 through 16 of the primary structural system and their attachments, the secondary structural system and their attachments, permanent non-structural components and their attachments, and the attachments and anchorage for all permanent equipment supported by the structures.
- B. Structural calculations and detailed drawings shall be prepared by a Specialty Engineer licensed in the State where the project is being built.
- C. Structural calculations and detailed drawings shall clearly show the total design seismic forces which will be transferred from the elements of the structural system, non-structural components, and/or equipment and their attachments to the primary structure.
- D. The Engineer's review of items within a Specification Section cannot be completed until all related items have been coordinated and submitted for review.
- E. Quality Assurance Submittals
  - 1. Test Reports: Submit test reports for tension testing of anchors.
  - 2. Where required in the equipment specifications in Divisions 2 through 16 submit certification that the equipment itself is designed to resist all internal seismic forces based on the seismic design criteria for the project.

3. Where required in the equipment specifications in Divisions 2 through 16, submit signed and sealed structural calculations and detailed drawings from a specialty Structural or Civil Engineer licensed in the State where the project is being built for the attachments and anchorage to the primary structure.
4. Where required in the equipment specifications in Divisions 2 through 16, submit certification that the attachments and anchorage are designed to resist all seismic forces based on the seismic design criteria for the project.

### **1.09 Quality Assurance**

- A. Qualifications: Contractor is responsible for submitting signed and sealed structural calculations and detailed drawings from a Specialty Structural or Civil Engineer licensed in the State where the project is being built.
- B. Regulatory Requirements: Comply with the State of California adopted and amended versions of 2007 California Building Code (CBC) Chapter 16 - Earthquake Design plus clarifications and additions specified in this Section.

## **PART 2 - PRODUCTS (NOT USED)**

## **PART 3 - EXECUTION**

### **3.01 Field Quality Control**

- A. Site Tests: Tension testing of expansion or adhesive anchors utilized for anchorage shall be done in the presence of the special inspector and a report of the test results shall be submitted. See Specification Section 05501 for additional requirements.
- B. Inspection: Special inspection shall be provided for high strength bolting or bolts installed in concrete. See Specification Section 05501 for additional requirements.

**\*\*END OF SECTION\*\***

## SECTION 01710

### FINAL CLEAN-UP

#### PART 1 - GENERAL

##### ***1.01 FINAL SITE CLEAN-UP***

Upon completion of the Work, and prior to final Acceptance, the Contractor shall remove from the vicinity of the Work all plant, surplus material, and equipment belonging to the Contractor or used under its direction during construction.

When the work includes repair sites or other sewer facility modifications on private property, the final cleanup at each repair site on private property shall take place within two weeks of the completion of the repair and backfill of material at that site.

In addition to general broom cleaning of paved surfaces and rake cleaning of other surfaces of grounds, the following shall be performed at completion of the Work:

- A. Remove waste and debris from the entire site.
- B. Sweep paved areas.
- C. Clean/landscape areas.
- D. Clean storm drains.

##### ***1.02 FINAL BUILDING CLEAN-UP***

On all building projects and wherever else applicable, besides final site cleanup, the following special cleaning shall be performed at completion of the Work:

- A. Putty stains and paint shall be removed from glass; glass shall be washed inside and outside. Care shall be exercised so as not to scratch glass.
- B. Marks, stains, fingerprints, and other soil and dirt shall be removed from painted, decorated, or stained work.
- C. Waxed woodwork shall be cleaned and polished.
- D. Hardware shall be cleaned and polished of all traces; this shall include removal of stains, dust, dirt, paints, and blemishes.
- E. Spots, soil, paint, plaster, and concrete shall be removed from tile; tile work shall be washed afterwards.

- F. Fixtures, equipment, and visible piping and ducts shall be cleaned and stains, paint, dirt, and dust shall be removed.
- G. Temporary floor protections shall be removed; floors shall be cleaned, waxed, and buffed.
- H. Dust, cobwebs, and traces of insects and dirt shall be removed.

Marred surfaces shall be repaired, patched, and touched up to specified finish to match adjacent surfaces.

All interior spaces including inside cabinets shall be vacuum cleaned.

Air handling filters and light bulbs shall be replaced if units were operated during construction. Ducts, blowers and coils shall be cleaned if air-handling units were operated without filters during construction.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*\* END OF SECTION \*\*\***



## SECTION 01720

### PROJECT RECORD DOCUMENTS

#### PART 1 - GENERAL

##### *1.01 Summary*

- A. Section contains instructions for creating and maintaining Project Records.

##### *1.02 RECORD DOCUMENTS*

- A. Maintain at the Project site, available to the District and Construction Manager, one (1) copy of the Contract Documents, shop drawings and other submittals, in good order.
  - 1. Mark and record field changes and detailed information contained in submittals and Change Orders.
  - 2. Record actual depths, horizontal and vertical location of underground pipes, duct banks and other buried utilities. Reference dimensions to permanent surface features.
  - 3. Identify specific details of pipe connections, location of existing buried features located during excavation, and the final locations of piping, equipment, electrical conduits, manholes, and pull boxes.
  - 4. Identify location of spare conduits including beginning, ending and routing through pull boxes, and manholes. Record spare conductors, including number and size, within spare conduits, and filled conduits.
  - 5. Provide schedules, lists, layout drawings, and wiring diagrams.
  - 6. Make annotations with erasable colored pencil conforming to the following color code:
    - a. Additions: Red
    - b. Deletions: Green
    - c. Comments Blue
    - d. Dimensions: Graphite
- B. Maintain documents separate from those used for construction. Label documents "RECORD DOCUMENTS."
- C. Record Documents shall be updated at least once each week and shall be available to the Construction Manager for review. Keep documents current. Record required information at the time the material and equipment is installed and before permanently concealing.

- D. Deliver Record Documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor prior to request for Final Payment.
- E. Record documents shall be available for the Construction Manager to review to ascertain that changes have been recorded.
- F. Failure of the Contractor to keep current with the updating of the Record Documents shall be grounds for withholding monies from partial payment estimates as specified in Section 00700-8.03B, OTHER WITHHOLDS.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**\*\*\* END OF SECTION \*\*\***

## SECTION 01740

### WARRANTIES AND BONDS

#### PART 1 - GENERAL

##### ***1.01 GUARANTEE OF WORK***

The Contractor hereby agrees to make, at its own expense, all repairs or replacements necessitated by defects in materials or workmanship, supplied under terms of this Contract, and pay for any damage to other works resulting from such defects, which becomes evident within one (1) year after the date of the Substantial Completion date of the Project, or Acceptance date of the Project for items of work listed on the Punch List(s). or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents. The Contractor's guarantee applies to all work and materials provided by subcontractors or manufacturers of packaged equipment components. The Contractor also agree to indemnify, defend, and hold the District harmless from liability of any kind arising from damage due to defects.

Specific items of equipment or work may be placed in continuous service by the District prior to the Substantial Completion of the Project. At the District's discretion, the specific items may be accepted as Substantially Complete, commencing the warranty period for those specific items.

The Contractor shall execute and submit a completed Warranty Form in the format as appended to this section for the Work, and any portion of the Work possessed in accordance with Section 00700-3.04, **DISTRICT'S RIGHT TO USE OR OCCUPY**. The Warranty Form shall be submitted prior to the Substantial Completion date or the final acceptance of the project or within five (5) days of the occupancy or use of a portion of the Work, whichever is applicable.

The Contractor shall, upon the receipt of notice in writing from the District, promptly make all repairs arising out of defective materials, workmanship, or equipment. The District is hereby authorized to make such repairs, and the Contractor and its Surety shall be liable for the cost thereof, if ten (10) days after giving of such notice to the Contractor, the Contractor has failed to make or undertake the repairs with due diligence. In case of emergency, where in the opinion of the District delay could cause serious loss or damage, repairs may be made without notice being sent to the Contractor, and the expense in connection therewith shall be charged to the Contractor, and its Surety shall be liable for the cost thereof.

Prior to the expiration of the Warranty period, the District reserves the right to hold a meeting and require the attendance of the Contractor. The purpose of the meeting is to review warranties, bonds and maintenance requirements and determine required repair or replacement of defective items.

For the purpose of this paragraph, Acceptance of the Work or a portion of the Work by the District, shall not extinguish any covenant or agreement on the part of the Contractor to be performed or fulfilled under this Contract which has not, in fact, been performed or fulfilled at the time of such Acceptance. All covenants and agreements shall continue to be binding on the Contractor until they have been fulfilled.

The District and the Contractor agree that warranty on the parts of the work possessed and used by the District in accordance with Section 00700-3.04, **DISTRICT'S RIGHT TO USE OR OCCUPY**, shall commence on the date that the District takes possession of such Work and so notifies the Contractor in writing. The District and the Contractor further agree that such possession, and use of the work shall not be deemed as Substantial Completion or Acceptance of any other part of the Work.

If, after installation, the operation or use of the materials or equipment furnished under this Contract proves to be unsatisfactory to the Construction Manager or District, the District shall have the right to operate and use such materials or equipment until it can, without damage to the District, be taken out of service for correction or replacement. Such period of use of the defective materials or equipment pending correction or replacement shall in no way decrease the Warranty Period. Warranty Period for equipment shall be extended by the number days from the date the equipment is found by the District to be non-functional or defective to the date the contractor repairs and makes fully operational the same equipment.

Nothing in this Section shall be construed to limit, relieve or release the Contractor's, subcontractor's and equipment supplier's liability to the District for damages sustained as the result of latent defects in the equipment furnished shall it be deemed to be a waiver by the District of any rights or remedies, or time limits in which to enforce such rights or remedies, it may have against the Contractor, subcontractors, or suppliers of the equipment to be furnished under these Specifications.

**WARRANTY FORM**

**Warranty For**

\_\_\_\_\_ (Project/Component) \_\_\_\_\_

\_\_\_\_\_ (Location) \_\_\_\_\_

We hereby guarantee the \_\_\_\_\_ (Project/Component) \_\_\_\_\_ that we have constructed for a period of one (1) year from \_\_\_\_\_ (Date) \_\_\_\_\_ the date of acceptance of the work/substantial completion by the \_\_\_\_\_ Rodeo Sanitary District \_\_\_\_\_.

The following are excluded from the provisions of this warranty:

We agree that if any of the equipment should fail due to any reason other than improper maintenance or improper operation, if any pipe or appurtenances should develop leakage, or if any settlement of fill or backfill occurs, or should any portion of the work fail to fulfill any of the requirements of the Specifications, we will, within ten days after written notice of such defects, commence to repair or replace the same together with any other work which may be damaged or displaced in so doing.

In the event of our failure to comply with the above with the above mentioned conditions within a reasonable time after being notified, or should the exigencies of the case require repairs or replacements to be made before we can be notified or respond to notification, we do hereby authorize the Rodeo Sanitary District to proceed to have the defect repaired and made good at our expense, and we will pay the cost therefore upon demand.

The warranty provided herein shall not be in lieu of, but shall be in addition to any warranties or other obligations otherwise imposed by the Contract Documents and by law.

Contractor: \_\_\_\_\_

Signed: \_\_\_\_\_

Titled: \_\_\_\_\_

Date: \_\_\_\_\_

**\*\*\* END OF SECTION \*\*\***

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**SECTION 02055  
DEMOLITION AND SITE PREPARATION**

**PART 1 - GENERAL**

**1.01 Summary**

A. Section Includes:

1. Demolition and site preparation includes all demolition, and clearing and grubbing work.

**1.02 References**

A. The following documents are a part of this section insofar as they are specified and modified herein. In case of conflict between the requirements of this Section, and the following documents, the requirements of this section shall prevail:

<u>Reference</u>	<u>Title</u>
California Department of Transportation (Caltrans)	Standard Specifications, Section 4 - Scope of Work
California Department of Transportation (Caltrans)	Standard Specifications, Section 4-1.13 - Cleanup
California Department of Transportation (Caltrans)	Standard Specifications, Section 15 - Existing Facilities
California Department of Transportation (Caltrans)	Standard Specifications, Section 17-2 - Clearing and Grubbing

**1.03 Definitions**

A. Demolition: consists of furnishing transportation, labor, materials, and equipment to:

1. Remove existing construction shown to be removed.
2. Remove and replace existing construction and/or finishes as required to provide access to perform other work included in this contract.
3. Store and protect items intended for reuse.
4. Assume ownership of debris and unwanted materials; remove from the site and dispose of legally.
5. Remove unwanted fixed equipment, including without limitation unwanted lockers, shelving, hoods, equipment, machinery, and devices built into or attached to the building.
6. Remove all loose items including rubbish, debris, furniture, etc.

B. Clearing and Grubbing: consists of furnishing transportation, labor, materials, and equipment to:

1. Remove and dispose of all rubbish, debris, and other objectionable material from within the limits of the project as specified.
2. Provide dust alleviation and control during the course of the work.
3. Comply with any required abandonment of system facilities, including cutting, capping and slurry filling of abandoned pipelines.

4. Provision of all materials, equipment and apparatus not specifically mentioned herein or noted on the plans, but which are obviously necessary to complete the work specified.
5. Comply with any required salvage of existing facilities.

#### **1.04 System Description (Not Used)**

#### **1.05 Submittals (Not Used)**

#### **1.06 Quality Assurance**

- A. General: All work shall be performed in accordance with the local building codes, State Industrial Safety Orders and requirements of the Occupational Safety and Health Act requirements.
- B. Schedule: Demolition must be scheduled to allow all existing services and utilities to remain in continuous operation. No interruption in operation will be permitted without previous authorization from the Owner's Representative.
- C. Prior to excavation procedures, the Contractor shall perform an above grade survey of existing utilities and contact Underground Service Alert (USA) North 811 to perform a comprehensive evaluation of all known below grade utilities.
  1. Reference the USA California Excavation Manual for Best Practices and excavation law/guidelines.
- D. Protection
  1. Demolition shall be performed in such a manner as to not harm adjacent structures, equipment, existing landscaping or natural vegetation.
    - a. The Contractor shall assume full responsibility for such disturbance.
    - b. All costs of any such repair, rehabilitation, or modifications shall be solely borne by the Contractor.
  2. The Contractor shall provide such protection as may be required to transfer material to the ground.
    - a. Throwing, dropping, or permitting the free fall of material and debris from heights which would cause damage to other work, existing structures, or equipment; undue noise or nuisance; or excessive dust is prohibited.
- E. Noise and Dust Control
  1. Perform work in accordance with requirements in Division 1.
  2. Provide temporary partitions to control dust and noise and exclude unauthorized persons.
  3. Perform work in a manner to cause least disturbance to improvements and least damage to work to remain.
  4. Maintain adequate means of safe, clear egress for local occupants and commuters.
  5. Employ all available techniques for construction noise abatement. Use remote, well-muffled air compressors and newest noise suppressed pneumatic and electric tools.

#### **1.07 Delivery, Storage, and Handling (Not Used)**

#### **1.08 Project/Site Conditions**

- A. The Contractor shall determine the actual condition of the site as it affects the work.



## **1.09 Warning**

- A. The Contractor is advised that work under this Section may be hazardous. The Contractor is to take all necessary precautions to ensure the safety of workers and property. Removal of and/or working in areas containing even minor amounts of hazardous material including without limitation, asbestos, lead-based paint, PCBs or other hazardous materials requires special precautions, knowledge and procedures. If hazardous material is suspected, notify the Engineer.

## **PART 2 - PRODUCTS (NOT USED)**

## **PART 3 - EXECUTION**

### **3.01 General**

- A. The Contractor shall adhere to all demolition and site preparation requirements set forth in the Contract Documents and as directed by the District.
- B. The Contractor shall notify the Owner's Representative when demolition of existing is completed and dispose of refuse materials in an appropriate manner.

### **3.02 Performance**

#### **A. Demolition**

1. Removal of Construction in areas to receive New Work
  - a. In areas intended to receive new work and/or finishes, remove all unwanted non-structural partitions, furred walls, chases, suspended or furred ceilings, doors, windows, and finishes.
  - b. Remove all unwanted mechanical and electrical work (whether shown or not) that is not wanted and is not needed to serve other areas that is in, on, or concealed behind work being removed. Cap off or terminate all mechanical or electrical work in accordance with the requirements of Divisions 15 and 16.
  - c. Contractor shall protect mechanical and electrical work that serves other areas. Relocate concealed mechanical and electrical work that is required to preserve service to other areas.
  - d. Remove structural work designated for removal. Take precautions not to damage structural work intended to remain. Where temporary shoring is needed, the Contractor shall submit a design prepared by an appropriately licensed engineer for review before proceeding.
  - e. If structural elements are encountered that were not shown, the Contractor shall protect them from damage and report their presence to the Engineer.
2. Removal of Limited Portions of Existing Construction to Permit Modifications
  - a. Provide careful, selective cutting and removal of existing construction as required to permit relocation or modification of partitions, doors, or openings. Cut and remove the least amount of work possible except when a larger area needs to be removed to permit strengthening existing construction or when required to remove finishes to a natural break line such as a corner or change in material.
  - b. Protect existing construction to remain with temporary coverings.
  - c. Treat existing mechanical, electrical, or structural work as described in other parts of this Section.
  - d. When modifications are complete, replace removed work with new construction and finishes to match adjacent existing work. Standards of material and workmanship shall be in

accordance with other portions of this Specification or if not covered then in accordance with current practice for this class of work. Salvaged materials may be used for replacement only with the approval of the Engineer.

3. Removal of Existing Construction to Provide Access to Perform Work
  - a. Provide careful selective cutting and removal of existing construction where required to permit installation of new concealed mechanical or electrical work, or installation of equipment, fixtures or devices.
  - b. Treat existing mechanical, electrical, or structural work as described in other parts of this Section.
  - c. Replace and/or patch removed construction and finishes in accordance with other parts of this Section.
4. Protection of Work to Remain
  - a. Protect all work to remain. Repair damage with materials, workmanship, and finishes matching existing work when new.
5. Cutting Holes in Concrete and/or Concrete Unit Masonry
  - a. The Contractor is cautioned that electrical conduits and reinforcing that are not shown on drawings may be concealed in concrete CMU construction. Use electronic detection equipment to locate concealed items before cutting holes. Take all required precautions to avoid damage to existing conduits or reinforcing.
  - b. New openings in existing concrete walls or slabs may be saw cut to opening perimeter lines where drawings do not call for adding reinforcing trim bars to strengthen openings. Do not run saw kerfs past corners of openings. Complete concrete removal at opening corners by chipping and grinding. Take all required precautions to avoid water damage to existing construction or the Owner's property.
  - c. Where drawings call for adding reinforcing trim bars to strengthen openings, limit saw cutting to a depth of 3/4 inch to avoid cutting existing reinforcing steel. Carefully chip out concrete to avoid damaging existing reinforcing steel, which is to remain.
  - d. Use chipping guns to chip out small holes for pipes or conduits. Proceed carefully to avoid damage to concealed conduits. Core drilling is permitted only at the Contractor's risk and only with the Engineer's approval. If core drilling is used, the Contractor shall: 1) use electronic detection equipment to locate conduit before drilling, 2) take precaution to avoid water damage to existing construction or the Owner's property, and 3) replace, at his own expense, any damaged electrical or signal wiring or conduits.
6. Remove Unwanted Fixed Equipment
  - a. Remove unwanted fixed and built-in equipment, machinery, machinery bases, and similar items whether shown or not. Protruding bolts or attachment devices shall be cut to be flush with existing surfaces.
  - b. If items are designated on the Drawings to be salvaged, remove them carefully without causing damage. Equipment used in chemical feed systems shall be cleaned and flushed with potable water prior to removal. Contractor to provide Owner with 14 days' notice to tag all items Owner wants to be salvaged. Deliver items to be turned over to the Owner at a storage location designated by the Owner.
7. Hazardous Materials
  - a. If hazardous materials are discovered, comply with paragraph 1.01 of this Section and all applicable laws.

## 8. Removal and Disposal of Material

- a. Store debris in suitable covered containers or stockpiles located where directed by the Engineer and remove from site when full or complete. Burning on the site is not permitted.
- b. Removed material (other than material to be reused or salvaged) shall become the property of the Contractor who shall remove it from the site and dispose of it in a legal manner.

## B. Clearing and Grubbing

1. The site of all open-cut excavations and areas to be cleared as indicated on the Plans shall be cleared and grubbed prior to excavation.
  - a. Unless otherwise specified, the Contractor shall remove obstructions such as brush, trees, logs, roots, root balls, heavy sod, vegetation, rock, stones larger than 6 inches by any dimension, broken or old concrete and pavement, debris, and structures.
2. Clearing and grubbing in areas of structural improvement such as concrete structures shall be cleared and grubbed as above except that obstructions larger than 2 inches in any dimension shall be removed.
3. Clearing and grubbing shall be done in accordance with Caltrans Standard Specifications Section 16, as amended below:
  - a. Ground cover of every type, including trees, shrubs, weeds, and vegetation of any nature, shall be removed to the full depth of the root system
  - b. Weed removal shall be accomplished by method(s) that result in complete removal of the weed. Method used must be approved by the Engineer. Surface and crack cleaning shall be accomplished by sweeping, and not by air blowers.
  - c. Prior to any cutting or filling, the site shall be stripped to a sufficient depth to remove all vegetation and other deleterious materials. The minimum stripping depth shall be six inches (6"). The site shall be stripped to such greater depth, as the Engineer or the project geotechnical engineer may consider necessary to remove materials that, in their opinion, are unsatisfactory. The stripping material shall either be removed from the site or stockpiled for reuse later as topsoil, where approved by the Engineer. Use of stripped material as engineered fill is strictly prohibited.
  - d. Contractor shall trim overhanging limbs that may be in conflict with paving and other construction activities. Tree, roots, and bush pruning shall be performed by a certified arborist and in accordance with "Pruning Standards," published by the Western Chapter of the International Society of Arboriculture. The certified arborist shall be approved in advance by the Engineer, and all pruning shall be done as directed by and in the presence of the Engineer. Tree limbs damaged by Contractor activities shall be trimmed by certified arborist as described above.
  - e. Where trees are removed, the soils loosened by the roots shall be over-excavated at least to the bottom of the disturbed zone and to the width of the equipment.
  - f. Spoil resulting from clearing, grubbing, and stripping operations shall be removed from the entire limits of work and properly disposed of by the Contractor.
  - g. Materials resulting from clearing, grubbing, and stripping operations shall become the property of the Contractor, to be properly removed from the work site and disposed of from the project site in a lawful manner, at no additional expense to the contract.

## C. Equipment and Piping Removal

1. Include removal of existing mechanical and electrical work that is to be abandoned and is contained in construction to be removed whether or not the mechanical and electrical work is

shown. Disconnect and cap off utilities in accordance with applicable codes and safety regulations.

2. If indicated on the plans or in these specifications, include the cost of removing and disposing of hazardous material including without limitation asbestos or asbestos-containing material, lead-containing paint, PCBs or other hazardous materials. If the presence of a hazardous material is suspected, notify the Engineer and the have material tested. If material is identified as hazardous, retain qualified and licensed specialist to remove and dispose of it legally.
3. All equipment and piping to be removed shall be properly disconnected from structures, piping, electrical, and instrumentation systems.
4. The Contractor shall do all resurfacing and other work as necessary to comply with the above requirements.
5. If illegal electrical wiring is encountered such as "BX" or non-metallic sheathed cable, notify the Engineer.
6. Removal of any existing and operational culverts shall be restored in kind at the Contractor's expense unless proven that the culver condition was previously compromised by age, corrosion or other cause unrelated to construction activities. The Owner's Representative or Inspector shall be present during excavation and trenching of all culvert crossings.

#### D. Pavement Removal

1. All pavements and concrete pads shall be saw-cut on a neat line at right angles to the curb or concrete face. Utilize existing control or expansion joints where possible.

#### E. Utility Interference

1. Where existing utilities interfere with the prosecution of the work, the Contractor shall relocate the utilities. The Contractor shall coordinate with the utility owner and their respective requirements for utility relocation.
2. Where utilities that are not shown pass through construction that must be removed and those utilities serve other areas notify the Engineer a minimum of 72 hours before disrupting service. If rerouting is required to maintain service, the Owner may issue a Change Order to accomplish the required work.
3. Utilities to be abandoned in place shall be filled with flowable grout and capped unless otherwise specified on the Plans.

### 3.03 Salvage

- A. The Owner has the right to salvage any items identified within the project vicinity.
- B. The Contractor shall notify the Owner's Representative no less than five (5) days prior to any salvage or demolition work.
  1. The Owner's Representative will mark items to be salvaged.
  2. The Contractor shall be responsible for properly disconnecting, removal from their foundations, cleaning and storing salvaged items. Salvaged items shall be delivered by the Contractor to a storage location designated by the Owner.
  3. All drop offs must be coordinated with the Owner.

### 3.04 Removed Material and Debris

- A. Where Contractor is directed on the Drawings to "Demolish" or "Remove" material or facilities it is understood that the material will be removed and disposed of offsite unless specifically stated otherwise or directed by the Owner's Representative.

- B. All removed material not designated for salvage and all debris shall become the property of the Contractor and shall be removed from the site.
- C. Materials and debris generated by demolition activities shall not be allowed to accumulate. Debris shall be removed **daily** and disposed of in a manner allowed by law.

### **3.05 Restoration**

- A. Restore adjacent structures and facilities damaged during demolition or other construction to original or better condition.

**\*\*END OF SECTION\*\***

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# SECTION 03315 GROUT

## PART 1 - GENERAL

### 1.01 Summary

- A. The work of this Section includes providing grout other than that required for masonry work.
- B. The following types of grout are included in the work of this Section:
  - 1. Non-Shrink Grout: This type of grout shall be used wherever grout is required, unless another type is specifically indicated.
  - 2. Cement Grout
  - 3. Epoxy Grout
  - 4. Topping Grout and Concrete Fill

### 1.02 References

- A. Except as otherwise indicated, the current versions of the following apply to the work of this Section:

<u>Reference</u>	<u>Title</u>
CRD-C 621	Corps of Engineers Specification for Non-shrink Grout
ASTM C109	Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in or 50-mm Cube Specimens)
ASTM C531	Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical- Resistant Mortars, Grouts, and Monolithic Surfacing
ASTM C579	Test Methods for Compressive Strength of Chemical-Resistant Mortars and Monolithic Surfacing
ASTM C827	Test Method for Early Volume Change of Cementitious Mixtures
ASTM D696	Test Method for Coefficient of Linear Thermal Expansion of Plastics

### 1.03 Submittals

- A. The following shall be submitted in compliance with Section 01300-Submittals:
  - 1. Manufacturer's literature containing instructions and recommendations on the mixing, handling, placement, and appropriate uses for each type of non-shrink and epoxy grouts proposed for use in the work.
  - 2. Certified test results verifying the compressive strength, shrinkage, and expansion properties.

### 1.04 Quality Control

#### A. Field Tests

- 1. When a project is used without documentation, compression test specimens will be taken during construction from the first placement of each type of grout, and at intervals thereafter as selected by the Engineer to insure continued compliance with these specifications.

2. Compression tests and fabrication of specimens for cement grout and non-shrink grout will be performed as specified in ASTM C 109. A set of three specimens will be made for testing at 7 days, 28 days, and each additional time period as appropriate.
  3. Compression tests and fabrication of specimens for epoxy grout will be performed as specified in ASTM C 579, Method B, at intervals during construction as selected by the Owner's representative. A set of three specimens will be made for testing at 7 days, and each earlier time period as appropriate.
- B. The cost of all laboratory tests on grout will be borne by the Owner, but the Contractor shall assist the Owner's Representative in obtaining specimens for testing. However, the Contractor shall be charged for the cost of any additional tests and investigation on work performed which does not meet the specifications. The Contractor shall supply all materials necessary for fabricating the test specimens.

## **PART 2 - PRODUCTS**

### **2.01 Cement Grout**

- A. Cement grout mix design shall satisfy the same requirement as structural concrete, except that cement grout has no large aggregate requirement when the grout thickness is less than 3".

### **2.02 Prepackaged Grouts**

#### **A. Non-Shrink Grout**

1. Non-shrink grout shall be a prepackaged, inorganic, non-gas-liberating, non-metallic, cement-based grout requiring the addition of water. Manufacturer's instructions shall be printed on each bag or other container in which the materials are packaged. The specific formulation for each class of non-shrink grout indicated herein shall be that recommended by the manufacturer for the particular application.
2. Class A non-shrink grouts shall have a minimum 28 day compressive strength of 5000 psi; shall have no shrinkage (0.0 percent) and a maximum 4.0 percent expansion in the plastic state when tested in accordance with ASTM C827; and shall have no shrinkage (0.0 percent) and a maximum of 0.2 percent expansion in the hardened state when tested in accordance with CRD C 621.
3. Class B non-shrink grouts shall have a minimum 28 day compressive strength of 5000 psi and shall meet the requirements of CRD C 621.

#### **B. Application**

1. Class A non-shrink grout shall be used for the repair of all holes and defects in concrete members which are water bearing or in contact with soil or other fill material, grouting under all equipment base plates, and at all locations where grout is specified in the contract documents; except, for those applications for Class B non-shrink grout and epoxy grout indicated herein. Class A non-shrink grout may be used in place of Class B non-shrink grout for all applications.
2. Class B non-shrink grout shall be used for the repair of all holes and defects in concrete members which are not water-bearing and not in contact with soil or other fill material, grouting under all base plates for structural steel members, and grouting railing posts in place.

### **2.03 Topping Grout and Concrete Fill**

- A. Grout for topping of slabs and concrete fill for built-up surfaces of tank, channel, and basin bottoms shall be composed of cement grout. All materials and procedures specified for concrete



in Section 03300-Cast-in-Place Structural Concrete shall apply except as indicated otherwise herein.

- B. Topping grout and concrete fill shall contain a minimum of 564 pound of cement per cubic yard with a maximum water cement ratio of 0.45. Where concrete fill is thicker than 3 inches, structural concrete as indicated in Section 03300-Cast-in-Place Structural Concrete may be used.
- C. Strength: Minimum compressive strength of topping grout and concrete fill at the end of 28 days shall be 4000 psi.

#### **2.04 Curing Materials**

- A. Curing materials shall be as recommended by the manufacturer of prepackaged grouts.

#### **2.05 Consistency**

- A. The consistency of grouts shall be that necessary to completely fill the space to be grouted for the particular application. Dry pack consistency is such that the grout is plastic and moldable but will not flow.
- B. Unless otherwise noted on contract dwgs, grout for base plates and equipment leveling shall have flowable, semi-flowable, and packable viscosities. Flowable and semi-flowable consistencies requires formwork.

#### **2.06 Measurement of Ingredients**

- A. Measurements for cement grout shall be made accurately by volume using containers. Shovel measurement is not an acceptable method of measurement.

### **PART 3 - EXECUTION**

#### **3.01 General**

- A. All surface preparation, curing, and protection of cement grout shall be as required. The finish of the grout surface shall be troweled smooth unless noted otherwise.
- B. Where pre-packaged product is used, the manufacturer's representative shall provide on-site technical assistance upon request.
- C. Base concrete or masonry must have attained its design strength before grout is placed. When bonding to an existing cementitious material is expected, waterblasting or sandblasting to roughen the substrate is required.

#### **3.02 Grouting Procedures**

##### **A. Base Plate Grouting**

1. For base plates, the original concrete shall be blocked out or finished off a sufficient distance below the plate to provide for a grout thickness not exceeding 2x the anchor bolt diameter.
2. After the base plate has been set in position at the proper elevation double nutted on the anchor bolts, the space between the bottom of the plate and the original pour of concrete shall be filled with non-shrink-type grout. The grout shall be placed so there a no voids between the bottom of the base plate and the concrete.

##### **B. Topping Grout**

1. All mechanical, electrical, and finish work shall be completed prior to placement of topping or concrete fill. The base slab shall be given a roughened textured surface by sandblasting or waterblasting to ensure bonding to the base slab.

2. The minimum thickness of grout topping and concrete fill shall be one inch. Where the finished surface of concrete fill is to form an intersecting angle of less than 45 degrees with the concrete surface it is to be placed against, a key shall be formed in the concrete surface at the intersection point. The key shall be a minimum of 3-1/2-inches wide by 1-1/2-inches deep.
3. The base slab shall be thoroughly cleaned and wetted prior to placing topping and fill. No topping concrete shall be placed until the slab is complete free from standing pools or ponds of water. The topping and fill shall be compacted by rolling or tamping, brought to established grade, and floated. Grouted fill for tank and basin bottoms where scraping mechanisms are to be installed shall be screeded by blades attached to the revolving mechanism of the equipment in accordance with the procedures outlined by the equipment manufacturer after the grout is brought to the established grade.
4. Topping grout placed on sloping slabs shall proceed uniformly from the bottom of the slab to the top, for the full width of the placement.
5. The surface shall be tested with a straight edge to detect high and low spots which shall be immediately eliminated. When the topping and fill has hardened sufficiently, it shall be steel troweled to a smooth surface free from pinholes and other imperfections. An approved type of mechanical trowel may be used as an assist in this operation, but the last pass over the surface shall be by hand-troweling. During finishing, no water, dry cement or mixture of dry cement and sand shall be applied to the surface.

**\*\*END OF SECTION\*\***

## SECTION 05120 STRUCTURAL STEEL

### PART 1 - GENERAL

#### 1.01 Summary

A. The work of this section includes providing structural steel and related appurtenances.

#### 1.02 References

<u>Reference</u>	<u>Title</u>
AISC 303	Code of Standard Practice for Steel Buildings and Bridges
AISC S326	Design, Fabrication and Erection of Structural Steel for Buildings
ASTM A36	Structural Steel
ASTM A53	Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless, Grade B
ASTM A283	Low and Intermediate Tensile Strength Carbon Steel Plates, Shapes and Bars
ASTM A307	Carbon Steel Externally Threaded Standard Fasteners, Grade A
ASTM A320	Alloy-Steel Bolting Materials for Low Temperature Service
ASTM A325	High-Strength Bolts for Structural Steel Joints
ASTM A490	Heat-Treated Structural Steel Bolts
ASTM A500	Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes, Grade B
ASTM A501	Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
ASTM A240	Austenitic Stainless Steel, Sheet, Strip, Plate and Flat Bar for Structural Applications, Grade A, Type 304
AWS-B3.0	Welding Procedures and Performance Qualifications
AWS-D1.1	Structural Welding Code – Steel

#### 1.03 Submittals

A. The following shall be submitted in compliance with Section 01330 – Submittal Procedures:

1. Shop drawings, including details, dimensions, details of match markings and all information necessary for fabrication. Drawings shall conform to AISC standards.
2. Welding procedures and welder qualifications.
3. Certificates that steels comply with the indicated standards (“mill certs”).

### PART 2 - PRODUCTS

#### 2.01 Materials

A. Materials for structural steel members and connection shall comply with the Construction Drawings.

## **2.02 Fabrication**

- A. Fabrication shall be in accordance with ANSI/AISC 360 Chapter M and AISC 303. All structural steel welding in off-site fabrication shops shall be continuously inspected by a Certified Special Inspector. The continuous inspection will be waived if the work is done in a shop certified by AISC.

## **PART 3 - EXECUTION**

### **3.01 Installation**

#### **A. General**

1. Structural assemblies and shop and field welding shall meet the requirements of AISC 303.
2. Dissimilar metals shall be protected from galvanic corrosion by means of pressure tapes, coatings or isolators.
3. Structural steel completely encased in concrete need not be galvanized or painted and shall have a clean surface for bonding to concrete.

#### **B. Welding**

1. Welding shall be performed by operators who have been qualified by tests as prescribed by AWS D1.1.
2. Continuous seal welds shall be applied on structural steel designed to be exposed to weather or submerged in water or wastewater. Continuous seal welds shall be applied on both sides of structural steel designed to be submerged in water or wastewater.

### **3.02 Corrosion Protections**

- A. Unless otherwise indicated, all structural steel, including that used in the fabrication of process equipment, shall be surface prepared and coated in accordance with Section 09900 – Protective Coating Systems and shall include the following operations:
1. Exterior and interior edges of flame-cut pieces shall be ground smooth.
  2. Sharp edges and punched holes shall be ground smooth.
  3. Uneven or rough welds shall be ground smooth.

### **3.03 Touch-Up and Repair**

- A. After installation, damaged surfaces of shop-primed structural steel shall be cleaned and touched-up with same material used for shop coat. Prepare surface and recoat per recommendations of Manufacturer's product data sheet.

**\*\*END OF SECTION\*\***

# SECTION 05500 METAL FABRICATIONS

## PART 1 - GENERAL

### 1.01 Summary

A. Miscellaneous metalwork includes the following:

1. Stainless Steel beams, channels and/or angle frames and thresholds with anchors and base plates.
2. Seat Angles, Supports and Brackets.
3. Aluminum Gratings.
4. Floor and Cover Plates.
5. Miscellaneous connections, anchors, bolts, clips, spacers, nuts, washers, shapes and inserts, as required.

B. Related Sections

<u>Section</u>	<u>Title</u>
Section 03315	Grout
Section 09900	Protective Coating Systems

### 1.02 Codes

A. The work of this Section shall comply with the current edition of the California Building Code.

### 1.03 References

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

1. Federal Specifications:

<u>Reference</u>	<u>Title</u>
QQ-F-461 C (1)	Floor Plate, Steel, Rolled
MIL-6-18015	(Ships) Aluminum Planks, (6063-T6)

2. Commercial Standards:

<u>Reference</u>	<u>Title</u>
AISC MO11	Manual of Steel Constructions
ASTM A36	Specification for Structural Steel
ASTM A48	Specification for Gray Iron Castings
ASTM A53	Specification for Pipe, Steel, Black and Hot- Dipped, Zinc-Coated Welded and Seamless
ASTM A123	Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

ASTM A125	Specification for Steel Springs, Helical, Heat Treated
ASTM A153	Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A283	Specification for Low and Intermediate Tensile Strength Carbon Steel Plates, Shapes and Bars
ASTM A307	Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile
ASTM A320	Specification for Alloy-Steel Bolting Materials for Low-Temperature Service
ASTM A489	Carbon Steel Eyebolts
ASTM A569	Specification for Steel, Carbon, (0.15 Maximum Percent) Hot Rolled, Sheet and Strip, Commercial Quality
ASTM A575	Specification for Steel Bars, Carbon, Merchant Quality, M-Grades
ASTM B98	Specification for Copper-Silicon Alloy Rod, Bar, and Shapes
ASTM B210	Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes
ASTM B221	Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes and Tubes
ASTM B438	Specification for Sintered Bronze Bearings (Oil-Impregnated)
ANSI/AWS D1.1	Structural Welding Code - Steel
NFPA 101	Life Safety Code
NAAMM	Metal Stairs Manual

#### **1.04 Quality Assurance**

A. Fabrication and erection of structural steel and miscellaneous metal work shall be in accordance with the latest edition of the AISC "Specification for the Design, Fabrication and Erection of Steel for Buildings".

#### **1.05 Submittals**

A. The following shall be submitted in compliance with Section 01300-Submittals:

1. Shop drawings of including erection drawings, installation instructions, and layout drawings.
  - a. Provide location, type, size and extent of welding and bolted connections and clearly distinguish between shop and field connections.
  - b. Coordinate shop drawings to insure proper mating of assemblies.
2. Anchorage details and structural design calculations. Structural drawings will be sealed by a structural engineer licensed in the State of California.
3. Product data for all materials and components.

4. Test Reports.
  - a. Furnish certified physical and chemical mill test reports for material used for major structural members. Perform all tests in accordance with applicable ASTM Standards.

## **PART 2 - PRODUCTS**

### **2.01 Manufacturers**

- A. Products of the type or model (if any) indicated shall be manufactured by one of the following (or equal):
  1. Aluminum Grating:
    - a. IKG Borden
    - b. Seidelhuber
  2. Steel Gratings:
    - a. Irving Type IWA
    - b. Gary Type GW
  3. Floor and Cover Plates:
    - a. Alcoa C-102 Aluminum Tread Plate
    - b. Reynolds Diamond Tread Plate

### **2.02 Materials**

- A. Materials: Except as otherwise indicated, products fabricated of structural steel shapes, plates and bars shall comply with the requirements of ASTM A 36 or ASTM A283.
- B. Stainless Steel: Stainless steel metalwork and bolts shall be of Type 316 or 316L stainless steel for all corrosive environments.
  1. Rolled shapes, plates, and bars shall conform to the latest edition of the AISC "Manual of Steel Construction" and shall also conform to current ASTM Designation A 36.
  2. Use stainless steel alloy types as follows which conform to ASTM A-167 and ASTM A-276:
    - a. Stainless steel plates and bars shall be Type 304 or Type 316 unless otherwise noted.
    - b. Stainless steel anchor bolts shall be Type 316 unless otherwise shown or specified.
    - c. Stainless Steel structural Tanks shall be Type 304.
    - d. Stainless steel bolts, nuts and washers shall be Type 304 or 316 where connecting or bearing on aluminum.

### **2.03 Fabrication**

- A. Corrosion Protection:
  1. Miscellaneous steel metalwork shall be hot-dip galvanized after fabrication except as otherwise indicated.
  2. Miscellaneous metalwork of fabricated steel, which will be used in a corrosive environment or will be submerged in wastewater, shall be coated in accordance with Section 09900 - Protective Coating Systems.
- B. Welding:

1. Welding shall be by the metal-arc method or gas-shielded arc method as described in the American Welding Society's "Welding Handbook" and supplemented by other standards of the AWS. Qualification of welders shall be in accordance with the AWS Standards.
2. In assembly and during welding, the component parts shall be adequately clamped, supported and restrained to minimize distortion and for control of dimensions. Weld reinforcement shall comply with the AWS Code.
3. Upon completion of welding, weld splatter, flux, slag, and burrs left by attachments shall be removed. Welds shall be repaired to produce a workmanlike appearance, with uniform weld contours and dimensions. Sharp corners of material that is to be painted or coated shall be ground to a minimum of 1/32-inch on the flat.
4. Stainless Steel Electrodes. Perform welding of stainless steel with electrodes and techniques as contained in pertinent AWS A5 Series Specification.

C. Galvanizing:

1. Where galvanizing is indicated, structural steel plates, shapes, bars and fabricated assemblies shall be thoroughly cleaned of rust and scale and shall be galvanized in accordance with the requirements of ASTM A 123.
2. Any galvanized part that becomes warped during the galvanizing operation shall be straightened.
3. Bolts, anchor bolts, nuts and similar threaded fasteners, after being properly cleaned, shall be galvanized in accordance with the requirements of ASTM A 153.

## 2.04 Bolts

A. Bolt Requirements: Bolts shall comply with the following:

1. The nuts shall be capable of developing the full strength of the bolts.
  - a. Threads shall be Coarse Thread Series conforming to the requirements of the American Standard for Screw Threads.
  - b. Bolts and cap screws shall have hexagon heads and nuts shall be Heavy Hexagon Series.
2. The length of all bolts shall be such that after joints are made up, each bolt shall extend through the entire nut, but in no case more than 3 threads beyond the nut.

B. Standard Service Bolts (Not Buried, Corrosive or Submerged):

1. Except where otherwise indicated, bolts and nuts shall be steel and shall be hot-dip galvanized after fabrication.
2. Threads on galvanized bolts and nuts shall be formed with suitable taps and dies such that they retain their normal clearance after hot-dip galvanizing.
3. Except as otherwise indicated herein, steel for bolts, anchor bolts and cap screws shall be in accordance with the requirements of ASTM A 307 Grade A or B, or threaded parts of ASTM A 36.

C. Buried, Corrosive or Submerged Bolts:

1. Unless otherwise indicated, bolts, anchor bolts, nuts and washers, which are buried, submerged, or below the top of the wall inside any hydraulic structure or as indicated on the Drawings shall be of Type 316 stainless steel.

D. Unless otherwise indicated, eyebolts shall conform to ASTM A 489.



## **2.05 Seat Angles, Supports and Brackets**

- A. Seat angles over slide gate guides shall be welded to the guides.
- B. Seat angles for supports for floor plates, clips for precast panels and brackets for piping shall be steel, hot-dip galvanized after fabrication unless otherwise indicated.
- C. For angles used in corrosive, below top of wall inside any hydraulic structure or submerged environments material shall be Type 316L stainless steel or aluminum.
- D. Seat angles for aluminum grating shall be aluminum unless otherwise noted.
- E. Seat angles for steel grating shall be hot-dipped galvanized steel.

## **2.06 Aluminum Gratings**

- A. Grating shall be fabricated in accordance with the details shown and shall be designed for a live load of 150 pounds per square foot with deflection not exceeding 1/360 of the span unless otherwise noted.
- B. Minimum grating height: 1-1/2-inches.
- C. Both bearing bars and cross bars shall be continuous.
- D. Grating shall be serrated to produce a nonskid walking surface.
- E. Openings shall be banded with bars having the same dimensions as the bearing bars.
  - 1. Openings 6-inch and larger: layout opening centerline at edge of two adjacent grating sections.
  - 2. Openings 6-inch and smaller: layout opening at edge of single grating section.
- F. Perimeter edges shall be banded with bars flush at the top surface of the grating and 1/4 inch clear of the bottom surface.
  - 1. Bars terminating against edge bars shall be welded to the edge bars when welded construction is used.
  - 2. When crimped or swaged construction is used, bars at edges shall protrude a maximum of 1/16 inch and shall be peened or ground to a smooth surface.
- G. No single piece of grating shall weigh more than 50 pounds unless otherwise indicated.
- H. Rough weld beads and sharp metal edges on gratings and plates shall be ground smooth. Welds exposed to view shall be uniform and neat.
- I. Holes shall be punched 1/16 inch larger than the nominal size of the bolts, unless otherwise indicated. Whenever needed, because of the thickness of the metal, holes shall be subpunched and reamed or shall be drilled.
- J. Aluminum grating bearing bars and aluminum floor plates and cover plates shall be of alloy 6061-T6 conforming to ASTM B221.
- K. Aluminum grating cross bars shall be of an alloy conforming to either ASTM B221 (extrusions) or B210 (drawn).
- L. Bearing bars shall be punched to receive the cross bars.
  - 1. After insertion in the bearing bars, cross bars shall be deformed by a hydraulic press or similar means to permanently lock the bars into the bearing bar openings.
  - 2. Fabrication methods employing bending or notching of bearing or cross bars will not be permitted.

- M. Grating shall be provided with secure connection that are secured to the framing.
1. When loosened from framing, attachment shall still be secured to grating and not be capable of falling into the clarifier.

### **2.07 Floor and Cover Plates:**

- A. Design Criteria: As indicated on the Drawings.
- B. Plates shall be set flush with surrounding floor.
- C. No single piece of floor and cover plate shall weigh more than 80 pounds unless specifically detailed otherwise.
- D. Plates shall be aluminum unless otherwise indicated.
- E. The size of the openings shall be as shown on the plans.
- F. Steel Checker plates, if indicated, shall be hot dip galvanized after fabrication.

## **PART 3 - EXECUTION**

### **3.01 General**

- A. Fabrication and Erection: Except as otherwise indicated, the fabrication and erection of structural steel shall conform to the requirements of the American Institute of Steel Construction "Manual of Steel Construction."
- B. General:
  1. Fieldwork, including cutting and threading, shall not be permitted on galvanized items.
  2. Dissimilar metals shall be protected from galvanic corrosion by means of pressure tapes, coatings or isolators.
  3. Grouting of anchor bolts with non-shrink or epoxy grouts, where indicated, shall be in accordance with Section 03315 - Grout.
  4. Drilling of bolts or enlargement of holes to correct misalignment will not be allowed.
  5. Holes shall be punched 1/16-inch larger than the nominal size of the bolts, unless otherwise indicated. Whenever needed, because of the thickness of the metal, holes shall be subpunched and reamed or shall be drilled.
  6. Fabrication including cutting, drilling, punching, threading and tapping required for miscellaneous metal or adjacent work shall be performed prior to hot-dip galvanizing.
- C. Aluminum Jointing and Connections
  1. Accurately cope and join connecting members to a hair-line fit unless otherwise detailed or approved. Except at required offsets, construct exposed surfaces with flush joints.
  2. Mechanically Assembled Joints. Provide concealed reinforcing shapes and accessories, of type and design to equal or exceed the strength of the strongest member connected. Use aluminum, non-magnetic stainless steel, or zinc-coated steel that is carefully isolated as specified hereinafter.
  3. Welded Joints. Perform welding by inert gas shielded arc method, or fluxless resistance welding method in accordance with parent metal manufacturer's published recommendations and requirements herein. Unless otherwise shown or approved, place welds on concealed surfaces and take precautions to minimize heat discoloration of exposed surfaces. Make

welds of size and type to develop at least twice the strength of the connected members, except where more stringent requirements are shown, specified, or are standard with item manufacturer. Pre-heat and anneal as necessary to relieve residual stresses. Finish exposed welds to match adjoining surfaces.

- a. **Welding Assemblies To Be Anodized.** Construct members so faying surfaces are free rinsing and do not trap anodizing solutions. Where weld metal is exposed, use filler rods of composition recommended by manufacturer or member to be welded to provide uniform color match between metals.
  - b. **Assemblies Anodized Prior to Welding.** Clean areas of fusion free of anodic film prior to welding. Parts may be masked during anodizing, or sanded clean in weld area. Heat crazing or discoloring of anodic film on exposed surfaces is not acceptable.
  - c. **Rejected Welds.** Repair by re-welding only. Remove defective welds by chipping or grinding. Gas cutting is prohibited.
4. **Fasteners.** Unless shown, specified, or approved, do not use screws or other fasteners on exposed surfaces. Where used and feasible, provide countersunk exposed fasteners with Phillips type flat heads. On clear anodized work, use aluminum or non-magnetic stainless steel. On color anodized work, use aluminum alloy fasteners finished to match adjoining surfaces. Provide fasteners of suitable sizes, located and spaced to securely connect work and resist imposed loads, and as may be required under other Sections, all subject to approval.

#### D. Stainless Steel Fabrication and Installation Requirements

1. **Standards.** Metals shall be thoroughly cleaned before being fabricated. Finished members shall be free of twists, bends or open joints, and shall present a neat workmanlike appearance when completed. Steel work shall conform to the best practices set forth in the "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" of the American Institute of Steel Construction, latest edition.
2. **Welding.** All welding shall be done in accordance with the "Structural Welding Code-Steel", AWS D1.1 and current revisions. Where Gas Metal Arc Welding (GMAW) process is used, however, the short circuited mode shall be used only for light gage material (12 gage and lighter).
3. **General Fabrication and Installation.** Using specified new stock of standard sizes specified or detailed, fabricate in shop producing high grade metal work. Form and fabricate to meet required conditions. Include clips, straps, bolts, screws, and other fastenings necessary to secure the work. Conform applicable work to latest edition of Referenced Standards. Accurately make and tightly fit joining and intersections in true planes with adequate secure fastenings. All metal work shall be erected plumb, true on line and in its designated location. Field welds on exposed surface shall be ground and finished smooth. Connections shall be bolted or welded as indicated on drawings. After installation, all work shall be left in a neat and clean condition, ready for field painting or coating.
  - a. **Compliance with Safety Requirements.** Dimensions required for the fabrication and installation of handrails, ladders, grating, plate, pipe hangers and etc. which are not shown on the drawings, shall conform to the applicable requirements of the manufacturer's local OSHA Occupational Safety and Health Standards. It is on the client/engineer to verify suitability with project specific OSHA requirements and illustrate those to the manufacturer.
  - b. Do not field cut or alter structural integrity of members without explicit approval of Engineer.

- c. Grout under base plates where suitable. Use stainless steel shims where grout is not suitable.
- d. A liberal coating of LOC-TITE, or approved equal shall be applied to the threads before screwing on nuts when required.
- e. In anchoring equipment bases subject to vibration, two nuts shall be used, one serving as a lock nut, unless other locking mechanical devices are employed.

### **3.02 Installation of Seat Angles, Supports and Guides**

- A. Seat angles shall be set flush with the floor. Aluminum material in contact with concrete shall be coated per specification Section 09900 - Protective coating systems.

### **3.03 Installation of Grating, Floor and Cover Plates**

- A. Grating, floor and cover plates shall be field measured for proper cutouts and proper sizes.
- B. Maximum 1/8-inch clearance between ends of grating and at inside face of vertical leg of edge angles.
- C. Installed grating shall not slide off or out of support.
- D. Top surfaces of adjacent grating sections shall be flush, in the same plane.

### **3.04 Aluminum Finishing**

- A. Perform anodized finishing in plant of finisher approved and licensed by parent metal manufacturer. Exposed Work shall be free of finger marks, stains, scratches and other undesirable marks or flaws, and gripper or rack marks. Perform finishing after fabrication and forming operations are completed. Finishes shall be uniform on exposed surfaces including edges of members. Aluminum shall not be painted.
- B. Finishes are defined by and shall conform to Aluminum Association "Standards for "Anodized Architectural Aluminum" and "Designation System for Aluminum Finishes".
- C. Pretreatments. Clean per AA-C12 prior to pre-treatments.
  - 1. As Fabricated AA-M12, mill finish.
  - 2. Etched AA-C21, C22 or C23, chemical match as required to produce selected texture matching approved samples.
  - 3. Directional Textured AA-M31, fine satin finish.
  - 4. Buffed AA-M21, smooth specular.
- D. Clear Anodized Finishes. Natural aluminum color.
  - 1. Class I. AA-A41, Architectural Class I clear anodized finish having 0.7 mil and greater coating thickness, 27 mg/sq inch coating weight, and 38 g/cu.in. apparent density as minimums. For exterior and interior clear anodized work unless otherwise specified.
- E. Color Anodized Finishes.
  - 1. Type. AA-A42, Architectural Class I integral color coating having 0.7 mil and greater coating thickness, 32 mg/sq inch coating weight, and 38 g/cu.in. apparent density as minimums.
  - 2. Color. Kawneer's "Permanodic" Dark Bronze or equivalent and matching colored anodic hardcoat of Kaiser's "Kalcolor", Alcoa's "Duranodic", or Northrop Architectural System's "Colormodic" finishes, as approved. This paragraph specifies required color only, not alloys to be used. Refer to Paragraph "Coordination of Materials" hereinbefore. Perform color anodic

finishing in strict accordance with procedures established by parent aluminum manufacturer whose finishing system is used, and such finishing shall be performed by finisher licensed by said parent aluminum manufacturer. Provide written certification of compliance with each.

F. Usages. Unless otherwise specified within respective trade Sections, provide the following finishes:

1. Aluminum Rail and Railing Assemblies. Uniformly finished with clear anodic finish AA-C21A4I consisting of fine matte chemical etched texture and Architectural Class I clear anodic finish.
2. Aluminum, Gratings, Ladders and Checkerplate Assemblies. Uncoated and as fabricated clear aluminum finish.

**\*\* END OF SECTION \*\***

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## **SECTION 05501 ANCHOR BOLTS AND ANCHORING DEVICES**

### **PART 1 - GENERAL**

#### **1.01 Summary**

- A. Anchor bolts, concrete anchors and other anchoring devices for mechanical and electrical equipment.
- B. Related Sections
  - a. Section 01610 – Seismic Anchorage and Bracing

#### **1.02 Design Requirements**

- A. Comply with the current edition of the California Building Code (CBC).
- B. Where specified in the individual equipment sections or in the specifications, provide structural calculations and supporting drawings including details stamped and signed by a professional civil or structural engineer registered in the State of California. Submit with equipment submittal.
- C. Comply with Section 01300.

#### **1.03 Submittals**

- A. Include the following items:
  - 1. Product Data: Manufacturer's data for nuts, bolts, concrete anchors, chemical anchors and other fasteners.
  - 2. Catalog data and ICC-ES reports for each type of anchor bolt.

#### **1.04 Quality Assurance**

- A. Special inspection for the installation of chemical anchors shall be made by the Owner in accordance with the CBC.
- B. Do not use expansion-type concrete anchors or adhesive-type anchors set in holes drilled in the concrete as a substitution for cast-in-place anchor bolts.

### **PART 2 - PRODUCTS**

#### **2.01 Materials**

- A. Unless otherwise specified or indicated on the Drawings, materials of construction for anchoring devices shall conform to the following:
  - 1. Anchor bolts and other anchoring devices, nuts and washers installed indoors: Type 316 stainless steel.
  - 2. Anchor bolts and other anchoring devices, nuts and washers installed outdoors or in locations exposed to wastewater: Type 316 stainless steel.
    - a. Locations exposed to wastewater includes:
    - b. Below tops of walls of water-containing structures.

- c. Underside of roof, slab or walkways of enclosed water-containing structures.
- d. Dry side of walls on water-containing structures.

## **2.02 Anchoring Devices**

### **A. Cast-in-Place Anchor Bolts**

- 1. Bolt: Conform to ASTM A320, Type 316 stainless steel
- 2. Minimum Length of Bolt: Per design calculations or per Drawings
- 3. Head Type: Hexagonal headed bolt
- 4. Nuts and washers: ASTM A194, Type 316 stainless steel

### **B. Concrete Anchors**

- 1. Drilled in place wedge-type anchors with integral threaded studs. Anchors shall be suitable for cracked concrete.
- 2. Manufacturers: One of the following or equal:
  - a. ITW Ramset/Redhead, Trubolt Wedge.
  - b. Hilti Kwikbolt TZ.
- 3. Material: Anchor material shall be 316 stainless steel.

### **C. Studs**

- 1. ASTM A108 with 50,000 pounds per square inch minimum yield strength, and 60,000 pounds per square inch minimum tensile strength.
- 2. Manufacturers: One of the following or equal:
  - a. Nelson Stud Welding Company, S3L Shear Connectors or H4L Concrete Anchors.
  - b. Stud Welding Products, Headed Concrete Anchors and Shear Connectors or Concrete Anchors.

### **D. Chemical Anchors**

- 1. Do not use in overhead applications, in chlorine gas environments, or where anchor may be exposed to machine or diesel oils.
- 2. Materials: Type 316 stainless steel all-thread rod with vinyl ester resin adhesive.
  - a. Stainless steel all-thread rod: Conform with ASTM F593.
- 3. Manufacturers: One of the following or equal:
  - a. Hilti RE HY-200 System.
  - b. ITW Redhead Epcon G5.
- 4. Anchors shall be suitable for cracked concrete.

## **PART 3 - EXECUTION**

### **3.01 General Anchoring Requirement**

- A. Install anchor bolts, concrete anchors and other anchoring devices with at least 2 threads projecting beyond the nut, but no more than 1/2-inch projecting beyond the nut.



- B. Prior to installing nuts, coat threads of stainless steel bolts with material to prevent galling of threads.
  - 1. Manufacturers: One of the following or equal:
    - a. Never Seez Compound Corporation, Never-Seez.
    - b. Oil Research, Inc., WLR No. 111.
- C. Tighten nuts on anchor bolts, concrete anchors and other anchoring devices to the "snug-tight" condition, defined as tightness attained by a few impacts of an impact wrench or the full effort of a man using an ordinary wrench.

### **3.02 Cast-in-Place Anchor Bolts**

- A. Accurately place anchor bolts to be embedded in concrete within the formwork and perpendicular to surface from which they will project. Secure in correct position while concrete is placed.
- B. Do not allow anchor bolts to touch reinforcing steel.
  - 1. Where anchor bolts are within 1/4 inch of reinforcing steel, isolate with a minimum of 4 wraps of 10 mil polyvinyl chloride tape in area adjacent to reinforcing steel.
- C. In anchoring machinery bases subject to heavy vibration, use 2 nuts, with 1 serving as a locknut.
- D. Where bolts are indicated on the Drawings for future use, first coat thoroughly with non-oxidizing wax, then turn nuts down full depth of thread and neatly wrap exposed thread with waterproof polyvinyl tape.
- E. Where indicated on the Drawings, set anchor bolts in metal sleeves having inside diameter approximately 2 inches greater than the bolt diameter and a minimum of 10 bolt diameters deep.
- F. Fill sleeves with grout when equipment is grouted in place.
- G. Anchor bolts may be cast in concrete in lieu of using concrete anchors.

### **3.03 Concrete Anchors and Chemical Anchors**

- A. Do not use concrete anchors or chemical anchors in lieu of anchor bolts.
- B. Drill holes using concrete drill bits and impact type drill motors.
- C. Hole diameter: in accordance with the manufacturer's recommendations.
- D. Clean drilled hole using compressed air to dislodge and remove drilling dust.
- E. Accurately locate concrete anchors and set perpendicular to surfaces from which they will project.
- F. Minimum embedment lengths shall be per manufacturer safe load tables.

**\*\* END OF SECTION \*\***

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## SECTION 05520 ALUMINUM HANDRAILING

### PART 1 - GENERAL

#### 1.01 Summary

A. This Section specifies pre-engineered, prefabricated anodized aluminum handrails.

#### 1.02 Quality Assurance

A. General: Handrailing and guardrailing shall meet the requirements of the standards of the Occupational Safety and Health Administration (Title 8), the Division of Industrial Safety of the State of California (Title 24), and the current state building code.

B. References

<u>Reference</u>	<u>Title</u>
ASTM A320	Alloy-Steel Bolting Materials for Low Temperature Service
ASTM B241	Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube

#### 1.03 Submittals

A. The following shall be submitted in compliance with Section 01300-Submittals:

1. Materials, finishes, connecting and joining methods, installation details.
2. Shop drawings, including details, dimensions, details of match markings and all information necessary for fabrication.
3. Engineering calculations for railings, handrail brackets, brackets, support flanges and fasteners or anchors, stamped and sealed by a registered engineer.

#### 1.04 Delivery, Storage and Handling

A. Manufactured materials shall be packaged and shipped in individual plastic film to protect the anodized surface and placed in containers constructed for normal shipping, handling and storage.

B. The containers shall be provided adequate protection from the equipment and stored until time for installation.

### PART 2 - PRODUCTS

#### 2.01 General

A. Handrailing Systems shall be Manufactured by:

1. TUFrail as manufactured by Thompson Fabricating;
2. Connectorail as manufactured by Julius Blum and Company, Inc.;
3. WesRail as manufactured by Moultrie Manufacturing Co., Moultrie, GA;
4. C-V Pipe Rail as manufactured by CraneVeyor Corporation,
5. or equal.

B. Except as otherwise shown, pipe railings shall be 1-1/2-nominal, schedule 40, 1.90-inch actual diameter.

- C. Posts shall be secured to concrete and metal structures as indicated on the drawings. Posts shall be either set in concrete or side mounted. Post set in concrete shall be set into preformed holes and secured in place with non-shrink grout.
- D. Toe plates (“kick plates”) are required at base of posts.

## **2.02 Materials**

- A. Materials for handrailing shall be as follows:
  - Pipe railing and posts      Aluminum ASTM B241, Alloy 6061-T6 or 6063-T6
  - Bolts, nuts, washers      Stainless Steel, Type 316
- B. Finishes: Aluminum railing components shall have a clear satin anodized Architectural Class I finish of minimum 0.7 mil thickness. Rails, posts, stanchions, and specials shall be fabricated from cylindrical sections.

## **PART 3 - EXECUTION**

### **3.01 Fabrication**

- A. Posts shall be continuous from mounting surface to top rail and attached whenever possible, to a minimum of three posts. Bottom and intermediate rails shall be un-spliced lengths between posts.
- B. Pipe cuts shall be clean, straight, square and accurate for minimum joint gap. Work shall be done in conformance with the handrail manufacturer's instructions. Work shall be free from blemishes, defects, and misfits of any type that can affect durability, strength or appearance.
- C. Holes shall be punched 1/16 inch larger than the nominal size of the bolts, unless otherwise specified. Pieces with mismatched holes shall be replaced. No drifting of bolts nor enlargement of holes will be allowed to correct misalignment.

### **3.02 Installation**

- A. Assembly installation of handrail system shall be performed in accordance with manufacturer's written recommendations for installation and the details.
- B. Measurements shall be verified at the site.
- C. Expansion joints shall be provided for 0.20-inch expansion and contraction per 24 feet of railing. The expansion shall be placed within 8 inches of post and should also coincide with the expansion joints and shrinkage contraction joints in the structural walls and floors.
- D. Provisions should be made for exterior installations to drain water from the railing system. Provisions should be made for interior installation subject to high humidity. Weep holes a minimum of 15/64" in diameter shall be drilled at all posts at low points.
- E. Dissimilar metals shall be protected from galvanic corrosion by means of pressure tapes, coatings or isolators. Aluminum in contact with concrete or grout shall be protected with a heavy coat of bituminous paint or urethane.
- F. When posts set in grout, top of grout or sealant shall be shaped to shed water away from embedment.

**\*\*END OF SECTION\*\***

# SECTION 05910 HOT-DIP ZINC COATING

## PART 1 - GENERAL

### 1.01 Summary

A. This Section specifies hot-dip zinc coating. Unless otherwise specified, steel items not fully encased in a building envelope shall be hot-dip zinc coated. Also termed hot dip galvanized.

### 1.02 References

<u>Reference</u>	<u>Title</u>
ASTM A90	Standard Test Methods for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles
ASTM A123	Zinc Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars and Strip
ASTM A153	Zinc Coating on Iron and Steel Hardware
ASTM A384	Safeguarding Against Warpage and Distortion During Hot-Dip Galvanizing of Steel Assemblies
ASTM A385	Providing High Quality Zinc Coatings on Assembled Products
ASTM A386	Zinc Coating on Assembled Steel Products
MILSPEC	Paint, High Zinc Dust Content, Galvanizing
DOD-P-21035	Repair

## PART 2 - PRODUCTS

### 2.01 Materials

A. The coating material shall be as specified in ASTM A153 or ASTM A123.

## PART 3 - EXECUTION

### 3.01 Galvanizing

A. The thickness, chemistry, and all other engineering properties of galvanizing shall be defined by ASTM A153 and ASTM A123.

### 3.02 Field Repairs

A. Where zinc coating has been damaged, substrate surface shall be cleaned and repaired with zinc dust-zinc oxide coating in accordance with MILSPEC DOD-P-21035.

B. Field repair of zinc coated surfaces, including Unistruts shall be accomplished with the following products:

1. Z.R.C., as manufactured by Z.R.C. Chemical Products Co.;
2. Galvicon as manufactured by Galvicon Co.;
3. or equal.

### **3.03 Post-Galvanizing Coating**

- A. When paint is required over a hot-dip galvanized coating, the galvanized surface requires special preparation. Chemical or abrasive methods may be used, with care exercised to not remove too much of the galvanized coating.

**\*\*END OF SECTION\*\***

## SECTION 09900 PROTECTIVE COATING SYSTEMS

### PART 1 - GENERAL

#### 1.01 Summary

##### A. Scope:

1. The Contractor shall furnish all labor, materials, equipment and incidentals required to provide painting as shown and specified. The work includes the coating and finishing of all interior and exterior items and surfaces throughout the project except as otherwise shown or specified. Surface preparation, priming and coatings may be in addition to shop priming and surface treatment specified under other Sections.
2. Where items are factory-coated, repair or touch-up the factory coating and/or apply additional field coatings to achieve a complete coating system complying with the type and thickness of the coatings specified in this Section.
3. The term "coating" as used herein means all coating systems materials, which includes but is not necessarily limited to pretreatments, primers, intermediate coats, finish coats, emulsions, enamels, varnishes, stains, sealers, fillers, and other applied materials whether used as prime, intermediate or finish coats.
4. The term "exposed" as used herein means all items not covered with concrete, plaster, fireproofing or similar material.
5. Where items or surfaces are not specifically mentioned, coat these items or surfaces the same as adjacent similar materials or surfaces.
6. "Typical Examples" of items to be coated are provided on each coating system description sheet. These examples are intended to show the general scope of items to be coated are not intended to be exhaustive of all items to be coated by that particular coating.
7. Items which must be coated under this section include but are not necessarily limited to the following:
  - a. Primary clarifier,
  - b. Piping
  - c. Pipe supports
  - d. All other surfaces not otherwise excluded herein.

##### B. Coordination

1. Review installation procedures under other Sections and coordinate the installation of items that must be field coated or painted.
2. Coordinate the coating of areas to be coated that will be inaccessible once equipment has been installed.
3. Provide finish coats that are compatible with the primers used. Contractor shall be responsible for the compatibility of all shop primed and field coated items in this Contract. Barrier coats shall be provided over incompatible primers or primers shall be removed and re-primed as required.

- ##### C. Pre-Finished Items:
- Unless otherwise shown or specified, coating shall not be included when factory finishing such as baked-on enamel, porcelain, polyvinylidene fluoride, fusion bonded epoxy, or other similar finish is specified for such items.

1. Touch up factory-finished items only with coatings supplied by the item manufacturer per the requirements and instructions of the manufacturer.
2. If a factory-finished coating is applied to an item, which is not specified to receive a factory finish coat, acceptance of the factory finish coat shall be at the discretion of the Engineer. The color shall be noted with the equipment submittals.

D. Items not to be coated: The following items are excluded from coating unless otherwise specified or show:

1. Ducts, conduits and other materials with corrosion resistant surfaces that are in chases or other inaccessible areas unless specified or shown on drawings.
2. Moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, motor and fan shafts unless otherwise specified.
3. Code-required labels, such as UL and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.
4. Stainless steel.
5. Copper.
6. Aluminum.
7. Fiberglass.
8. Manhole covers.
9. HVAC equipment.
10. Instrumentation and galvanized instrument supports
11. Electrical switchgear, motor control centers, panels, transformers and other similar equipment.
12. Exterior or interior concrete unless specified or shown on drawings.
13. Exterior concrete unit masonry unless specified or shown on drawings.
14. Interior concrete unit masonry unless specified or shown on drawings.

## 1.02 References

A. Reference Standards: Applicable provisions and recommendations of the following shall be complied with, except where otherwise shown or specified:

<b><u>Reference</u></b>	<b><u>Title</u></b>
ANSI A13.1	Scheme for the Identification of Piping Systems
Ten States Standards	Great Lakes - Upper Mississippi River Board of State Sanitary Engineers, Recommended Standards for Waste Treatment Works - Latest Edition, Recommended Color Scheme for Piping
OSHA 1910.144	Safety Color Code for Marking Physical Hazards
SSPC Volume 2	Systems and Specification, Surface Preparation Guide and Paint Application Specifications
SSPC Technology Guide No. 6	Guide for Coating Surface Preparation Debris Generated During Paint Removal Operations



### **1.03 Submittals**

A. Shop Drawings: The following shall be submitted for approval:

1. Manufacturer's technical information, including coating label analysis and application instructions for each material proposed for use. Each material shall be listed and cross-referenced to the specific coating system and application, and shall be identified by manufacturer's catalog number and general classification.
2. Provide itemized schedule of all the surfaces to be coated. After approval of submittals and prior to beginning work, Owner's Representative will note on the schedule the colors to be furnished.
3. Manufacturer's complete color charts for each coating system.
4. Certifications from manufacturers shall be provided, verifying that the factory applied prime coats are compatible with specified finish coatings.

B. Submit sample texture spray out panel for approval by the District, at least 7 days prior to concrete coating repairs. Panel shall be minimum 8' x 4'. District would like to confirm anti-slip surface prior to installation of protective concrete coating repairs.

### **1.04 Delivery, Storage, and Handling**

A. Delivery of Materials: All materials shall be delivered to the job site in original, new and unopened packages and containers bearing manufacturer's name and label, and the following information.

1. Name or title of material
2. Manufacturer's stock number and date of manufacture
3. Manufacturer's name
4. Contents by volume, for major pigment and vehicle constituents
5. Thinning instructions where recommended
6. Application instructions
7. Color name and number

B. Storage of Materials

1. Only acceptable project materials shall be stored on project site.
2. Store materials in compliance with manufacturer's requirements in a location approved by the Owner's Representative. Area shall be kept clean and accessible.
3. Storage shall be restricted to coating materials and related equipment only.

## **PART 2 - PRODUCTS**

### **2.01 Manufacturers:**

A. Products manufactured by one of the following shall be provided:

1. Tnemec Company, Incorporated
2. International Coatings

B. Substitutions

1. No substitutions shall be considered that decrease the film thickness, the number of coats, the surface preparation or the generic type of coating specified. Approved manufacturers must

furnish the same color selection as the manufacturers specified, including accent color in all coating systems.

## **2.02 Materials**

- A. Only the best grade of the various types of coating suitable for use in water and wastewater treatment plants, as regularly manufactured by acceptable coating material manufacturers, shall be provided. Material not displaying the manufacturer's identification as a best-grade product will not be acceptable.
- B. Primers shall be produced by the same manufacturer as the intermediate and finish coats. Use only thinners recommended by the manufacturer, and use only to recommended limits.
- C. Coatings and pipe markers of durable and washable quality shall be provided. Materials that will withstand normal washing as required to remove grease, oil, chemicals, etc., without showing discoloration, loss of gloss, staining, or other damage shall be used.

## **2.03 Colors and Finishes**

- A. Surface treatments, and finishes, are shown under Coating Systems below. All substrates indicated shall be coated whether or not shown on the Drawings, or in Schedules, unless an item is specifically scheduled as not requiring coating.
- B. Color Selection
  - 1. The Owner reserves the right to select non-standard colors for all coating systems specified within the ability of the manufacturer to produce such non-standard colors. Selection of non-standard colors shall not be cause for the Contractor rejecting Owner's color selections and the Contractor shall supply such colors at no additional expense to the Owner.
- C. Piping Color Code:
  - 1. To be selected by the Owner.
- D. Color Pigments: Pure, non-fading, applicable types to suit the substrates and service indicated.

## **2.04 Coating Systems**

- A. Refer to the following Coating System Sheets.
- B. The Contractor shall coat all items, which fall into the categories described. The examples given on the coating system sheets are presented for the Contractor's convenience, and may not include all items which require coating. In general all exposed ferrous materials shall be coated. This includes galvanized materials and shop primed material unless specifically excluded elsewhere.

## Coating System 1

### A. Service:

1. Structural steel, miscellaneous metals, and steel, ductile iron, or cast iron piping
2. Interior exposure
3. Non-submerged applications (greater than 3' above highest possible water level).

### B. Typical Examples:

1. All exposed structural steel including but not limited to columns, beams, roof joists, purlins and other supporting members.
2. Equipment including but not limited to pumps, blowers, air compressors, valves, and other process equipment, motors, gear reducers, and equipment guards.
3. Steel, ductile, or cast iron piping not otherwise coated as specified in piping sections.

### C. Surface Preparation:

1. Shop: SSPC-SP 10/NACE No.2 Near-White Blast Clean, as specified in herein.
2. Field: Sandblasting of field welds and other imperfections. Owner's Representative may require all areas to be blasted at his discretion, SSPC-SP 10/NACE No.2 Near-White Blast Clean, commercial blast as specified in herein.

### D. Product and Manufacturer: One of the following shall be provided:

1. Themec
  - a. Primer: Series V69 Hi-Build Epoxoline II - one coat, 3.0 - 5.0 total dry mils thickness
  - b. Finish: Series G435 Perma Glaze - one or two coats, 15.0 - 20.0 total dry mils thickness
2. Or equal

## Coating System 2

### A. Service:

1. Structural steel, miscellaneous metals, and steel, ductile iron, or cast iron piping
2. Exterior exposure
3. Non-submerged applications (greater than 3' above highest possible water level)

### B. Typical Examples:

1. All exposed structural steel including but not limited to columns, beams, roof joists, purlins and other supporting members.
2. Equipment including but not limited to pumps, blowers, air compressors, valves, other process equipment, motors, gear reducers, and equipment guards.
3. Overhead coiling and man doors if not specified door elsewhere.
4. Steel, ductile, or cast iron piping not otherwise coated as specified in piping sections.

### C. Shop Surface Preparation:

1. Shop: SSPC-SP 6/NACE No.3 - Commercial Blast Clean as specified in herein
2. Field: Sandblasting of field welds and other imperfections. Owner's Representative may require all areas to be blasted at his discretion, SSPC-SP 6/NACE no. 3, Commercial Blast Clean as specified in herein.

### D. Products and Manufacturer: One of the following shall be provided:

1. Tnemec
  - a. Primer: Series V69 Hi-Build Epoxoline II - one coat, 3.0 - 5.0 total dry mil thickness
  - b. Intermediate: Series V69 Hi-Build Epoxoline II - one coat, 3.0 - 5.0 total dry mil thickness
  - c. Finish: Series 1075 Endura-Shield - one or more coats, 3.0 - 5.0 total dry mil thickness
2. Or equal

### Coating System 3

A. Service:

1. Galvanized structural steel, galvanized miscellaneous metals, and galvanized steel pipe.
2. Interior exposure
3. Non-submerged applications (greater than 3' above highest possible water level)

B. Typical Examples:

1. All exposed galvanized structural steel including but not limited to columns, beams, roof joists, purlins and other supporting members.
2. Flashing.
3. Galvanized rigid conduit.

C. Surface Preparation:

1. Solvent Cleaning, SSPC-SP 1 as specified in herein, followed by brush off blast cleaning per SSPC-SP16 to provide an anchor profile of 1.5 to 2.0 mils minimum

D. Product and Manufacturer: One of the following shall be provided:

1. Tnemec
  - a. Primer: Series V69 Hi-Build Epoxoline II - one coat, 2.0 - 3.0 total dry mil thickness
  - b. Finish: Series V69 Hi-Build Epoxoline II - one coat, 2.0 – 3.0 dry total dry mil thickness
  - c. Total DFT not to exceed 7.0 mils DFT.
2. Or equal

## Coating System 4

### A. Service:

1. Galvanized structural steel, galvanized miscellaneous metals, and galvanized steel pipe.
2. Aluminum tube
3. Exterior exposure
4. Non-submerged applications (greater than 3' above highest possible water level)

### B. Typical Examples:

1. All exposed galvanized structural steel including but not limited to columns, beams, roof joists, purlins and other supporting members.
2. Flashing
3. Galvanized rigid conduit
4. Bollards
5. All buried and exposed aluminum tubing in contact with dissimilar materials including but not limited to other metals, concrete, wastewater, and soil.

### C. Surface Preparation:

1. Solvent Cleaning, SSPC-SP 1 as specified in herein, followed by brush off blast per SSPC-SP16 to provide an anchor profile of 1.5 to 2.0 mils minimum

### D. Product and Manufacturer: One of the following shall be provided:

1. Themec
  - a. Primer: Series L69 Hi-Build Epoxoline II – one coat, 4.0 - 6.0 total dry mil thickness
  - b. Finish: Series L104 Hi-Strength Epoxy - one or more coats, 4.0 - 6.0 total dry mil thickness
  - c. Field Finish: Series 1095 Endura-Shield (Color to be determined) - one or more coats, 3.0 - 5.0 total dry mil thickness.
2. Or equal

## Coating System 5

### A. Service:

1. Structural steel, miscellaneous metals and steel, ductile iron, or cast iron piping
2. Submerged, intermittently submerged, or splash zone applications.

### B. Typical Examples:

1. Structural steel
2. Steel, ductile, or cast iron piping not otherwise coated as specified in piping sections
3. Bridge support beams
4. Pipe supports

### C. Surface Preparation:

1. Shop: SSPC-SP 10/NACE No. 2 Near-White Blast Cleaning
2. Field: Sandblasting of field welds and other imperfections. Owner's Representative may require all areas to be blasted at his discretion, SSPC-SP10/NACE No.2 Near-White Blast Cleaning as specified in herein.

### D. Product and Manufacturer: One of the following shall be provided:

#### a. Tnemec

- 1) Primer: Series L69 Hi-Build Epoxoline II – one or more coats, 4.0 – 6.0 total dry mil thickness
- 2) Field Intermediate: Series L104 Hi-Strength Epoxy – one or more coats, 4.0 – 6.0 total dry mil thickness
- 3) Field Finish: Series 1095 Endura-Shield (Color to be determined) – one or more coats, 3.0 – 5.0 total dry mil thickness.

#### b. Or equal

## Coating System 6

### A. Service:

1. Headworks: External structural concrete top surfaces.

### B. Surface Preparation:

1. Prepare all surfaces to be repaired per manufacturer's recommendations.
2. Prepare concrete surfaces in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines. Abrasive blast, shot-blast, water jet or mechanically abrade concrete surfaces to remove laitance, curing compounds, hardeners, sealers and other contaminants and to provide a minimum ICRI-CSP 5 surface profile. Large cracks, voids and other surface imperfections should be filled with a recommended filler or surfacer.

### C. Product and Manufacturer

#### 1. Tnemec:

- a. Surfacing Epoxy: Series 215 – Surfacing Epoxy - one or more coats, 1/32" – 1/8" total dry mil thickness. Up to 2" total thickness. Fill in gaps and then provide one additional coat at 1/32" – 1/8" mil thickness.
- b. Non-Slip Additive: Series 211 Fumed Silica additive.
- c. Maximum total coating system thickness: 2" when surfacing epoxy and additive used in combination.



## Coating System 7

### A. Service:

1. Plastics including PVC and CPVC Piping
2. Interior or exterior exposure
3. Non-submerged applications

### B. Typical Example:

1. Exposed PVC and CPVC piping.
2. Notable Exceptions:
  - a. Do not coat submerged or partially submerged plastic piping.
  - b. Do not coat plastic valves, unions, valve handles or other similar plastic items.
  - c. Do not coat exposed PVC conduit or exposed rigid steel with PVC coating conduit.

### C. Surface Preparation:

1. Plastic shall be prepared in accordance with SSPC SP-1 (Solvent Cleaning) followed by SSPC-SP 2 (Hand Tool cleaning). Contractor shall use a solvent compatible with the specified coating and roughen surfaces by sanding.

### D. Product and Manufacturer: One of the following shall be provided:

1. Carboline
  - a. Finish: Carbothane 134VOC – two coats, 5.0 total dry mil thickness
2. Tnemec
  - a. Finish: Tnemec Series 1075 – two coats, 2.0 to 3.0 mils DFT per coat for a minimum 5.0 total dry mil thickness
3. International
  - a. Finish: ICI Devoe Devthane 378H - two coats, 5.0 total dry mil thickness
4. Or equal

## Coating System 8

### A. Service:

1. Primary clarifier: Internal structural concrete walls down to minimum 1' below water surface elevation.
2. Primary clarifier's launders: internal structural concrete weir, floor and walls of launders to top of launder wall.

### B. Surface Preparation:

1. Prepare all surfaces to receive coating per manufacturer's recommendations.
2. Where required remove existing coal tar epoxy coating.
3. SSPC-SP13/NACE No.6 Surface Preparation of Concrete.
4. Apply resurfacer prior to applying liner if surface preparation cannot be met and as directed by Engineer.

### C. Product and Manufacturer

#### 1. Tnemec:

- a. Resurfacer (where approved): Mortartec Ceramico – one coat, 62.5 to 1000 mils per coat. Apply per manufacturer's recommendations.
- b. Liner: Series 456 - Epoxytec CPP Sprayliner or Epoxytec CPP Trowel Liner – one coat, 125 mils DFT minimum, up to 350 mils per coat if CPP Sprayline or 500 mils per coat if CPP Trowel Liner. Liner can be applied to maximum total thickness of 1 inch where required to be used as a concrete repair material. Apply per manufacturer's recommendations.

## **PART 3 - EXECUTION**

### **3.01 Examination**

- A. The Contractor and his applicator shall examine the areas and conditions under which painting work is to be performed and notify the Owner's Representative in writing of conditions detrimental to the proper and timely completion of the Work. The Contractor shall not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Owner's Representative.
- B. The Contractor shall not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to the formation of a durable paint film.

### **3.02 Preparation**

- A. Coordination:
  - 1. The Contractor shall review installation procedures under other Sections and coordinate the installation of items that must be field painted in this Section.
  - 2. The Contractor shall coordinate the painting of areas to be painted that will be inaccessible once equipment has been installed.
  - 3. The Contractor shall provide finish coats that are compatible with the prime paints used.
  - 4. The Contractor shall review other Sections of these Specifications in which prime paints are to be provided to ensure compatibility of the total coatings system for the various substrates.
  - 5. The Contractor shall be responsible for the compatibility of all shop primed and field painted items in this Contract.
  - 6. The Contractor shall furnish information on the characteristics of the finish materials proposed to use, to ensure that compatible prime coats are used. Barrier coats shall be provided over incompatible primers or primers shall be removed and re-primed as required.
- B. Protection:
  - 1. Finished Work of other trades and surfaces not being painted concurrently or not to be painted shall be covered or otherwise protected.
  - 2. Work of other trades shall be protected, whether to be painted or not, against damage by the painting and finishing work. All such work shall be left undamaged. All damage shall be corrected by cleaning, repairing or replacing, and repainting, as acceptable to the Owner's Representative.
  - 3. Wet Paint signs shall be provided as required to protect newly painted finishes. All temporary protective wrapping provided for protection of this Contract shall be removed after completion of painting operations.
- C. Containment:
  - 1. Contractor shall cover or otherwise protect finish work or other surfaces not being coated within the scope of this Section.
  - 2. Abrasive blasting and coating operations on the primary clarifier interiors shall be fully contained to prevent windblown abrasives, overspray, and odors from traveling offsite. To accomplish this, the Contractor shall provide all the necessary equipment, tools, labor and materials required to construct, maintain, and operate blasting and overspray containment facilities around the clarifier. Containment facilities shall include, but not be limited to, structure and materials to completely wrap the tank in its entirety during blasting and coating operations

in order to contain airborne particulates and odor causing chemicals. The Contractor shall be responsible for furnishing, erecting and removing the sealed structures, respirators, and other such equipment as may be required for the safety of personnel and safe operations during blasting and coating within the containment facility. Forced ventilation and air filtration are anticipated to be required in order to achieve all safety requirements. Containment operations may include the use of dust or debris collection apparatus as required at no additional cost to Owner.

3. The Contractor shall keep particulates, overspray, and odors below levels that are detectable to the Engineer or general public at the perimeter of the primary clarifier considering that the rest of the plant will remain in operation during the construction activities. This includes keeping overspray below detectable levels within the plant and on adjacent properties to the plant.

#### D. Surface Preparation

##### 1. General:

- a. All preparation and cleaning procedures shall be performed as specified herein and in strict accordance with the paint manufacturer's instructions for each particular substrate and atmospheric condition.
- b. All hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish painted shall be removed or provided surface applied protection prior to surface preparation and painting operations. The Contractor shall remove, if necessary, for the complete painting of the items and adjacent surfaces. Following completion of painting of each space or area, the removed items shall be reinstalled by workmen skilled in the trades involved.
- c. Surfaces to be painted shall be cleaned before applying paint or surface treatments. Oil and grease shall be removed with clean cloths and cleaning solvents prior to mechanical cleaning. The cleaning and painting shall be programmed so that dust and other contaminants from the cleaning process will not fall in wet, newly painted surfaces.
- d. All surfaces that were not shop painted or that were improperly shop painted, and all abraded or rusted shop painted surfaces, which are to be painted, as determined by the Owner's Representative, shall be prepared as specified below.

##### 2. Concrete and Masonry Surfaces:

- a. Surfaces of concrete, precast concrete, and concrete block to be painted and sealed with clear finish shall be prepared by removing all efflorescence, chalk, dust, dirt, grease and oils with soap and water.
- b. The alkalinity and moisture content of the surfaces to be painted shall be determined by performing appropriate tests. If the surfaces are found to be sufficiently alkaline to cause blistering and burning of the finish paint, this condition shall be corrected before application of paint. The Owner's Representative shall be provided with suitable testing materials to carry out alkalinity and moisture tests.
- c. The Contractor shall not paint over surfaces where the moisture content exceeds 8 percent, unless otherwise permitted in the manufacturer's printed directions.
- d. Concrete and concrete block surfaces that cannot be adequately cleaned by soap and water shall be acid etched. Exceedingly dense concrete may require a second etching.
- e. Brush blast clean shall be equivalent to SSPC-SP 7, to open bug holes and remove all non-adhering concrete. All areas so prepared shall be thoroughly cleaned before beginning coating work.

### 3. Ferrous Metals:

- a. Non-submerged ferrous surfaces, including structural steel and miscellaneous metal to be shop primed, shall be cleaned of all oil, grease, dirt, mill scale and other foreign matter by commercial blast cleaning complying with SSPC-SP 6.
- b. Submerged ferrous surfaces, including structural steel and miscellaneous metal to be shop primed, shall be cleaned of all oil, grease, dirt, mill scale and other foreign matter by near-white blasting complying with SSPC-SP 10.
- c. Non-submerged, ferrous surfaces that have not been shop-coated shall be cleaned of all oil, grease, dirt, loose mill scale and other foreign substances by commercial blasting, complying with SSPC-SP 6.
- d. Submerged ferrous surfaces that have not been shop-coated or that, in the opinion of the Owner's Representative, have been improperly shop-coated, shall be cleaned of all oil, grease, dirt, mill scale and other foreign matter by near-white blasting complying with SSPC-SP 10.
- e. Bare and blasted or pickled clean metal shall be treated with metal treatment wash coat, prior to priming only if recommended by the paint manufacturer.
- f. Shop applied prime coats that have damaged or bare areas shall be touched-up with primer recommended by the coating manufacturer after commercial blasting complying with SSPC-SP 6.
- g. Weld Preparation: Remove weld spatter and slag by chipping or grinding. Grind all sharp edges and corners to a smooth contour. Welds to be ground free from undercuts, recesses and pinholes.

### 4. Non-Ferrous Metal Surfaces:

- a. Non-ferrous metal surfaces shall be cleaned in accordance with the coating system manufacturers instructions for the type of service, metal substrate, and application required.

### 5. Galvanized Surfaces:

- a. The Contractor shall clean free of oil and surface contaminants with solvent or other methods recommended by the coating manufacturer, complying with SSPC-SP 1.
- b. All coated galvanized ferrous metal, interior and exterior, shall be cleaned of all oil, grease, dirt, mill scale and other foreign matter by a brush-off blast cleaning complying with SSPC-SP 7 with 1.5 to 2.0 mils profile.

## E. Materials Preparation

### 1. General:

- a. Painting materials shall be mixed and prepared in strict accordance with the manufacturer's directions.
- b. Coating materials produced by different manufacturers shall not be mixed, unless otherwise permitted by the manufacturer's instructions.
- c. Materials not in actual use shall be stored in tightly covered containers. Containers used in storage, mixing, and application of paint shall be maintained in a clean condition, free of foreign materials and residue.
- d. All materials shall be stirred before application to produce a mixture of uniform density, and as required during the application of the materials. Any film that may form on the surface

shall not be stirred into the material. The film shall be removed and, if necessary, the material shall be strained before using.

e. Brush stripe edges and corners to achieve specified coating thickness and coverage.

2. Tinting:

a. Each undercoat shall be tinted a lighter shade to facilitate identification of each coat where multiple coats of the same material are to be applied. Undercoats shall be tinted to match the color of the finish coat, but provide sufficient difference in shade of undercoats to distinguish each separate coat. A code number shall be provided to identify material tinted by the manufacturer.

3. Mixing:

a. The Contractor shall mix only in mixing pails placed in a suitably sized non-ferrous or oxide resistant metal pans to protect concrete floor from splashes or spills which could stain exposed concrete or react with subsequent finish floor material.

b. Paint shall be mixed and applied only in containers bearing accurate product name of material being mixed or applied.

### 3.03 Application

A. General:

1. Paint shall be applied by mechanical application techniques such as roller, brush, trowel, air spray, or airless spray in accordance with the manufacturer's directions and recommendations of Paint Application Specifications No. 1 in SSPC Vol. 2, where applicable, or as required in these Specifications. Brushes best suited for the type of material being applied shall be used. Where approved by the Owner's Representative, rollers of carpet, velvet back, or high pile sheep's wool shall be used, as recommended by the paint manufacturer for material and texture required.
2. The number of coats and paint film thickness required is the same regardless of the application method. Succeeding coats shall not be applied until the previous coat has completely dried.
3. Where multiple coats of the same material is used, tint prime and intermediate coats in order to distinguish each coat.
4. Additional coats shall be applied when undercoats, stains, or other conditions show through the final coat of paint, until the paint film is of uniform finish, color and appearance. This is of particular importance regarding intense primary accent colors. The Contractor shall insure that all surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a film thickness equivalent to that of flat surfaces.
5. Surfaces not exposed to view do not require color coding but require the same coating systems specified for exposed surfaces. Exposed to view surfaces are defined as those areas visible when permanent or built-in fixture, convactor covers, covers for finned tube radiation, grilles, etc., are in place in areas scheduled to be painted.
6. The backs of access panels and removable or hinged covers shall be painted to match the exposed surfaces.
7. Aluminum parts in contact with dissimilar materials shall be painted as specified with appropriate finish.
8. Brush stripe welds; bolts; nuts; edges and corners to achieve proper coating thicknesses.

B. Electrical Work:

1. Electrical items to be painted include, but are not limited to, the following:
  - a. Conduit and fittings.
  - b. Miscellaneous panels, junction boxes, motors and accessories.
- C. Minimum / Maximum Coating Thickness:
  1. The Contractor shall apply each material at not less than the manufacturer's recommended spreading rate, and provide total dry film thickness as specified. Extra coat shall be applied if required to obtain specified total dry film thickness or uniform opacity. If the recommended maximum coating thickness is exceeded, the excess amount will be removed and repaired as specified.
- D. System Coating Thickness:
  1. The system total dry mil thickness shall be the sum of the Primer, Intermediate and Finish Coats specified.
- E. Scheduling Painting:
  1. The first-coat material shall be applied to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration. Abrasive blasted ferrous metal surfaces shall be coated within eight (8) hours on the same day of abrasive blasting.
  2. Subsequent coats shall be applied as per manufacturer's written recoat parameters as detailed on their product data sheet. Sufficient time between successive coatings shall be allowed to permit proper drying. The Contractor shall not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- F. Prime Coats:
  1. Primed and sealed walls and ceilings shall be recoated where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects caused by insufficient sealing.
- G. Pigmented (Opaque) Finish:
  1. The Contractor shall completely cover to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage.
- H. Brush Application:
  1. All brush coats shall be brushed-out and worked onto the surfaces in an even film. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable. All glass and color break lines shall be neatly drawn.
- I. Mechanical Applicators:
  1. Mechanical methods shall be used for paint application as suggested by the paint manufacturer. Conduct spray coating under controlled conditions. Protect adjacent structure for overspray.
  2. For spray application, apply coating to thickness not greater than suggested in paint manufacturer's instruction.
  3. Wherever spray application is used, each coat shall be applied to provide the equivalent hiding of brush-applied coats. Do not double back with spray equipment for the purpose of building up film thickness of 2 coats in one pass.

### **3.04 Field Quality Control**

- A. The right is reserved by the Owner's Representative to invoke the following material testing procedure at any time, and any number of times during the period of field painting:
  - 1. Engage the service of an independent testing laboratory to sample any of the paint being used. Samples of materials delivered to the project site will be taken, identified and sealed, and certified in the presence of the Contractor.
  - 2. The testing laboratory will perform appropriate tests for any or all of the following characteristics: Abrasion resistance, apparent reflectivity, flexibility, washability, absorption, accelerated weathering, dry opacity, accelerated yellowness, recoating, skinning, color retention, alkali resistance and quantitative material analysis.
  - 3. If the test results show that the material being used does not comply with the specified requirements, the Contractor may be directed to stop the painting Work, and remove the non-complying paint; pay for testing; repaint surfaces coated with the rejected paint; remove rejected paint from previously painted surfaces if, upon repainting with the specified paint, the two coatings are non-compatible.
- B. Prior to initial coat and after completion of each successive coat of paint, the Contractor shall notify the Owner's Representative. After inspection, checking of film thickness and approval by the Owner's Representative, proceed with the succeeding coat. Contractor shall supply the Owner's Representative for his use a Gardner dry-film thickness gage.

### **3.05 Cleaning**

- A. During the progress of the Work, all discarded paint materials, rubbish, cans and rags shall be removed from the site at the end of each work day.
- B. Upon completion of painting work, all paint-spattered surfaces shall be cleaned. Spattered paint shall be removed by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- C. At the completion of work of other trades, all damaged or defaced painted surfaces shall be touched-up and restored, as determined by the Owner's Representative.

### **3.06 Demonstration**

- A. Completed Work:
  - 1. The Contractor shall match approved samples for color, texture and coverage.
  - 2. Work not in compliance with specified requirements shall be removed, refinished or repainted, as required by the Owner's Representative.

**\*\* END OF SECTION \*\***



## **SECTION 11350 PRIMARY CLARIFIER EQUIPMENT**

### **PART 1 - GENERAL**

#### **1.01 Summary**

A. This Section specifies the furnishing and installation of various wear equipment in a primary clarifier, vendor supplied bridge, and functional check of primary clarifier mechanism. The Contractor may provide the bridge materials separately or through the primary clarifier equipment vendor as required to meet the project time schedule.

#### **1.02 References:**

A. American Institute of Steel Construction (AISC):

1. 360 - Specification for Structural Steel Buildings.

B. American Society of Mechanical Engineers (ASME):

1. B29.1M - Precision Power Transmission Roller Chains, Attachments, and Sprockets.

C. American Welding Society (AWS):

1. D1.1 - Structural Welding Code for Steel.

2. D1.6 - Structural Welding Code - Stainless Steel.

D. ASTM International (ASTM):

1. A 36 - Standard Specifications for Carbon Structural Steel.

2. A 48 - Standard Specification for Gray Iron Castings.

3. A 148 - Standard Specification for Steel Castings, High Strength, for Structural Purposes.

4. A 276 - Standard Specification for Stainless Steel Bars and Shapes.

5. A 325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.

6. A 536 - Standard Specification for Ductile Iron Castings.

#### **1.03 Definitions**

A. Continuous operation: 24 hour-per-day operation for design life of not less than 20 years which equals 175,200 hours.

B. Intermittent operation: Periodic operation, including starts and stops, and prolonged periods of resting.

C. Manufacturer:

1. Firm responsible for the delivery, installation certification, and warranty of replacement of wear parts of sludge collection equipment.

D. Fabricator:

1. Firm responsible for the fabrication of sludge collection equipment conforming to the manufacturer's design.

2. Manufacturer may also be the fabricator if fabrication of all components is self-performed.

3. Bridge may be manufactured separately.

#### **1.04 System Description**

1. Equipment to include, but not be limited to, the following components:
  - a. Replacement of scum skimmer wiper, bottom, side and baffle side
  - b. Replacement of scum skimmer blades and wiper retainers – one (1) bottom and two (2) sides
  - c. Replacement of adjustable bottom sludge squeegee – Two (2), one for each of the two sides.
  - d. Replacement of spiral sludge scrapper blades
  - e. Replacement of scum extension spring.
  - f. 4 sets of shear pins.
  - g. A complete set of spare parts as listed below.
2. Walkway and Access Bridge if the Contractor is providing through the manufacturer.

#### **1.05 Submittals**

- A. The following shall be submitted in compliance with Section 01300-Submittals:
  1. Submit product data and shop drawings, operation, and test reports.
  2. Product data and shop drawings:
    - a. Shop drawings shall consist of a cover sheet indicating the drawing number and specification page and number to which referenced, intended use and data summary, outline drawings, cut-away drawings, parts lists, material specification lists, and all information required to substantiate that the proposed equipment meets the specifications:
      - 1) Shop drawings submittals will not be considered complete if cut-away or assembly drawings with part and material specification lists are not included.
    - b. General arrangement drawings showing the complete assembly, part numbers, and materials list.
    - c. Detailed drawings:
      - 1) Wear parts indicating dimensions, member sizes and thicknesses, welding, and connection details.
      - 2) Shop primer and coating data.
      - 3) Spare parts lists.
      - 4) Qualifications and resume of installation engineer.
      - 5) Training course outlines.
      - 6) Manufacturer's experience and reference list as specified in Quality Assurance.
      - 7) Bridge and Walkway Shop Drawings, based on structural design drawings S001 thru S201 and Contractor's field installation measurements.
        - a) Contractor's field measurements shall be provided as part of the Submittal.
  3. Manufacturer's Installation Instructions.
  4. Quality control submittals:
    - a. Welder's certificates.
    - b. Submit manufacturer's or designated contract fabrication facility's structural steel fabrication qualifications and information.

5. Fabrication certification report:
  - a. Provide fabrication certification report prior to equipment delivery to project site.
6. Certificates: Manufacturer's certification that equipment was installed in accordance with the manufacturer's instructions, inspected by the manufacturer, serviced with the proper initial lubricants, and equipped with applicable safety equipment and controls.
7. Technician's qualifications resume: Submit resume of technician to perform manufacturer's field service.

## **1.06 Quality Assurance**

### **A. Manufacturer qualifications:**

1. Experience: Demonstrate minimum 15 years experience in the manufacture and fabrication of cone scraper sludge collectors which have been successfully utilized in domestic wastewater applications:
  - a. Experience of fabricator, if manufacturer does not self-perform fabrication, shall meet or exceed that required of manufacturer.
  - b. Submit substantial information as necessary to establish qualifications of fabricator, if manufacturer does not self-perform fabrication, including location (address), experience, qualifications, and certifications of all fabricator's staff to be utilized.
  - c. Manufacturer's engineer responsible for structural design shall also demonstrate minimum 5 years experience designing sludge collectors to withstand operational and seismic loads, including sloshing of tank contents on sludge collection mechanism.

### **B. Steel fabrication:**

1. Manufacturer's authorized representative shall inspect fabrication of equipment.
2. Manufacturer's authorized representative shall provide a fabrication certification report complete with certified erection drawings, a journal of the fabrication work process, photo documentation of the shop assembly of all components required to be field erected, and a certification that the fabricated equipment is complete and ready for installation by the Contractor.

## **1.07 Project Conditions**

### **A. Environmental project conditions:**

1. Installation in a wastewater treatment plant.
2. Moderate quantities of commercial and industrial waste.
3. Exposure to industrial solvents and petroleum products.
4. Ambient air temperature:
  - a. Maximum 85 degrees Fahrenheit.
  - b. Minimum 10 degrees Fahrenheit.
5. Wastewater temperature:
  - a. Maximum 75 degrees Fahrenheit.
  - b. Minimum 31 degrees Fahrenheit.

## **1.08 Delivery, Storage, and Handling**

### **A. Preparation for shipment:**

1. All materials shall be suitably packaged and braced to protect against damage during transit, handling, and unloading.
  2. Manufacturer shall package equipment, be responsible for, and make good, any and all damage until the equipment is delivered to the job site.
  3. Accessories shall be packaged separately in containers clearly marked "ACCESSORIES ONLY".
  4. A packing list, listing the contents of each container, shall be placed in a moisture proof envelope and securely fastened to the outside of the container.
  5. Provide written storage procedures for all equipment.
- B. Delivery to job site:
1. Manufacturer shall fabricate and deliver materials to the job site in conformance with the Contractor's construction schedule to minimize handling and on-site storage of equipment.
- C. Storage and protection:
1. Protect the system components at the site and during installation prior to project completion.
  2. As a minimum, provide cover, ventilation, and proper stacking to prevent warping of any equipment stored on-site.

### **1.09 Sequencing and Scheduling**

- A. Coordinate work with work sequence specified in Section 01010 – Summary of Work.

### **1.10 Maintenance**

- A. Spare parts: Furnish the following spare parts suitably packaged and marked. Include a price list and name, address, and telephone number of local supplier:
1. Scum skimmer wiper, One (1) set.
  2. Scum skimmer blades and wiper retainers – One (1) set.
  3. Adjustable bottom sludge squeegee – Two (2) Sets, one for each of the two sides.

## **PART 2 - PRODUCTS**

### **2.01 Manufacturers**

- A. Some equipment may require modification from the manufacturer's standard.
- B. Exercise care to assure that the electrical, mechanical, structural, and miscellaneous systems comply with the requirements specified or in other referenced sections.
- C. One of the following or equal:
1. Westech
  2. ClearStream Environmental
  3. Rock Water Equipment

### **2.02 Materials**

- A. For all components, unless otherwise specified, use the materials of construction specified below.
1. Anchor bolts: Type 316L stainless steel.

2. Fasteners and washers: Type 316L stainless steel, except for bolts which will be removed during installation and any high strength bolts.
3. High strength bolts: Use ASTM A 325 hot-dip galvanized high strength bolts in attaching truss arms to cage, and cage to center drive gear casting.
4. Do not use cadmium plated parts and fasteners.

### **2.03 Scum Skimming System:**

A. General: Consisting of a scum skimmer assembly that pushes floating scum to a scum trough for removal. Basic components of skimmer assembly to be provided under this section include only the wear parts relative to the skimmer wipers:

#### 1. Scum Skimmer Assembly Parts:

- a. General: The wiper blades and wearing stripes shall be replaced on the existing hinged scum skimmer assembly. The wiper blade shall have a wearing strip on its outer end which contacts the scum baffle and a neoprene strip on its lower and inner edge. The scum is trapped as the wiper blade meets the ramp and is raised up the ramp to be deposited into the scum trough for disposal.
- b. Scum Skimmer Wiper:
  - 1) Neoprene, oil resistant
  - 2) Minimum 1/4-inch thickness.
  - 3) One (1) set, including bottom, side and baffle side.
- c. Scum Skimmer Blades and Wiper Retainers:
  - 1) Aluminum
  - 2) One (1) set, including one (1) bottom and two (2) sides.
- d. Scum Extension Spring
  - 1) Stainless Steel

### **2.04 Sludge Scraper Blades**

A. General: Scraper blades: Setting similar for each truss:

1. Sized and spaced so entire circular portion of tank is scraped twice for each revolution of the mechanism.
2. Having a minimum depth of 9-1/2 inches.
3. Having adjustable squeegees.

B. Materials:

1. 304 stainless steel.

### **2.05 Squeegees:**

A. Materials: Type 316L stainless steel, spring type, not less than 26-gauge thickness.

B. Projecting approximately 2 inches below the bottom of the spiral scraper blades.

C. Attach squeegees to blades utilizing stainless steel hardware. Squeegees shall be designed to allow 2 inches of vertical adjustment.

## **2.06 Walkways and Access Bridge:**

### **A. Materials:**

1. Welded steel beam construction with coating as specified on Section 09900 – Protective Coating System.

### **B. Design:**

1. 36-inch wide walkway with platform
2. Composed of 2 main members laterally braced together.
3. Minimum live load of 100 pounds per square foot.
4. Maximum deflection not to exceed span length divided by 360 ( $L/360$ ) for dead plus live loads.
5. Support of a 3,000 lbs davit crane.
6. Support light standards and fixtures as indicated on the Drawings.
7. Supported using:
  - a. Center column at one end and the outer concrete clarifier wall at the other as indicated on the Drawings.
  - b. Existing concrete ledge on the other side
    - 1) Make allowance at outer concrete wall for expansion and contraction of walkway due to temperature changes:
      - a) Use self-lubricating bearings.
      - b) Do not use non-lubricated metal-to-metal slide plates or direct metal-to-concrete bearing.
      - c) Prevent lateral movement of bridge at outer wall.
        - (i) Provide additional structural support as required to support scum spray and other piping on the bridge as indicated on the Drawings.

### **C. Walkway and Platform at the center turntable:**

1. Provide a minimum clearance of 3 feet, 0 inches clearance around all sides of drive mechanism and provide uninhibited access to all parts of the drive unit.
2. Provide access to below the platform to maintain drive unit and take samples as shown on the Plans.
3. Guardrail with kickplate:
  - a. On both sides of walkway and all around center turntable platform.
  - b. Guardrail and kickplate as specified in Section 05500 and matching other railing supplied for Project.
    - 1) Guardrail shall be minimum 42-inch high.
    - 2) Walking surface:
      - a) Materials: Aluminum grating as specified in Section 05500.
      - b) Location: Over entire bridge and center turntable platform.

### **D. Aluminum Handrailing:**

1. See Specification Section 05520.

## **PART 3 - EXECUTION**

### **3.01 Installation**

- A. Scum skimming system: remove existing scum skimmer wipers and install new ones.
- B. Scarper blades: remove existing bottom scraper blades and associated brackets and replace with new ones.
- C. The weir shall be installed level and at the same elevation as the existing weir is currently installed. Provide pre and post survey of their weir bottom notch elevation at a minimum of 4 locations or as approved by the District for confirming weir elevation.

### **3.02 Functional Tests and Manufacturer's Quality Control**

#### **A. Functional Tests:**

- 1. General: Conduct tests in presence of the Engineer.
- 2. The Contractor shall make sure that all mechanisms are securely tightened and any missing, and or corroded connections are replaced.
- 3. Working under direction of manufacturer's engineer, perform field tests on each mechanism as follows:
  - a. Dry test run of equipment:
    - 1) Special attention: Give attention during dry test run of equipment to operation of scum skimming device.
    - 2) Settings of skimmer boom to scum box lip and rubber wiping and sealing strips: Set as required to ensure that adequate volume of scum is discharged under normal operating conditions.

#### **B. Manufacturer's Quality Control:**

- 1. Contractor to coordinate field service work with the manufacturer's service representative, Owner, and Engineer prior to initiating such work.
- 2. Manufacturer's service representative:
  - a. Manufacturer is to furnish services of representative experienced in erection and operation of the sludge collector mechanism.
  - b. Period of services: The manufacturer shall include in his bid a one (1) 4-hour trip. The specified durations are the minimum required time on the job site and do not include travel time.
  - c. Services are to include the following:
    - 1) Installation consultation and advice.
    - 2) Checking and supervision of the installation and overall functionality of the primary clarifier system.
    - 3) Final inspection and adjustments prior to testing.
    - 4) Supervision of testing.
- 3. Instruction of personnel on operation and maintenance of equipment.

**\*\*END OF SECTION\*\***

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## **SECTION 16020 ELECTRICAL PROVISIONS**

### **PART 1 - GENERAL**

#### **1.01 Summary**

- A. This Section includes the provisions for all material, labor, tools, equipment, testing and services necessary to provide a complete and operable electrical system.
- B. Examine the specification and drawings and provide and install all conduit, wire, and cable and make connections required to place all new equipment in complete operation.
- C. Following installation, protect materials and equipment from corrosion, physical damage, and the effects of moisture on insulation. When equipment intended for indoor installation is installed at the Contactor's convenience in areas where it is subject to dampness, moisture, dirt, or other adverse atmosphere until completion of construction; ensure that adequate protection from these atmospheres is provided that is acceptable to the District. Cap conduit runs during construction.
- D. Interpretation of Drawings:
  - 1. The Contactor shall inspect the site and verify all measurements and conditions and shall be responsible for the correctness of same. No extra compensation will be allowed because of differences between work shown on the drawings and measurements at the site.
  - 2. The Contactor shall examine the architectural, structural, mechanical and manufacturer's drawings for the various equipment in order to determine exact routing and final terminations for all conduits and cables. Conduits shall be installed as near as possible to equipment enclosure.
  - 3. All equipment shall be located and installed so that it will be readily accessible for operation and maintenance. The District reserves the right to require minor changes in locations of equipment, prior to installation, without incurring any additional costs or charges.
  - 4. Existing Conditions:
    - a. The electrical drawings were developed from past record drawings and information supplied by the District.
    - b. Carry out any work involving the shutdown of existing services to any piece of equipment now functioning or the tie-in of equipment to the existing system at such time as to provide the least amount of inconvenience to the District. Provide such work when directed by the District.
    - c. Prior to starting any work, the Contactor shall obtain all the information of the underground utilities or obstructions from the District and take proper precautions to locate the utilities.

## 1.02 References

- A. Electrical work, including connection to electrical equipment integral with mechanical equipment described elsewhere in these specifications, shall be performed in accordance with the latest published regulations of the following codes and standards:

<u>Reference</u>	<u>Title</u>
	State Codes and Ordinances and Inspecting Authorities
	Local Codes and Ordinances and Inspecting Authorities
	The National Board of Fire Underwriters
NFPA	National Fire Protection Association
UL	Underwriters Laboratories
NEMA	National Electrical Manufacturers' Association
ANSI	American National Standards Institute
IEEE	Institute of Electrical and Electronic Engineers
IPCEA	Insulated Power Cable Engineers Association
OSHA	State Department of Industrial Safety
	State Public Utilities Commission
NEC	National Electrical Code (NEC) for all items not specifically covered the state and local ordinance.
NFPA 79	Electrical Standard for Industrial Machinery

- B. Nothing in these special provisions or on the drawings shall be interpreted as permission or direction to violate any governing code or ordinance.
- C. Materials and equipment used in the performance of the electrical construction shall be fully UL approved for the class of service for which they are intended prior to submittal of shop drawings.
- D. Without limiting the generality of other requirements of these specifications, all work specified herein shall conform to or exceed the applicable requirements of the National Electric Code (NEC). Where a local code or ordinance is in conflict with the NEC, the provisions of said local code ordinance shall take precedence.
- E. The construction and installation of all electrical equipment and materials shall comply with all applicable provisions of the Cal OSHA Safety orders (Title 8, CCR), State Building Standards, and applicable local codes and regulations
- a. Conformance with space allocations and requirements for operations from mechanical or electrical services provided without necessitating changes in details and construction or related work.

## 1.03 Submittals

- A. Materials and Equipment Schedules: The Contractor shall deliver to the District a complete list of all materials, equipment, apparatus, and fixtures which it proposes to use. The list shall

include sizes, names of manufacturers, catalog numbers, and such other information required to identify the items.

- B. The submittal package for each individual equipment or groups of related equipment shall be complete and in accordance with this Section. The purpose of this provision is to ensure compatibility of all components specified under the specific technical specification and to provide sole source responsibility for system performance and maintenance. Notwithstanding these provisions, however, the Contactor is not relieved of its responsibility for the indicated portions of the work. The following, as a minimum, shall be submitted:
1. Manufacturer and manufacturer's type and designation
  2. Manufacturer's catalog data indicating rated capacity, efficiency, rated output and other characteristics
  3. Any exception to these specifications along with justification for each exception shall be clearly stated on the first page of the submittal
  4. Shop drawings
  5. Parts list with material of construction
  6. Installation requirements, showing various clearances required
  7. Details of all appurtenances to be furnished with the specified item
- C. Shop drawings are required for materials and equipment listed in this and other sections. Shop drawings shall provide sufficient information to evaluate the suitability of the proposed material or equipment for the intended use, and for compliance with these Specifications. The following shall be included:
1. Front, side, and rear elevations, footprints and top views, with dimensions
  2. Location and size of conduit entrances and access plates
  3. Component data
  4. Connection diagrams, terminal diagrams, schematic wiring diagrams, conductor size, and type, etc.
  5. Method of anchoring and embedded structural members; weight
  6. Finish
  7. Nameplates
  8. Temperature limitations, as applicable
  9. Rating of equipment as per specifications and drawings
  10. NEMA rating of enclosures
  11. Approved listing
- D. Catalog data shall be submitted to supplement all shop drawings. Catalog cuts, bulletins, brochures, or the like or photocopies of applicable pages thereof shall be submitted for mass produced, non-custom manufactured material. These catalog data sheets shall be stamped to indicate the project name, applicable Specification section and paragraph, model number, and options. This information shall be marked in spaces designated for such data in the stamp.

- E. Record Drawings: In addition to the Record Drawings as a part of the record drawing requirements specified in the General Requirements, the Contractor shall show depths and routing of all concealed below-grade electrical installations. Said set of record drawings shall be available to the District and the Inspector during construction. After final inspection, the Contractor shall transfer all record drawing information to a set of reproducible vellums which shall then be delivered to the District. In addition, the Record Drawings shall show all variations between the work as actually constructed and as originally shown on the Drawings, based upon information supplied by the Contractor.
- F. Manufacturer's Drawings: One set of equipment manufacturer's drawings shall be submitted to the District for its records.
- G. The Contactor shall obtain and submit from the manufacturer a list of suggested spare parts for each piece of equipment according to the provisions of spare parts of the General Requirements. After approval, Contactor shall furnish such spare parts suitably packaged, identified with the equipment number, and labeled. Contactor shall also furnish the name, address, and telephone number of the nearest distributor for each piece of equipment. All spare parts are intended for use by the District, only. Any spare parts which the District permits the Contactor to use for startup activities shall be replaced by the Contactor prior to the District's acceptance of beneficial use of the equipment.
  - 1. During the term of this Contract, the Contactor shall notify the District in writing about any manufacturer's modification of the approved spare parts, such as part number, interchangeability, model change or others. If the District determines that the modified parts are no longer applicable to the supplied equipment, the Contractor at its expense shall provide applicable spare parts

#### **1.04 Quality Assurance**

##### **A. Performance and Design Requirements**

- 1. Arrangement: The drawings are generally diagrammatic and the location of outlets and equipment terminals are approximate unless detailed or dimensioned. The exact locations and routing of cables and conduits shall be governed by structural conditions, physical interferences and the location of electrical terminations on equipment.
- 2. The Contactor shall examine the structural and mechanical plans and shop drawings for the various equipment to determine exact routing and final terminations for all raceways and cables. Conduits shall be stubbed up as near as possible to equipment terminals and shall be within the concrete base for the equipment or a separate concrete curb.
- 3. All conduit and equipment shall be installed in such a manner as to avoid all obstructions and to preserve head room and keep openings and passageways clear. Lighting fixtures, switches, convenience outlets, and similar items shall be located within finished rooms, as shown. Where the Drawings do not indicate exact locations, the Contactor shall submit proposed locations to the District for review. Where equipment is installed without instruction and must be moved, it shall be moved without additional cost to the District.
- 4. All work, including installation, connection, calibration, testing, and adjustment, shall be accomplished by qualified, experienced personnel working under continuous, competent supervision. The completed installation shall display competent work, reflecting adherence to prevailing industrial standards and methods.
- 5. Protection of Equipment and Materials: The Contactor shall provide adequate means for and shall fully protect all finished parts of the materials and equipment against damage

from any cause during the progress of the work and until acceptable by the District and the Inspector.

6. All materials and equipment, both in storage and during construction, shall be covered in such a manner that no finished surfaces will be damaged, marred, or splattered with water, foam, plaster, or paint. All moving parts shall be kept clean and dry.
7. The Contactor shall replace or have refinished by the manufacturer, all damaged materials or equipment, including face plates of panels and switchboard sections, at no expense to the District.
8. Tests: The Contactor shall make all tests required by the District or the Inspector or other authorities having jurisdictions as per applicable standards. All such tests shall be performed in the presence of the District or the Inspector. The Contactor shall furnish all necessary testing equipment and pay all costs of tests, including all replacement parts and labor necessary due to damage resulting from damaged equipment or from test and correction of faulty installation
9. Standard test reports for mass-produced equipment shall be submitted along with the shop drawing for such equipment. Test reports on testing specifically required for individual pieces of equipment shall be submitted to the District and the Inspector for review prior to final acceptance of the project.
10. Any test failure shall be corrected in a manner satisfactory to the District and Inspector.
11. The Contactor shall furnish without extra charge any additional material and labor which may be required for compliance with these laws, rules, and regulations, even though the work is not mentioned in these particular specifications or shown on the drawings.

**B. Operating Requirements:**

1. Contactor's Record Drawings: The Contactor shall maintain a neatly marked set of record drawings showing the installed location and routing of conduits, trays, cables, junction boxes, pull boxes, outlets, and interconnection circuits, etc., and the current status of control circuits as reflected on the control diagrams to the satisfaction of the District.
2. Inspection: The Contactor shall cooperate with the District and shall provide assistance at all times for the inspection of the electrical work performed under this contract. The Contactor shall remove covers, operate machinery, or perform any reasonable work which, in the opinion of the District, is necessary to determine the quality and adequacy of the work.

**C. Quality of Materials**

1. All electrical materials used on this project shall be new and free from defects.
2. All electrical materials used on this project shall conform where applicable, to the following standards, unless otherwise noted:
  - a. NEMA - National Electrical Manufacturers Association
  - b. ANSI - American National Standards Institute
  - c. UL - Underwriters Laboratories, Inc
3. Each type of material shall be of the same manufacturer and quality throughout the work.

### **1.05 Delivery, Storage, and Handling**

- A. Throughout this Contract, provide protection for materials and equipment against loss or damage in accordance with provisions elsewhere in these Contract Documents. Throughout this Contract, follow manufacturer's recommendations for storage. Protect everything from the effects of weather. Prior to installation, store items in clean, dry, indoor locations. Store in clean, dry, indoor, heated locations items subject to corrosion under damp conditions, and items containing electrical insulation, such as transformers, conductors, motors, and controls. Energize all space heaters furnished with equipment. Provide temporary heating, sufficient to prevent condensation, in transformers, switchgear, switchboards, motors, and motor control centers which do not bare space heaters.
- B. Shipment: The equipment furnished under this Contract shall be shipped in sealed, weather-tight, enclosed conveyances in a manner designed to protect the equipment against damaging stresses during transport.
- C. Inspection
  - 1. The Contactor shall cooperate with the District and shall provide assistance at all times for the inspection of the electrical work. Remove covers, operate machinery, or perform any reasonable work which, in the opinion of the District, will be necessary to determine the quality or adequacy of the work.
  - 2. If any material does not conform to these specifications, the Contactor shall, within three days after being notified by the District, remove the materials from the premises.
  - 3. Work shall not be closed in or covered before inspection and approval by the District. Cost of uncovering and making repairs where un-inspected work has been closed in shall be borne by the Contactor.
- D. Supervision and Workmanship
  - 1. The Contactor shall employ a competent electrical foreman on the job throughout the entire period of construction to see that his work is carried on without delay and completed as rapidly as possible.
- E. Cleanup
  - 1. All parts of the materials and equipment shall be thoroughly cleaned. Exposed parts shall be thoroughly cleaned of cement, plaster, and other materials. All oil and grease spots shall be removed with a non-flammable cleaning solvent. Such surfaces shall be carefully wiped and all cracks and corners scraped out.
  - 2. During the progress of the work, the Contactor shall clean the premises and shall leave the premises and all portions of the site free of debris

### **1.06 Project / Site Conditions**

- A. General: For purposes of delineating electrical enclosure and electrical installation requirements of this project, the control panels for the chemicals shown on the Drawings shall be protected against corrosion and hazards associated with these chemicals. All conduits and electrical installation shall be protected against corrosion and conform to the referenced code requirements.
- B. Seismic Consideration
  - 1. All structures and installation shall be in accordance with the requirements of UBC and/or SEAC for the project site.

2. Each piece of equipment installed shall be anchored as required in the UBC for Seismic Zone category for the project site. No equipment shall be anchored to vertical structural elements without written approval of the District.
3. Vibration isolated equipment shall be provided with snubbers capable of retaining the equipment in its designated location without any material failure or deformation of the snubbers when exposed to a vertical or horizontal force at the contact surface equal to 100 percent of the operating weight of the equipment. Air gaps between retainer and equipment base shall not exceed 1/4 inch.
4. All raceways, ductwork, accessories, and appurtenances, furnished with equipment shall be anchored to resist a lateral seismic force specified for the project site without excessive deflection. This force shall be considered acting at the center of gravity of the piece under consideration.
5. Calculations and shop drawings shall be submitted for all anchorage details. All calculations shall be made and signed by a registered engineer in California.

#### C. Unclassified Field Locations

1. Field equipment located in interior areas which have not been classified as hazardous locations as defined by the National Electrical Code, Article 500, may be subjected to ambient temperatures varying from 10 degrees F and 115 degrees F and relative humidity ranging from 10 to 90 percent. Incidental quantities of hydrogen sulfide gas and dust also may be present.
2. In exterior areas, ambient temperatures may vary from 10 degrees F and 115 degrees F with strong direct radiation from the sun. Relative humidity in all exterior field areas will vary from 10 to 100 percent with condensation and icing occurring. All areas may have trace quantities of hydrogen sulfide gas with windblown dust, sand, hail, and rain occurring.
3. In exterior locations, exposed conduits shall be Rigid Steel. Fittings shall have gasketed covers. Provisions shall be made to drain the fitting or conduit system. Threaded fastening hardware shall be stainless steel. Mounting brackets shall be galvanized steel. Attachments or welded assemblies shall be galvanized after fabrication. Where shown on the plans in outdoor locations, Instruments and control cabinets, and panels shall be "Weatherproof NEMA Type 3R." Enclosures shall be mounted 1/4-inch from walls to provide an air space, unless specifically shown otherwise.

### 1.07 Maintenance

#### A. Information to be provided:

1. The Contactor shall also provide the following additional information for each item of equipment in the operation and maintenance manuals:
  - a. Wiring and interconnection diagrams which show terminal blocks of all distribution and control assemblies; all power, control and signal raceways; junction and pull boxes; all devices; and all interconnecting wiring. Diagrams shall show conductor tag numbers, control wire color code as applicable and power wire and cable sizes.
  - b. The outgoing power and control wires shall be run as single lines representing the raceways and shall show any junction boxes or ancillary control devices that may be located in the raceway system or tapped off the raceway along the route. All raceways shall be appropriately identified showing the proposed tag inscription. Wires are to be

fanned out and labeled at each point showing the terminal number of the wire and typical wire tags. For factory wired equipment, both the factory terminal numbers as well as the terminal numbers shown on the contract control diagrams shall be shown. If additional space is required, more than one sheet may be used for the connection diagram.

- c. Operation and maintenance data
- d. Maintenance manuals
- e. Installation certificates

### **1.08 Measurement and Payment**

- A. Payment for the work in this section shall be included as part of the lump-sum bid amount stated in the Proposal.

## **PART 2 - PRODUCTS**

### **2.01 Equipment and Materials**

- A. All material and equipment shall be new, free from defects, of current manufacture, and of the quality specified or shown, and shall be listed by the Underwriters Laboratories Inc. (UL) for the purpose for which it is to be used where such listing has been applied by UL to similar products. Each type of material shall be of the same manufacture and quality throughout the work.
- B. Where more than one unit of the same class of material or equipment are required, provide products of a single manufacture. Component parts of materials or equipment of the same manufacturer are preferred.
- C. All electrical equipment shall be approved by a testing laboratory recognized by the District and shall conform to all applicable requirements of the latest edition of the California Building Code. In lieu of such approval, the Contactor must submit the equipment for approval to the independent NETA certified electrical testing laboratory. This shall include the plant preferred list of equipment and components specified in the plans and specifications. The Contactor shall also include in his delivery schedule the approval time required by the independent NETA certified electrical testing laboratory for equipment without UL listing.
- D. Unless otherwise indicated, provide materials and equipment which are the standard products of manufacturers regularly engaged in the production of such materials and equipment. Provide the manufacturers' latest standard design that conforms to these Specifications.
- E. Equipment Finish: Provide materials and equipment with manufacturers' standard finish system, in accordance with Division 9 Finishes. Provide manufacturers' standard finish color, except where specific color is required by the District. If manufacturer has no standard color, finish equipment in accordance with Division 9 Finishes with ANSI No. 61, light gray color.

### **2.02 Raceways, Fittings and Supports**

- A. All raceways shall be rigid galvanized steel conduit unless otherwise indicated on the Drawings or in these specifications. With the exception of raceways with non-linear loads, underground raceways shall be polyvinyl chloride (PVC) Schedule 40. Raceways installed in stud walls shall be electrical metallic tubing (EMT). All raceways installed indoor and exposed



shall be rigid galvanized steel. Flexible metal conduit shall be employed for connections to lighting fixtures. Final raceway runs to electrical equipment on machinery requiring flexibility or that is subject to vibration shall be liquid-tight flexible metal conduit. Minimum size of all conduits shall be 3/4-inch.

#### B. Rigid Steel Conduit

1. Comply with Underwriter's Laboratories UL-6 specification, ANSI C80.1-77 and Federal specification WW-C-581E (77 APR 04) or latest revisions. Rigid steel conduit shall be zinc coated both inside and outside after fabrication by hot-dip galvanizing. The threads shall also be hot-dip galvanized.
2. Use rigid steel conduit, including bushings, couplings, elbows, nipples, and other fittings, galvanized by hot-dipping, and meeting the requirements of ANSI C80.1 and ANSI C80.4, UL.
3. Do not use setscrew type couplings, bushings, bends, nipples, and other fittings, unless approved by the District or the Inspector. Factory bends are not permitted unless approved by the District or the Inspector. Conduit bending radius shall not be less than the minimum cable bending radius of the cable to be installed.

#### C. Electrical Metallic Tubing (EMT):

1. Comply with Underwriter's Laboratories UL 797, ANSI C80.3-77 and Federal Specification WW-C-563 (73 DEC 04) or latest revisions. EMT shall be galvanized.

#### D. PVC Conduit:

1. Nonmetallic conduit shall be high impact polyvinyl chloride (PVC), Schedule 40 unless otherwise noted in this Specification Section or where shown otherwise on the contact drawings. The nonmetallic conduit shall be corrosion resistant. Minimum tensile strength shall be 6000 psi, and minimum compressive strength shall be 9000 psi. The material shall have a smoke emission rate of not more than 5.1 grams/100 grams by the Arapahoe smoke chamber test.
2. Use rigid PVC Schedule 40 conduit, UL listed for concrete-encased, underground direct burial, concealed and direct sunlight exposed use, and UL listed and marked for use with conductors having 90 degrees C insulation. Use conduits, couplings, bushings, elbows, nipples, and other fittings meeting the requirements of NEMA TC 2 and TC 3, Federal Specification W-C-1094, UL, NEC, and ASTM specified tests for the intended use.

#### E. PVC Coated Rigid Steel

1. PVC coated conduit shall be hot-dip galvanized including the threads. The interior and exterior surfaces shall be coated with 2 mils thick urethane. The exterior of the conduit shall be PVC coated to a minimum 40-mil thickness. The PVC coating shall be permanently bonded to the conduit. The coating shall have a minimum tensile strength of 3500 psi. The interior shall be coated with a urethane coating no more than 7 mils thick.
2. A PVC coated coupling shall be furnished with each length of conduit. The PVC sleeve of the coupling shall equal the outside diameter of the coated conduit and shall extend 1-1/2 inches from each end of the coupling.
3. Prior to coating, the galvanized conduits and fittings shall be UL listed. Use PVC coated fittings with the same interior and exterior coating requirements. PVC coated fittings and sleeves shall be completely watertight to prevent moisture from penetrating the interior of the conduits and fittings.

4. The PVC coating shall be resistant to ultra-violet rays when installed outdoors. The conduit and fittings shall meet all the requirements of NEMA RN-1 1989.

#### F. Flexible Metal Conduit

1. Flexible metal conduit shall be formed from spirally wound galvanized steel strip with successive convolutions that are securely interlocked. Minimum size of the flexible metal conduit shall be 3/4 inch. Fittings shall be of the compression type. Lengths shall not exceed 60 inches. Flexible metal tubing shall include a code size insulated green ground conductor.

#### G. Flexible Metal Conduit, Liquid-Tight

1. Use UL listed liquid-tight flexible metal conduit consisting of galvanized steel flexible conduit covered with an extruded PVC jacket and terminated with nylon bushings or bushings with steel or malleable iron body and insulated throat and sealing O-ring.
2. Provide external grounding connector and appropriately sized grounding conductor to assure ground continuity.
3. Minimum size shall be 2 inch.

#### H. Wireways

1. All wireways and auxiliary gutters shall be JIC sectional flange oil-tight type with hinged covers. Minimum size shall be 8 inches by 8 inches unless otherwise noted. All wireways shall be painted.
  2. Provide outdoor, rain-tight steel-enclosed wireway and auxiliary gutter where indicated. Utilize wireways and fittings that are UL listed, and have a cover that can easily be removed. Manufacturers and types: Square D Square-Duct; General Electric Type HS; or equal.
- I. Use cable sealing fittings forming a watertight nonslip connection to pass cords and cables into conduit. Size cable sealing fitting for the conductor OD. For conductors with OD's of 1/2-inch or less, provide a neoprene bushing where the conductor enters the connector. Use Crouse-Hinds CGBS, Appleton CG Series, or equal, cable sealing fittings.

#### J. Fittings for Rigid Steel

1. Fittings used with rigid galvanized steel conduit shall be hot-dip galvanized. Locknuts shall be extra heavy galvanized steel for sizes through 2 inches. Locknuts larger than 2 inches shall be galvanized malleable iron. Bushings shall be galvanized malleable iron with insulating collar. Grounding bushings shall be of the locking type and shall be provided with feed-through compression lugs for securing the ground cable. Unions shall be galvanized ferrous alloy types UNF or UNY. Thread-less fittings shall not be utilized with rigid galvanized steel conduits.
2. Expansion fittings in embedded runs shall be of the watertight type and shall be provided with an internal bonding jumper. The expansion material shall be neoprene and shall allow for 3/4-inch movement in any direction.
3. Use insulated throat bushings of metal with integral plastic bushings rated for 105 degrees C.
4. For insulated throat bushings for rigid steel conduit, use Thomas & Betts Nylon Insulated Metallic Bushings, or O.Z. Gedney Type B, or equal.
5. Use Myers Scru-Tite, or equal hubs for rigid steel conduit.

6. Use conduit bodies for rigid steel conduit of metal and sized as required by the NEC (NFPA 70-2008). Use Appleton Form 35 threaded Unilets; Crouse-Hinds Mark 9 or Form 7 threaded condulets; Killark Series O Electrolets; or equal, for normal conduit bodies for rigid steel conduit. Where conduit bodies for rigid steel conduit are required to be approved for hazardous (classified) locations, use conduit bodies manufactured by Appleton, Crouse-Hinds, or Killark, or equal.
7. Use only couplings for rigid steel conduit supplied by the conduit manufacturer.
8. Use Appleton Type EYF, EYM, or ESU; Crouse-Hinds Type EYS or EZS; Killark Type EY or EYS; or equal, sealing fittings for rigid steel conduit. Where condensate may collect on top of a seal, provide a drain by using Appleton Type SF Crouse-Hinds Type EYD or EZD, or equal Drain Seal.
9. Use Appleton Type ECDB, Crouse-Hinds ECD, or equal drain fittings for rigid steel conduit.

#### K. Fittings for PVC Conduit

1. Fittings used with PVC conduits shall be of the PVC solvent-weld type and shall be of the same material as the conduit.
2. Expansion fittings shall be provided as recommended by the manufacturer.

#### L. Fittings for PVC Coated Rigid Steel Conduit

1. Fittings with PVC coated rigid steel conduit shall be PVC coated in a manner similar to the conduit. The exterior of the fittings shall be coated with 2-mil thick urethane prior to the application of the 40-mil exterior PVC coat. Interior of the fittings shall have a 2-mil urethane finish. The fittings shall have ribbed finish to assist in the installation of fittings.
2. Thread-less fittings shall not be used with PVC coated rigid steel conduit.
3. Bushings and ground bushings shall be as specified for rigid galvanized steel conduits.

#### M. Fittings for Flexible Metal Conduit

1. Fittings used with flexible metal conduit shall be compression type, cadmium-plated malleable iron body with locknut and bushing
2. Where applicable, 45- and 90-degree fittings shall be used

#### N. Fittings for Liquid-Tight Flexible Conduit

1. Fittings used with liquid-tight conduit shall have cadmium-plated malleable iron body and gland-nut, brass grounding ferrule threaded to engage conduit. These fittings shall also use spiral and "O" ring seals around the conduit, the box connection and insulated throat. The insulated throat connectors for liquid-tight flexible metal conduit of metal will have an integral plastic bushing rated for 105 degrees C, and of the long design type extending outside of the box or other device at least 2-inches.
2. Use Thomas & Betts Super-Tite Nylon Insulated Connectors or equal
3. Where applicable, 45- and 90-degree fittings shall be used

#### O. Raceway Supports

1. General: Raceway support systems shall be designed to provide a factor of safety of no less than five.

2. Conduit Supports: Conduit supports shall be stainless steel pipe straps used with galvanized clamp backs and nesting backs where required.
3. Ceiling Hangers: Ceiling hangers shall be adjustable stainless steel, pipe hangers. Straps or hangers of plumber's perforated type will not be acceptable. Hanger rods shall be 2-inch minimum galvanized all-thread rod and shall meet or exceed ASTM A193-B7 and ASME Boiler and Pressure Vessel Code specifications. Trapeze, rod type hangers shall not be loaded in excess of 700 pounds per rod. Where loading exceeds this value, rigid frames shall be provided.
4. Racks: Racks shall be constructed from framing channel. Channels and all associated hardware shall be stainless steel. Channels attached directly to building surfaces shall be 14-gage minimum material 1-5/8 inches wide by 13/16 inch deep. All other channels shall be 12-gage minimum material 1-5/8 inch wide by 1-5/8 inch minimum depth. Racks shall be designed to limit deflection to 1/360 of span. All exposed ends of framing channel shall be covered with manufacturer's standard plastic inserts.

**P. Raceway Tags**

1. Provide permanent, nonferrous metal markers with raceway designations pressure stamped, embossed, or engraved onto the tag.
2. Tags relying on adhesives or taped-on markers are not acceptable.
3. Attach tags to raceways with noncorrosive wire.

**Q. Warning Tape:**

1. Provide heavy-gauge, yellow plastic tape of 6 -inch minimum width for use in trenches containing electric circuits. Utilize tape made of material resistant to corrosive soil. Use tape with printed warning that an electric circuit is located below the tape. Manufacturers and types: ITT Blackburn Type YT or RT; Griffolyn Co. Terra-Tape; or equal

**2.03 Junction and Device Boxes and Fittings**

- A. Junction boxes; device boxes; fixture support boxes; and oblong, round and rectangular conduit fittings shall be hot-dip galvanized cast ferrous alloy. Integrally cast threaded hubs or bosses shall be provided for all conduit entrances and shall provide for full 5-thread contact on tightening. Drilling and threading shall be done before galvanizing. The cover plate shall be of similar hot-dip galvanized cast ferrous alloy material. A full body neoprene gasket and Type 316 stainless steel screws shall be provided for all covers. Hubs for connection of conduit to sheet steel junction, device or terminal boxes shall be made of cast ferrous alloy, electroplated with zinc, and shall have insulating bushings. The hubs shall utilize a neoprene "O"-ring and shall provide a watertight connection.
- B. Outlet and Switch Boxes: Outlet and switch boxes shall be FS or FD boxes as manufactured by Crouse-Hinds, Appleton, or equal. Boxes shall be provided with blank covers for all unused openings.
- C. Ganged Boxes: Outlet and device boxes shall be ganged where two or more devices are located together. Device covers shall be ganged for gang boxes and shall be gasketed with suitable neoprene gaskets to fit the devices and box used.
- D. Sheet Steel Boxes: Boxes larger than FD boxes shall be fabricated from code gage steel, finished inside and out as specified for terminal cabinets. Before finish is applied, a grounding pad drilled for two bolted grounding lugs or a grounding stud shall be welded to the inside of the box. All hardware shall be Type 316 stainless steel. Boxes shall, as a minimum, meet

NEMA 12 and JIC requirements and shall be NEMA 4 where exposed to the weather or dripping water.

- E. Boxes in Corrosive Areas: Boxes and fittings located in corrosive areas shall be NEMA 4X. This material shall be fiberglass reinforced polyester with minimum properties as follows:
  - 1. Compressive strength: 28,000 psi.
  - 2. Flexural strength: 15,000 psi per ASTM D790 and D675.
  - 3. Tensile strength: 12,000 psi per ASTM D638.
  - 4. Flame-resistant and self-extinguishing per ASTM D635
- F. All conduit entries shall use ferrous alloy hubs with 40 mil epoxy coating. All conduit entering plastic boxes and any exposed metal on plastic boxes which is not isolated from the interior of the box shall be bonded together with a suitable grounding conductor. Corrosive areas shall be as shown on the drawings.

## **2.04 Manholes, Handholes & Pullboxes**

- A. Manufacturers: Christy Concrete Products; Jensen Precast, Inc.; Brooks Products, Inc.; or equal.
- B. Equipment and Materials
- C. Concrete
  - 1. The structural concrete shall conform to the requirements of Division 3 of these specifications.
  - 2. The aggregate shall be free of deleterious substances causing reaction with hydrogen sulfide.
  - 3. The cement shall be Portland cement conforming to ASTM C150, Type II. Cement content shall be sufficient to produce a minimum strength of 3000 psi.
- D. Reinforcing Steel
  - 1. All reinforcing steel including welded wire mesh shall be as shown. All reinforcing shall be sufficiently tied to withstand any displacement during placement of concrete. All bars shall be hard grade billet steel conforming to ASTM A15. Bars 1/4-inch round and smaller shall be deformed in accordance with ASTM A305.
  - 2. Design loads shall consist of dead load, live load, impact and, in addition, loads due to water table and any other loads which may be imposed on the structure.
  - 3. Live loads shall be for H-20 loading per AASHTO standards for highway and bridges.
- E. Box dimensions shall be the minimum sized as shown on Contract drawings and in accordance with size, quantity of conductors, and conduit clearances per NEC Article 314 requirements.
- F. Manholes: Manholes may be of single- or multiple-section construction. Multiple sections shall be fitted to form watertight joints using tongue and groove joint with flexible plastic adhesive sealing compound.
- G. Covers
  - 1. Manholes, handholes and pull boxes shall be provided with cast iron or galvanized steel covers and mounting rings reinforced for H-20 loading.

2. Pull boxes, 4 feet square and less than 4 feet 6 inches deep shall have a two-piece rectangular cover. Pull boxes, 2 feet by 3 feet in size shall have a one-piece rectangular cover. All other pull boxes, manholes, and handholes shall have a 30-inch diameter ring cover as shown. Covers shall be bolted down with recessed bolt heads.
3. Each manhole, handhole and pull box cover shall be identified by a cast in label. The cover shall be inscribed with the cast letters ELECTRICAL for electrical service or SIGNAL for communication or instrumentation. In addition, the identification number of the manhole or pull box shall be installed by means of bead weld in letters not less than 1 inch high.
4. Where located in streets or other heavy traffic bearing areas, covers shall be of the heavy street traffic type. When located in sidewalks or other non-vehicular traffic areas and with the approval of the construction manager covers may be of the parkway type.
5. Utilize heavy-duty type frames and covers made of cast iron, suitable for H-20 loading, and having machined bearing surfaces. Provide indented type covers, solid top design, with two drop handles each. On the upper side of each cover, cast or burned by welder, in integral letters not less than 2-inches high appropriate titles, ELECTRICAL, SIGNAL or TELEPHONE.

#### H. Inserts

1. Concrete inserts for cable racks shall be provided in the walls of each manhole and pull box, one in a 4-foot wall and two in a 6-foot or 8-foot wall.
2. Cable pulling eye bolts shall be provided opposite each conduit entry area, and the inserts shall be designed to provide a minimum of 5,000 pounds tensile strength to accommodate all cable pulls.

#### I. Conduit Entrances

1. Entries of conduits through walls shall be terminated in a bell flush with the interior wall.
2. Conduit wall penetrations shall be repaired with non-shrink grout.
3. Provide raceway entrances on all four sides. For raceways installed under this Contract, knockout panels or precast individual raceway openings may be used. On sides where no raceways are installed under this Contract, provide knockout panels for future raceway installation.
4. Slope floors toward drain points, leaving no pockets or other non-draining areas.
5. Utilize maintenance hole and handhole hardware of steel, hot-dip galvanized after fabrication

J. All prefabricated maintenance holes shall be shop inspected before delivery to the site.

K. The location of pull boxes, manholes and vaults are shown on Contract drawings to be at their approximate location. The contractor shall adjust these locations to avoid conflicts with other underground utilities.

L. Limit the number of directional changes to the conduit to total no more than 270 degrees in any run between pull points. Where required to ease pulling and as necessary to meet the NEC requirements, the Contractor shall supply and install pull boxes, manholes or vaults, even though not shown on the Drawings at no additional cost to the District.

#### M. Preparation

1. The pre-cast base section shall be placed on a prepared base of 12 inches of sand or gravel for even distribution of load before leveling. A plastic preformed joint sealant shall be applied between sections. The joint sealant compound shall be impermeable to water, have a high immediate bonding strength, and maintain permanent plasticity. The assembly shall be so located that surrounding paving shall slope up 1 inch above finish to prevent water settling on the cover. In unpaved areas, the slope shall be up 3 inches.
2. Conduit runs between two vaults, manholes, or pull boxes shall be limited to a maximum of 300 feet or less 50 feet for every 90 degrees of conduit change in direction

#### N. Installation

1. The location of manholes, handholes, and pull boxes are shown on the Contract Drawing at their approximate location. The Contractor shall adjust the location of these manholes, handholes, and pull boxes to avoid conflict with other underground utilities at no additional cost to the District. Provide excavation, shoring, bracing, backfilling, grading, etc., in accordance with requirements specified elsewhere in these Contract Documents.
2. Make installation so that raceways enter manholes, handholes or pullboxes at nearly right angles and as near as possible to one end of a wall, unless otherwise indicated.
3. Pull Boxes, Manholes and Vaults shall be installed accurately to match the surrounding building outline, pavement or sidewalk grade. Set pullboxes parallel or perpendicular to adjacent structures.
4. Install one ground rod in each manhole and handhole. Connect all noncurrent-carrying metal parts in the manholes and any metallic raceway grounding bushings to this ground rod with No. 6 AWG (minimum) copper conductor.
5. Vault, Manhole and Pull Box Entry: Conduits entering underground pull boxes and vaults shall be horizontal, except when required otherwise by Power or Telephone Utility Standards. Conduit shall not enter through the bottom of boxes unless boxes are located above grade.
6. Install covers flush within finished paved or concrete surfaces. In unfinished areas, install covers one inch (1") above finished grade.

#### O. Field Quality Control

1. Keep boxes, vaults and manholes closed at all times when not being accessed to prevent entry of foreign matter. Cover to protect them against dirt, paint, water, chemical or mechanical damaged products prior to final acceptance.
2. Clean and remove all debris from maintenance holes and handholes whether new or existing.
3. At the contractor's discretions and with approval of the District, the Contractor may provide additional manholes, handholes and pull boxes, at no additional cost to the District.

### **2.05 Wire and Cables, 600 Volts and Below**

A. The use of a manufacturer's name and model or catalog number is for the purpose of establishing the standard of quality and general configuration desired only. Products of other manufacturers will be considered in accordance with the General Requirements.

B. Building wire, power and control cable:

1. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
  - a. Alpha Wire Corporation
  - b. American Insulated Wire Corporation
  - c. Belden Wire and Cable
  - d. Carol Cable Company
  - e. General Cable
2. Conform to UL 444, Communications Cable, NEC type CMP, tinned copper conductors, 100 percent shield coverage, single TSP, Teflon insulated with Teflon jacket in all applications except small diameter.
3. Multiple conductors, small diameter instrumentation cable shall be used where existing conduits limit conduit space as called out on drawings:
  - a. Plenum type single or multi paired, twisted pairs, overall shield with drain wire
  - b. FEP or FPR insulation and jacket
  - c. Moisture and flame resistance
  - d. Jacket thickness 0.015 IN minimum
  - e. Maximum outside diameter:
    - 1) 1 PR – 0.125 IN
    - 2) 2 PR – 0.180 IN
4. Telephone cable:
  - a. Solid conductors, tinned copper, No. 24 AWG
  - b. 150 volt, vinyl insulated
  - c. UL listed 2576
- C. Unless otherwise indicated, provide stranded conductors, except provide solid conductors where No. 10 AWG and No. 12 AWG are designated for branch circuit power wiring in lighting and receptacle circuits.
- D. For all direct burial and aerial conductors and cables, provide conductors with UL labeling "TYPE USE" and RHW insulation with heavy-duty, black, neoprene sheath meeting the physical requirements and minimum thickness requirements of ICEA S-19-81 and NEMA WC 3.
- E. Where flexible cords and cables are specified, provide Type SO, 600-volt, with the number and size of copper conductors indicated.
- F. Insulation
  1. All conductors shall be rated at 600 Volts unless noted otherwise within this specification section.
  2. All wiring shall be type XHHW-2 unless otherwise noted within this specification section.
  3. All conductors shall be sized for operation at 75 degrees C maximum operating temperature.



4. For power conductors, provide all single conductors and individual conductors of multi-conductor power cables with integral insulation pigmentation of the designated colors, except conductors larger than No. 6 AWG may be provided with color coding by applying a heat shrink tube of the appropriate color.

#### G. Conductors

1. Unless specifically noted otherwise herein, all conductors for general wiring shall be a minimum of 98% conductivity, stranded, soft drawn copper. Aluminum or aluminum alloys are not acceptable.
2. 120 Volt control, indicator, signal and metering conductors may be #14 AWG, and shall be stranded.

#### H. Control Cable:

1. Control cable shall be Type SO extra flexible and shall consist of No. 16 copper conductors insulated for 600 volt service. The overall jacket shall consist of 7/64-inch neoprene minimum. The number of conductors shall be as shown on the drawings.

#### I. Grounding Wire

1. Ground wires, no. 1/0 AWG or larger tinned stranded bare copper cable. All smaller ground wires shall be insulated with green color insulation.

#### J. Connections

1. Wire nuts for joints, splices and taps for conductors #8 and smaller shall consist of a cone shaped expandable coil spring insert, insulated with a Teflon or plastic shell. Threaded or crimp types will not be accepted. Use "Skotchlock", "Hydent", or equal.
2. Terminals for stranded conductors #8 and smaller shall be a pre-insulated crimp type.
3. Lugs and connectors for conductors #6 and larger shall be compression types of one piece tubular construction with flat rectangular tongues. Two-hole lugs shall be used for sizes 4/0 and larger. Fittings for copper conductors shall be tin-plated copper.

#### K. Wire and Cabling Termination and Splicing

1. The following manufacturers are acceptable.
  - a. Burndy Corporation
  - b. Ideal
  - c. Minnesota Mining and Manufacturing Co
  - d. Penn Union
  - e. Thomas and Betts
  - f. Or Equal
2. Splicing of cables and wires in the manholes and handholes shall be kept at a minimum. Where it is possible to pull cables or wires directly through the manholes or handholes, splicing shall be moisture-proof and encapsulated using insulating sealing compound. Splicing kits similar to 3M Company 82A or 8500 Series shall be utilized.

#### L. Labeling

1. Provide complete power and control conductor identification system so that after installation, circuits can be easily traced from origin to final destination.

2. Conductor labels shall be white PVC tubing with machine printed black marking. Tubing shall be sized to fit conductor insulation. Adhesive strips are not acceptable. Machine printed markings, directly on conductors, will be accepted. Panduit, Thomas & Betts, or equal.
3. Tag conductors using a three-segment conductor numbering scheme which defines the origin of the conductor, the function of the conductor, and the destination of the conductor.
  - a. Example: MCCA-P-MCCB where MCCA is the origin, P is the function identification (P = power, C = control, S = signal, etc.), and MCCB is the destination.
  - b. For conductors with one point of origin and two or more destinations, expand the function identification number, e.g., PA, PB, etc.
  - c. Make the origin and destination identification the specific names for the equipment used in the Contract Documents. Make the instrumentation and control identification names exactly as designated, i.e., FT-S-121.
4. Sleeves shall be yellow or white tubing, sized to fit the conductor insulation, with machine printed black marking capable of accepting 24 machine printed character per sleeve label. Adhesive strips are not acceptable.

#### M. Pulling Lubricant

1. All cables shall be properly coated with pulling compound recommended by the cable manufacturer before being pulled into conduits so as to prevent mechanical damage to the cables during installation.
2. Other lubricants to be substituted must be accompanied by a statement from the cable manufacturer as to its acceptable use with the cable being installed.

#### N. Electrical Tape

1. Pressure sensitive vinyl
2. Premium grade
3. Heat, cold, moisture, and sunlight resistant
4. UL listed
5. Thickness, depending on use conditions: 7, 8.5, or 10 mil
6. For cold weather or outdoor location, tape must also be all-weather rated
7. Comply with UL 510

#### O. Color Coding and Labeling. Provide color coding throughout the entire network of feeders and circuits (600 volts and below) as follows:

Phase	240/120 Volts	208/120 Volts	240 Volts	480/277 Volts
Phase A	Black	Black	Black	Brown
Phase B	Red	Red	Red	Orange
Phase C	---	Blue	Blue	Yellow
Neutral	White	White	White	Gray
Ground	Green	Green	Green	Green

1. Phase conductors No. 10 AWG and smaller and neutral/ground conductors No. 6 and smaller shall have factory color coding with solid color insulation. Do not use onsite coloring of ends of conductors or apply colored plastic adhesives in lieu of factory color coding. Larger conductors may have onsite application of colored plastic adhesives at ends of conductors and at each splice.
2. Control wires shall have colored insulation. 120V control be red and 24VDC control blue and -24VDC to be blue with white stripe.

## 2.06 Wiring Devices

- A. Make like items of equipment the end products of one manufacturer in order to achieve standardization for appearance, operation, maintenance, spare parts and manufacture's service. Wiring devices shall be of the manufacturer and model numbers described in this specification section.
- B. General: All wiring devices shall be industrial extra heavy duty specification grade with provisions for back wiring and side wiring with captive-held binding screws. All receptacles shall be of the grounding type.
  1. Corrosion-Resistant Receptacles: Corrosion-resistant receptacles shall be of yellow nylon construction with all metal parts of Monel or Cupro-nickel complying with Federal Specification W-C-596d. Corrosion resistant receptacles shall be Cooper 5362GR Series, Hubbell HBL53CM62 Series, or equal.
  2. Special Purpose NEMA Configuration Receptacles: Special purpose NEMA configuration receptacles shall be industrial grade, corrosion resistant and shall be as follows:
    - a. Provide Manufacturer and Model Number, noted below, or approved equal.
    - b. Non-locking 125/250 volt, 20 to 60 ampere ratings shall be NEMA 14-20 through 14-60 series:

Ampere Rating	NEMA Rating	Cooper	Hubbell
20	14-20R	5479	HBL8410
30	14-30R	n/a	n/a
50	14-50R	5759	HBL9450A
60	14-60R	AH5754AP	HBL9460A

- c. Non-locking 250 volt, 3 phase, 15 to 60 ampere ratings shall be NEMA 15-15 through 15-60 series:

Ampere Rating	NEMA Rating	Cooper	Hubbell
15	15-15R	n/a	n/a
20	15-20R	n/a	HBL8420
30	15-30R	8430N	HBL8430A
50	15-50R	8450N	HBL8450A
60	15-60R	8460N	HBL8460A

- d. Locking 120/208 volt, 3 phase, 20 or 30 ampere ratings shall be NEMA L21-20 and L21-30:

Ampere Rating	NEMA Rating	Cooper	Hubbell
20	L21-20R	CWL2120R	HBL2510SW
30	L21-30R	CWL2130R	HBL2610SW

- e. Locking 250 volt, 3 phase receptacles shall be NEMA L15-20 or L15-30 as applicable:

Ampere Rating	NEMA Rating	Cooper	Hubbell
20	L15-20R	CWL1520R	HBL2420SW
30	L15-30R	CWL1530R	HBL2720SW

### C. Device Plates

#### 1. General

- a. Stainless steel device plates shall be engraved directly with the service legend. Engraving shall be 1/8 inch high with black filling. Cast ferrous metal plates shall be provided with engraved laminated phenolic nameplates with 1/8-inch white characters on black background. Nameplates for switches shall identify the panel and the circuit number and the area served. Nameplates for receptacles shall identify circuit and voltage, if other than 120 volts single phase. Engraving schedule shall be submitted for review prior to engraving.
- b. Device plates located in areas with suspended ceilings and stud walls shall be Type 302 stainless steel, satin finish, and 0.40-inch minimum thickness. Device plates in all other areas shall be cast ferrous metal with neoprene gasket and corrosion-resistant hardware. Receptacle covers exposed to weather shall be provided with while-in-use covers.
- c. Device covers for corrosion-resistant applications shall be yellow thermoplastic or aluminum construction with a spring-closed cover for the outlet. The receptacle cover shall be Hubbell 52CM22, or Cooper 7879FSCR or equal.

2. Receptacle Covers: Receptacle covers shall be heavy cast copper-free aluminum with a gasketed spring floor cover over each outlet. The receptacle cover shall have all exposed metal surfaces factory coated with a durable epoxy coating. Stainless steel screws and a neoprene gasket shall be provided with each receptacle cover

## 2.07 Pilot Devices

- A. Pushbuttons: Pushbuttons shall be heavy-duty oil-tight type; lockout-stop buttons shall be equipped with integral locking device and shall additionally be capable of receiving one 3/8-inch shackle padlock. Contact shall be rated as specified for selector switches. Unless otherwise shown, pushbuttons for field stations shall be provided with a watertight boot if the pushbutton is mounted on the outer surface of the enclosure.
- B. Indicating Lamps: Indicating lamps shall be oil-tight units. Units for alternating current systems shall include a 6-volt transformer and 6-8 volt No. 44 lamp and shall be of the illuminated pushbutton type with the pushbutton wired for the push-to-test function required. Lamps for 24 volts or less DC systems shall be full voltage type. Higher voltage DC systems shall utilize a No. 1835 lamp with resistor as required. Appropriate lens caps shall be provided.
- C. Nameplates: Each individual controller, control station, field panel, and control device shall have a nameplate designating the function of the device and its identifying number. All relays, pressure switches, solenoid valves and similar devices mounted outside of their associated motor controller cubicle shall be identified with nameplates. All numbered instruments and devices shall be identified with nameplates.
  - 1. Nameplates shall be made of 1/16-inch thick machine-engraved laminated phenolic having white letters not less than 5/32 inch high on black background. Equipment titles shall be completely spelled out on nameplates as shown on the drawings. The name plate schedules shall be submitted for review and acceptance prior to inscription. Nameplates on steel panels shall be secured with stainless steel drive screws.
- D. Nameplates for identifying relays and devices that are located inside of panels may be of the sandwich phenolic type described above or they may be of white fiber strips marked with the identification in India ink. In large relay panels, relays may be identified with painted designation in clear space adjacent to the relay. Relays shall be identified with number as shown on control diagram and the equipment number which it controls.
- E. Terminal Blocks: The terminal blocks shall have ample size and capacity to accommodate required loads and shall be of the solderless compression lug type. All terminals shall be numbered and shall be provided with white fiber marking strips.

## 2.08 Overcurrent Protective Devices

- A. Molded Case Circuit Breakers
  - 1. Molded case circuit breakers shall be fully enclosed in a molded case and circuit breakers with non-interchangeable trips shall have their covers sealed. Contacts shall be made from a non-welding silver alloy. Arc extinction shall be accomplished by means of arc chutes that consist of a metal grid mounted in an insulated support.
  - 2. Molded case circuit breakers with current limiting fuses shall be one complete assembly consisting of a molded circuit breaker and current limiting fuse. The above current limiting fuses shall be coordinated with the circuit breaker element for selective operation. The circuit breaker shall not reset until current limiters which have functioned have been replaced and covers fastened. The current limiters shall have visual indicators to indicate which unit needs replacement.
  - 3. The circuit breakers shall be provided with an Electronic Trip Unit. The adjustment shall provide instantaneous trip settings in the range of 700 percent to 1300 percent of the lowest full load current for which the unit is rated. Each unit shall be adjusted to the circuit

breaker manufacturer's recommended setting for the particular full load current. All other characteristics shall be in accordance with the specifications for molded case circuit breakers. The interrupting rating shall be not less than 65,000 amperes symmetrical. Where short circuit current exceeds 65,000 amperes an integrally mounted current limiter shall be provided. Refer to one-line diagrams for available short circuit duties.

## B. Ground Fault Circuit Interrupters

1. Ground fault circuit interrupters (labeled GFI on diagrams) shall be provided in the locations as shown in the panelboards. The circuit interrupters shall be UL listed for the application and shall trip at 5 milli-amperes to protect personnel from electrical shock hazard. The unit shall be of the plug-in type and shall be of the same manufacturer and shall match the other circuit breakers in the panelboard in space requirements and general appearance, except that a test pushbutton shall be provided on the face of each unit and be accessible from the front (similar to the accessibility of the circuit breaker toggle handle).
2. The neutral for each circuit that is ground fault protected shall be individually brought back with the live leg of the circuit and connected to the neutral pigtail or terminal of the interrupter unit. All wiring in GFI circuits shall be 3/64-inch insulated THWN/XHHW No. 12 AWG minimum. In general, the GFI monitored circuits will be those feeding receptacles in the shop, laboratory, restrooms, operating and outdoor areas of the plant or station and as otherwise noted.

## 2.09 Grounding

- A. Ground Rods: Ground rods shall be one piece, 3/4-inch in diameter by 10 feet in length and shall be copper clad steel. The copper exterior shall be molten welded to the steel core. The rod heads shall be chamfered to prevent mushrooming during driving.
- B. Ground Wires: Ground wires shall be bare copper wires with Class B stranding. Size shall be as shown.
- C. Connections
  1. All ground connections below grade for copper shall be made by the exothermic weld process. They shall be Cadweld, Thermoweld, or equal, made with Cadweld, Thermoweld, or equal, molds and clamps. All connections in the ground wells shall be made with a bolted ground clamp and shall be Copperweld Type "AB" with hex head set screw, Weaver Type W, or equal.
  2. All connections above grade to equipment ground buses and flat copper bars shall have a 2 bolt pad and shall be bolted with nonferrous hexagon head bolts and nuts with spring lock washers. They shall be Burndy Type "QA-B," Thomas & Betts Lock-Tite, or equal. All connections to motor shall be as shown.
  3. Connections to miscellaneous boxes, cabinets, panels, etc., shall be Burndy type "KC" servitposts, Thomas & Betts split bolt connector, or equal.
- D. The utility service entrance switchboard ground bus shall be tied to an area ground grid consisting of a ground ring with ground rods as shown on the drawings.
- E. The grounding system shall be as shown and as required by codes and regulations and shall include the following as applicable:
  1. Metallic conduits supplemented with a ground wire installed in the conduit for all circuits except control circuits.

2. An equipment grounding conductor installed in all nonmetallic conduit carrying power to any equipment.
- F. All ground conductors entering handholes, manholes, pull boxes, terminal boxes, or any other enclosure shall be bonded together and shall be bonded to the enclosure if it is metallic and to all metallic raceways within or terminating at the enclosure. An insulated grounding bushing shall be installed with a code size equipment grounding conductor bonded to the equipment frame for all conduits terminating under an enclosure containing no metal floor plate, or at sheet metal panels which are not fastened to the equipment frame solidly enough to provide an effective ground connection. This will commonly be the case with switchgear, switchboards and MCCs.
  - G. Cable shielding, metallic conduits, wireways, metal enclosure of bus ways, cable boxes, electrical equipment housings, and all noncurrent-carrying metallic parts of the installation shall be grounded. The conduit system shall be used for equipment and enclosure grounding but not as a system ground conductor. A code sized green insulated copper grounding conductor shall be included in all nonmetallic and flexible conduits.
  - H. System neutral conductors shall be grounded at the point of service ahead of the main disconnect to a grounding electrode and to a domestic cold water main as required by code. Transformer neutral shall be grounded from the neutral bushing and solidly grounded to earth. If metallic domestic water system is greater than 100 feet remote, furnish a system ground conductor in conduit to the established system grounding electrode.
  - I. All conduit stub-ups shall be grounded, and where multiple stub-ups are made within an equipment enclosure, such as a service pedestal, they shall be equipped with grounding bushings and bonded together and to the enclosure and the enclosure ground bus.
  - J. All services and feeder runs (and branch circuit wiring excluding light circuits) in nonmetallic or flexible conduit shall carry one green THWN/XHHW insulated code sized ground conductor per conduit.
  - K. Bonding devices, fittings, or jumpers shall be provided at expansion fittings, isolation sections, or wherever continuity of ground is broken.
  - L. Grounding Techniques
    1. The grounding electrode shall consist of a combination of the following systems as required to accomplish a resistance to ground not to exceed 5 ohms.
      - a. The utility service entrance switchboard ground bus shall be tied to an area ground grid consisting of a ground ring with ground rods as shown on the drawings.
      - b. Bare Wire under Foundations
        - 1) The preferred method shall be a 20-foot length of bare No. 4/0 copper wire extended its full length below ground level and embedded along the bottom of the concrete foundation footing which is in direct contact with the earth and supported in such a manner that it cannot be less than 3 inches from the bottom or side of the concrete when the foundation concrete is poured. A loop at the approximate center of this grounding electrode shall be brought out at the top of the foundation and a No. 4/0 copper ground conductor shall be connected to this loop with a pressure-type solderless connector and extended to the service equipment and to the metallic cold water system and properly connected thereto.

## 2.10 Disconnects

- A. Disconnect switches shall be heavy duty type, shall be horsepower rated, quick-make, quick-break construction. Switch blades shall open all ungrounded conductors and shall be single throw, unless otherwise noted.
- B. Rating: 600 volts AC or DC, number of poles and amp rating as shown on the Drawings.
  - 1. Fusible disconnects shall be as specified above with fuse space and clips to accept Class R fuses. Fusible disconnects shall only be utilized where required by equipment manufacturer to meet UL installation requirements.
- C. Installation
  - a. Switches shall be mounted at locations shown on plans. Installation shall be in accordance with the following methods:
    - 1) Mounting: Disconnects shall be fastened securely to supporting structure at wall and stands:
      - a) Machine bolt to metal framing or metal plates
      - b) Expansion anchors to concrete wall where approved by the Engineer
        - (i) Provide one inch spacers to set enclosure out from concrete wall
      - c) Expansion toggle wing bolts or sleeve anchors to hollow block where approved by the Engineer.
        - (i) Provide one inch spacers to set enclosure out from hollow block wall
      - d) Provide equipment mounting rack per NEC or as indicated on the drawings.
      - e) Wood screws or lag screws to wood boards or timbers where approved by the Engineer.
    - 2) Stands and Supports: Disconnect stands and support shall be constructed of and secured by:
      - a) Corrosion-resistant materials and finishes
      - b) Stainless steel Unistrut-type materials for fabrication
      - c) Machine bolt to metal framing or metal plates
      - d) Metal backing plate for mounting units
      - e) Wood screws or lag screws to wood boards or timber where approved by the Engineer
      - f) Fasten stand securely to floor
      - g) Dimensions as required by equipment to be mounted
    - 3) Arrangement: Disconnects shall be arranged for driven equipment use or function:
      - a) Similar units adjacent
      - b) Adequate space for operation and servicing
    - 4) Mounting Height: Disconnect mounting height:
      - a) Center of handle shall be 4 feet 6 inches above the finished floor or work platform.



5) Enclosure: Stainless Steel

**PART 3 - EXECUTION**

**3.01 Installation**

- A. All grounding system components shall be installed in accordance with the drawings, NEC, and the manufacturer's recommendations and instructions.
- B. Provide a separate grounding conductor in each raceway, securely grounded to equipment at each end of the raceway.
- C. Contractor shall not cover or conceal any ground connections until the District or Engineer has established that every grounding connection conforms to the Drawings and Specifications. Contractor shall provide a form to sign off each grounding connection and shall obtain signature from either the District or the Engineer.
- D. Electrical Equipment Grounding
  - 1. Metal conduits shall be bonded together to the enclosure grounding bus.
  - 2. Lightning arresters or suppressors shall be directly connected to the ground system using copper conductors sized in accordance with NEC requirements.
  - 3. The secondary neutrals of transformers shall be directly connected to the ground system using copper conductors sized as per NEC or as indicated on the drawings.
  - 4. All motors shall be grounded by bonding the grounding conductor within the raceway to the motor frame. Motors as shown on the drawings shall also have a supplemental grounding conductor bonded to the ground grid in the immediate area of the motor.
- E. Each panelboard shall have a ground bus that is secured to the interior of the enclosure. The bus shall be equal to panelboard neutral bus amp rating and shall have adequate lug quantity of lugs. No more than two grounding conductors shall be installed per lug.

**3.02 Field Quality Control**

- A. Performance Tests
  - 1. The existing and new grounding system components shall be tested per this specification section.
  - 2. The Contractor shall test each ground rod, ground mat and water pipe, structure or other major system grounding connection to determine the ground resistance. The grounding check shall be made by the "fall of potential" method utilizing a commercial ground test instrument such as the Biddle Model 593 "megger" ground check or the Associated Research Vibroground Model 225, or equal. A plot of ground resistance readings for each isolated ground rod or ground mat shall be submitted to the Resident Engineer. The current reference rod shall be driven at least 100 feet from the ground rod or grid under test, and the measurements shall be made at 10-foot intervals beginning 15 feet from the test electrode and ending 75 feet from it, all in direct line between the ground rod or center of grid and the current reference electrode.
  - 3. Any grounding system that shows greater than 5 ohms resistance for the flat portion of the plotted data shall be considered inadequately grounded. The Contractor shall add additional parallel connected ground rods and/or deeper driven rods until the ground

resistance measurements meet the 5 ohms requirement. Use of salts, water or compounds to attain the specified ground resistance is forbidden.

### **3.03 Fabrication**

#### **A. Corrosion Protection**

1. Unless otherwise noted, all equipment and appurtenances provided under this section shall be treated with zinc phosphate, bonderized or otherwise given a rust-preventive treatment, then primed and painted with a durable enamel finish. Minimum dry film thickness shall be 3 mils. The Contactor shall ensure that all panels or enclosures specified to be painted in this section shall match in color Plymouth Rock Gray on all exterior surfaces and flat white on all interior surfaces. Nonconforming panels shall be repainted.
2. Field painting of all equipment shall conform to the procedure or outline in applicable sections of the specifications that specify painting and finishing.
3. Galvanizing, where specified, shall conform to the applicable division of the specifications. Galvanized equipment and appurtenances shall not be shop primed or painted but shall be field painted and touched up as specified and directed by the District.

B. Special Tools: The Contactor shall provide all special tools required for operation and maintenance of the equipment. The tools shall be considered as part of the product and become the property of the District.

### **3.04 Source Quality Control**

A. Hazardous Locations: Provide materials and equipment acceptable to the regulatory authority having jurisdiction for the Class, Division, and Group of hazardous area indicated.

## **PART 4 - EXECUTION**

### **4.01 Preparation**

A. Maintain continuity of electric service to all functioning portions of the process or buildings during hours they are normally in use. Temporary outages will be permitted during cutover work at such times and places as can be prearranged with District and the electric utility company providing service to the facility. Such outages shall be kept to a minimum number and minimum length of time. Make no outages without prior written authorization of the District. Include all costs for temporary wiring and overtime work required in the Contract price. Remove all temporary wiring at the completion of the work.

### **4.02 Installation**

- A. For all areas designed as hazardous areas, install all materials and equipment in a manner acceptable to the regulatory authority have jurisdiction for the Class, Division and Group of hazardous area indicated.
- B. Follow manufacturers' installation instructions explicitly, unless otherwise indicated. Wherever any conflict arises between the manufacturers' instructions, codes and regulations, and these Contract Documents, follow District's decision. Keep copy of manufacturers' installation instructions on the jobsite available for review at all times.

- C. Use appropriate conduit and conductor entry fittings with enclosures which maintain the specified enclosure environmental capability after proper installation.
- D. Relocation or Removal of Materials and Equipment:
  - 1. For existing materials and equipment that are to be relocated, remove all materials no longer used such as studs, straps, conduits and wire. Where not required for used in the relocation, remove or cut off concealed or embedded conduit, boxes or other materials and equipment to a point at least 3/4-inch below the final finished surface.
  - 2. For existing materials and equipment that are to be remove, remove all materials no longer used such as studs, straps, conduits and wire. Remove or cut off concealed or embedded conduit, boxes or other materials and equipment to a point at least 3/4-inch below the final finished surface. Any equipment to be removed that is currently is working condition, shall be returned to the District unless otherwise noted in the Contract Documents.
  - 3. Repair affected surfaces to conform to the type, quality, and finish of the surrounding surface in a neat and workmanlike manner. Follow any specific instructions given under Division [9], Finishes. Utilize skilled craftsmen of the trades involved.
- E. Cutting and Patching
  - 1. Lay out work carefully in advance. Do not cut or notch any structural member or building surface without specific approval of District or the Inspector. Carefully carry out any cutting, channeling, chasing, or drilling of floors, walls, partitions, ceilings, paving, or other surfaces required for the installation, support, or anchorage of conduit, raceways, or other electrical materials and equipment. Following such work, restore surfaces neatly to original condition. Utilize skilled craftsmen of the trades involved.

#### **4.03 Field Quality Control**

- A. Each item of equipment provided as a part of this project shall be installed, aligned and tested by skilled workmen to the tolerances recommended by the equipment manufacturer. Provide work which has a neat and finished appearance. Carry out work in accordance with NECA Standard of Installation unless otherwise specified.
- B. Allow materials, equipment, and workmanship to be inspected at any time by the Engineer or the District. Correct work, materials, or equipment not in accordance with these Contract Documents or found to be deficient or defective in a manner satisfactory to the Engineer and the District.
- C. Testing and Start-Up
  - 1. General
    - a. The Contactor shall furnish all labor, materials, instruments and tools to make all connections for testing. All electric power, fuel, water, supplies, and utilities required for all tests shall be provided by the Contactor.
    - b. During checkout and startup of the various plant systems, provide a crew of skilled craftsmen to be available for checkout and troubleshooting activities as required by the District. Since coordination with other crafts and Contractors will often be required, the craftsmen assigned to checkout must be available outside normal working hours when necessary.
    - c. All equipment shall be demonstrated as operating properly prior to the acceptance of the work.

- d. These tests shall be made in the presence of the District and the results will be recorded by the District. All deficiencies or unsatisfactory conditions, as determined by the District or inspecting authorities, shall be corrected by the Contactor in a satisfactory manner at the Contactor's expense.
2. Protective Devices: All protective devices shall be properly set and operative during the testing period. Before testing and energizing a system, all necessary precautions shall be taken to ensure the safety of personnel and equipment. All conductors and all electrical equipment shall be properly insulated and enclosed. All enclosures for conductors and equipment shall be properly grounded. Insulation resistance measurements must have been made and approved on all conductors and energized parts of electrical equipment.
3. Inspection of Joints: Joints and connections in conductors No. 6 AWG and larger shall be inspected by the District after the joints have been made and prior to application of any tape.
4. Preliminary Testing: After the visual inspection of joints and connections and the application of tape and other insulating materials, all sections of the complete system of wiring shall be thoroughly tested for shorts and grounds. The Contactor shall correct all defects.
5. Insulation Resistance Tests:
  - a. Wire and Cable: All wires and cables to be used as feeders, branch circuit wiring, control circuits and other wiring shall be tested with an insulation resistance tester rated 1000 volts D.C. and capable of measuring 2000 megohms or higher. Single-conductor wires and cable shall have a resistance to ground not less than 200 megohms, and conductors of multiple-conductor cables shall have a resistance to ground not less than 100 meg-ohm. Solid state device circuits shall not be meggered directly. Solid state devices shall be disconnected prior to resistance tests.
  - b. Tests: The insulation resistance of each circuit phase-to-phase and phase-to-ground shall be measured for the following:
    - 1) Motor feeders shall be measured with the motor disconnected.
    - 2) Control circuits shall be measured with pushbuttons, interlocking relays, instruments, overcurrent devices, and the like connected.
    - 3) Lighting feeders to panelboards shall be measured with the branch circuit breakers open.
    - 4) The test shall be made with the branch breakers closed, and with receptacles and fixtures mounted, but before lamping.
    - 5) Power feeders shall be measured with switches and circuit breakers in place.
6. Equipment Tests
  - a. The following tests shall be performed
    - 1) The main bus and all power and control circuits shall be meggered.
    - 2) The wire terminals shall be checked and the connections shall be cleaned.
    - 3) All control switches, alarm devices, and indicating instruments shall be checked for proper operation under normal and simulated abnormal conditions.

- 4) The thermal-overload heaters and the reset mechanism for each motor shall be checked.
7. Circuit Breakers: The following tests shall be performed:
  - a. Inspect each circuit breaker.
  - b. Check for loose connections.
  - c. Operate each circuit breaker manually.
  - d. Set the adjustable trips to the values specified.
8. Thermal Overload Protective Devices
  - a. For each motor, the Contactor shall compile the following data in neatly tabulated form. Data shall be obtained from the equipment provided on the job:
    - 1) Equipment driven
    - 2) Nameplate amperes
    - 3) Service factor
    - 4) Overload device catalog number. Overload device current range and setting

#### **4.04 Adjusting / Cleaning / Protection**

- A. All equipment shall be located and installed so that it will be readily accessible for operation and maintenance. The District reserves the right to require minor changes in location of outlets or equipment, prior to roughing in, without incurring any additional costs or charges.
- B. Throughout this Contract, provide protection for materials and equipment against loss or damage in accordance with provisions elsewhere in these Contract Documents. Throughout this Contract, follow manufacturers' recommendations for storage. Protect everything from the effects of weather. Prior to installation, store items in clean, dry, indoor locations. Store in clean, dry, indoor, heated locations items subject to corrosion under damp conditions, and items containing electrical insulation, such as transformers, conductors, motors, and controls. Provide temporary heating, sufficient to prevent condensation, in transformers, switchgear, switchboards, motors, and motor control centers which do not have space heaters.
- C. Following installation, protect materials and equipment from corrosion, physical damage, and the effects of moisture on insulation. When equipment intended for indoor installation is installed at the Contactor's convenience in areas where it is subject to dampness, moisture, dirt, or other adverse atmosphere until completion of construction, ensure that adequate protection from these atmospheres is provided that is acceptable to the District and the Inspector. Cap conduit runs during construction with manufactured seals. Keep openings in boxes or equipment closed during construction. Energize all space heaters furnished with equipment.
- D. Cleaning and Touchup Painting: Keep the premises free from accumulation of waste material or rubbish. Upon completion of work, remove all materials, scraps, and debris from premises and from interior and exterior of all devices and equipment. Touch up scratches, scrapes, or chips in interior and exterior surfaces of devices and equipment with finishes matching as nearly as possible the type, color, consistency, and type of surface of the original finish. If extensive damage is done to equipment paint surfaces, refinish the entire equipment in a manner that provides a finish equal to or better than the factory finish, that meets the requirements of the Specifications, and that is acceptable to the District and the Inspector.

**\*\*END OF SECTION\*\***

# **APPENDIX A**

PREBID CONFERENCE AGENDA

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# AGENDA

## PRE-BID CONFERENCE AND SITE WALK

### 2024 WPCP PRIMARY CLARIFIER IMPROVEMENT PROJECT

#### RODEO SANITARY DISTRICT

April 2, 2024

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- 1) Introductions
  - a) Steven Beall – Rodeo Sanitary District, District Manager
  - b) Jeff Greer – Rodeo Sanitary District, Operations Manager
  - c) Eric Jones – HydroScience Engineers, Project Manager
- 2) Description of Project
  - a) Primary Clarifier Equipment:
    - i) The Contractor will replace all wear items including scum skimmer wipers, bottom sludge scrapper blades, and associated brackets.
    - ii) The Contractor will provide one complete set of all wear items including scum skimmer wipers, bottom sludge scrapper blades, and associated brackets.
    - iii) The Contractor will check that all the bolts are in place and properly tightened.
  - b) The Contractor shall remove the CMU wall above the headworks structure, provide a temporary security handrail and relocate attachments.
  - c) Bridge and Handrail Replacement:
    - i) The Contractor will remove the existing bridge and install a new bridge with handrails that include access for drive maintenance, sampling, and operator access to interior well of clarifier.
    - ii) The Contractor will provide and install a new personal protection davit crane base.
    - iii) The Contractor will replace the old existing handrail system and add a new handrail system along length of CMU wall barrier that is being removed above the headworks structure.
  - d) Concrete Protective Coatings Improvements:
    - i) The Contractor will provide a new protective coating system to protect the primary clarifier interior concrete walls from further degradation.
    - ii) The Contractor will provide concrete surface repairs at the headworks structure where the top layer has eroded.

- e) Electrical Power and Control Improvements:
  - i) The Contractor will replace the existing junction box with new larger stainless-steel weatherproof enclosures.
  - ii) The Contractor will install a new local disconnect switch for the clarifier mechanism near the bridge entrance.
  - iii) The Contractor will install a new 360-degree LED light with light post on the bridge to illuminate the clarifier drive.
  - iv) The Contractor will replace all electrical conduits and conductors currently installed along the bridge with PVC coated rigid steel and to replace the electrical conduit and conductors that will be relocated due to the CMU wall barrier that is being removed above the headworks structure.
- f) The Engineer’s opinion of probable construction cost is \$540,000.
- 3) Key Construction Issues
  - a) Construction Sequencing
    - i) Primary Clarifier Equipment
      - (1) The District has the ability to bypass the Primary Clarifier during the WPCP low flow timeframe is between May 1st and September 30th.
      - (2) The District will conduct the bypass operation and drain the primary clarifier.
      - (3) All work within the primary clarifier, including cleaning and dry shall be provided by the Contractor within the WPCP low flow timeframe.
      - (4) Flow must be restored to a fully functional Primary Clarifier by October 1st.
    - ii) Primary Clarifier and Bridge Submittal(s) and Structural Observations:
      - (1) The Primary Clarifier shall be drained within a week following NTP. The Contractor shall coordinate with the District to take any necessary measurements and submit the primary clarifier and bridge submittal(s) within 6 weeks of draining the primary clarifier.
      - (2) Structural observations as described on the Structural Drawings shall be conducted during this initial bypass period.
      - (3) Following these tasks the Primary Clarifier shall be placed back in service, until the Contractor is ready to install the Primary Clarifier Equipment.
  - b) Contract Time: 200 consecutive days.
- 4) Key Bid Issues
  - a) Addendums
  - b) Bids due: 11:00 AM on Wednesday, April 10, 2024

- c) See Section 00100 – Instructions to Bidder for a complete list of all the bid requirements.
- d) Prevailing wage project
- 5) Questions
- 6) Site Visit