



PROJECT MANUAL  
INCLUDING SPECIFICATIONS

FOR

**SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM**  
**REHABILITATION PROJECT**

SAUSALITO-MARIN CITY SANITARY DISTRICT  
1 EAST ROAD, SAUSALITO, CA 94965  
415-332-0244

JUNE 2016

# Sausalito-Marín City Sanitary District

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Sausalito-Marín City Sanitary District

#1 East Rd  
Sausalito, California 94965

## SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT

### NOTICE INVITING BIDS

1. The Sausalito-Marín City Sanitary District, California hereby invites bids for the project, in accordance with California Public Contract Code and other applicable law, and the following:
2. **All bids must be delivered to the Sausalito-Marín City Sanitary District, #1 East Road, Sausalito, California 94965 on or before 10:00 a.m., Pacific Standard Time, on Tuesday, June 28, 2016. Bids will be opened and read publicly at that time. Bids must be made on the bid forms included in the bid package. Bids that are submitted late according to the official time kept by the District Clerk or a designee will be returned unopened. Bids submitted by facsimile or other electronic means will not be accepted. Bids that are incomplete or that otherwise do not conform to the requirements specified in the bid package may be deemed non-responsive.**
3. **Notice is hereby given of a pre-bid meeting at 10:00 a.m., Pacific Standard Time, on Tuesday, June 21, 2016. The pre-bid meeting will be held at the District's Main Office located at 1 East Road, Sausalito, CA. Attendance at a pre-bid meeting is MANDATORY to ensure all bidders are familiar with the project sites. Bidders shall complete the Bid Label as evidence that they visited the site. Please provide time for parking prior to the meeting as public parking is limited.**
4. The project Contractor shall furnish all tools, equipment, apparatus, facilities, labor and material necessary to perform and complete in a good and workmanlike manner the construction of the **Secondary Sediment Tanks Collector System Rehabilitation Project** as shown in the project technical specifications and plans and in accordance with the contract documents. For each of two (2) sediment tanks the work includes but is not limited to; 1) demolition of the existing collector system, 2) removal of embedded train rails in the tank floor, 3) complete new collector system installation, 4) replacement of isolation gates, 5) electrical work as required for system proximity sensors and additional work as needed to construct and inspect a complete and operational project as specified in these Contract Documents. All work shall be completed within **100 calendar days** of the project commencement date specified in the notice to proceed for the project. **Liquidated Damages apply for this project as defined in paragraph 4 of the Agreement.**
5. All of the project work is to be done in accordance with the bid packages on file in the District's office at Sausalito-Marín City Sanitary District, #1 East Rd, Sausalito, California

Sausalito-Marín City Sanitary District  
Notice Inviting Bids

94965 and at the locations specified below. Requests for information on receiving bid packages should be directed to the Sausalito-Marín City Sanitary District, 415-332-0244. There will be a sixty dollar (\$60) non-refundable charge for each bid package provided by the District. Checks and money orders must be made payable to the Sausalito-Marín City Sanitary District. Cash will not be accepted. Bid packages will be mailed upon request and receipt of the non-refundable charge and the bidder's UPS or FedEx account number. Electronic bid packages may also be downloaded from the District's website free of charge. See Documents tab at [SMCSD.net](http://SMCSD.net).

6. Complete bid packages are located at the following sites:

**Bay Area Builders Exchange**

<http://bayareabx.com/>

Phone 925-685-8630

[aprilh@ccbx.com](mailto:aprilh@ccbx.com)

**iSqFt Plan Room**

800-364-2059 ext. 8273

[california@isqft.com](mailto:california@isqft.com)

**McGraw Hill Construction Dodge**

Phone 626-932-6137

Fax 800-360-6397

[catherine\\_cardona@mcgraw-hill.com](mailto:catherine_cardona@mcgraw-hill.com)

**Napa Solano Builders Exchange**

Phone 707-255-2515

Fax 707-255-2749

[planroom@snbe.com](mailto:planroom@snbe.com)

**North Coast Builders Exchange**

Phone 707-542-9502

Fax 707-542-2027

[planroom@ncbeonline.com](mailto:planroom@ncbeonline.com)

**Peninsula Builders Exchange**

Phone 650-591-4486

Fax 650-591-8108

[support@constructionplans.org](mailto:support@constructionplans.org)

**CMD**

770-209-3396

[Jeannie.kwan@cmdgroup.com](mailto:Jeannie.kwan@cmdgroup.com)

**San Francisco Builders Exchange**

Phone 415-282-8220

Fax 415-821-0363

[djohnsonsf@sbcglobal.net](mailto:djohnsonsf@sbcglobal.net)

7. Questions concerning the project or the bid package must be submitted by facsimile (415-332-0453) or email ([kevin@smcsd.net](mailto:kevin@smcsd.net)) to Kevin Rahman, Associate Engineer at least five (5) working days before the time specified for bid opening. Where appropriate, the District may respond to such questions by addenda transmitted to all bid package recipients.
8. In accordance with California Public Contract Code, all bids must be presented under sealed cover and include one of the following forms of bidder's security: cash, cashier's check made payable to the District, certified check made payable to the District, or a bidder's bond. The amount of bidder's security provided must equal at least ten (10) percent of the total of the bid price for the base bid and the additive or deductive items listed in this notice. The successful bidder must submit to the District complete, executed copies of all documents specified in the contract checklist included in the bid package within ten (10) working days of receiving written notice of award of the project.

Bidder's security of any successful bidder that fails to do so will be forfeited to the District. The documents required pursuant to the contract checklist include, but are not limited to, a payment or labor and materials bond in an amount of at least 100 percent of the amount payable by the terms of the project contract and that satisfies the requirements of California Civil Code Section 3248, and a performance bond in an amount of at least 100 percent of the amount payable by the terms of the contract. All project bonds must be executed by an admitted surety insurer in accordance with applicable law and acceptable to the District.

9. **Pursuant to California Public Contract Code Section 3300, a Class A California contractor's license is required to bid on the project.** In accordance with California Business and Professions Code Section 7028.15, all project work must be performed by properly licensed contractors and subcontractors with active licenses in good standing as of the date and time specified for bid opening. Bids that do not satisfy applicable licensing requirements will be considered non-responsive. Licenses must be issued by the Contractor's State License Board of California and must be maintained in good standing throughout the project term. In accordance with California Business and Professions Code Section 7030.5, bidders must verify their Contractor's License number and license expiration date on the bid forms under penalty of perjury. **In addition, all bidders must provide certification of bidder's experience and qualifications with their bids due to the location of work in the San Francisco Bay. (Forms are provided in the following pages.)**
10. In accordance with California Public Contract Code Section 6109, contractors and subcontractors who are ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7 may neither bid on, be awarded or perform work as a subcontractor on the project.
11. In accordance with California Labor Code Section 1771, not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the project is to be performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work fixed as provided in the California Labor Code shall be paid to all workers engaged in performing the project. In accordance with California Labor Code Section 1770 and following, the Director of Industrial Relations has determined the general prevailing wage per diem rates for work in the locality in which the project is to be performed. In accordance with California Labor Code Section 1773, the District has obtained the general prevailing rate of per diem wages and the general rate for holiday and overtime work in the locality in which the project is to be performed for each craft, classification or type of worker needed to perform the project. In accordance with California Labor Code Section 1773.2, copies of the prevailing rate of per diem wages are on file at the District and will be made available on request. In accordance with California Labor Code Section 1777.1, contractors and subcontractors that are found guilty of willfully violating Chapter 1 of Part 7 of Division 2 of the Labor Code (except for Section 1777.5), or that are found guilty of such violations with intent to defraud, and entities in which such contractors or subcontractors have any interest, may be ineligible to bid on, be awarded, or perform project work as a subcontractor

12. In accordance with California Public Contract Code Section 3400, bidders may propose equals of products listed in the technical specifications or project plans by manufacturer name, brand or model number, unless the technical specifications or plans specify that the product is necessary to match others in use. Complete information for products proposed as equals must be submitted to the District's Office for review at least seven (7) working days before the time specified for bid opening in accordance with the bidders instructions contained in the bid package.
13. In accordance with California Public Contract Code Section 22300, except where prohibited by federal regulations or policies, the successful bidder may, on request and at its expense, substitute securities in lieu of amounts withheld by the District from progress payments to ensure performance under the contract in accordance with the contract documents. Such securities will be subject to the terms of the escrow for security deposit agreement contained in the contract documents
14. The District reserves the right to reject any and all bids and/or to waive any bid irregularities to the extent permitted by law. If the District elects to award a contract for performance of the project, the contract will be awarded in accordance with California Public Contract Code Section 20162 and other applicable law to the responsible bidder submitting a responsive bid with the lowest total bid price for the base bid. All bids will remain valid for 90 days after the bid opening. Except as permitted by law and subject to all applicable remedies, including forfeiture of bidder's security, bidders may not withdraw their bid during the 90 day period after the bid opening.

Sausalito-Marín City Sanitary District  
#1 East Rd  
Sausalito, California 94965

**INSTRUCTIONS TO BIDDERS**

**1. DEFINITIONS**

- 1.1 Bid forms. The bid forms are the forms contained in Volume 1 of the bid package.
- 1.2 Bid package. A complete bid package consists of the following documents: Notice Inviting Bids, Certification of Bidder's Experience and Qualifications, Instructions to Bidders, Bidder's Check List, Bid Label, Bid, Non-collusion Affidavit, Bid Bond, Contractor License Information, Designation of Subcontractors, Workers Compensation Insurance Certification, Debarment Certification, Bidder's Signature Page, Contract Check List, Agreement, Performance Bond, Payment/Labor and Materials Bond, Maintenance Bond, Escrow for Security Deposit Agreement, General Conditions, General Requirements, and Project Plans and Technical Specifications.
- 1.3 Contract documents. The contract documents refer to all of the documents incorporated into the final Project contract as listed in the contract.
- 1.4 Project. The Project is the SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT as described in the Technical Specifications and Project Plans included in the project bid package.
- 1.5 Project Plans. The Project Plans are primarily graphic detailed requirements concerning the Project contained in the bid package.
- 1.6 Technical Specifications. The Technical Specifications provide detailed requirements concerning the Project and are contained within the Project Plans.
- 1.7 General Requirements. The General Requirements describe general procedures and constraints for completing the Project included in the bid package.

**2. BIDDER'S REPRESENTATIONS**

Each bidder by submitting a bid represents that:

- 2.1 The bidder has read and understands the bid package and the bid is in accordance with all of the requirements of the bid package and applicable law.



- 2.2 Neither the bidder nor any subcontractor included on the list of proposed subcontractors submitted with the bid are ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7.
- 2.3 The bidder understands that quantities of unit price items may vary from the estimates provided in the technical specifications.
- 2.4 Representatives of the bidder have visited the Project site and have familiarized themselves with the conditions under which the Project work is to be performed so as to ensure that the Project work may be performed for the amount bid.
- 2.5 The bidder has informed the District in writing no later than five (5) working days prior to the time specified for bid opening of any apparent conflicts, errors, or ambiguities contained in the bid package or between the contents of the bid package and the Project site.

### 3. PRE-BID COMMUNICATION AND INTERPRETATION OF THE BID PACKAGE

- 3.1 Any bidder that discovers any apparent conflicts, errors, or ambiguities contained in the bid package or between the contents of the bid package and the Project site, or that has questions or requires clarification concerning the bid package or its intent must inform the District in writing as soon as reasonably possible, but no later than five (5) working days before the date specified for bid opening. Such notice to the District must be sent to the address specified in the Notice Inviting Bids for questions concerning the bid package. Questions received less than five (5) working days before the time specified for opening bids may not be answered.
- 3.2 Any interpretation, correction or change of the bid package prior to bid opening will be made by addendum signed by an authorized representative of the District and transmitted to all bid package recipients. No other interpretation or information concerning the bid package issued prior to the date specified for opening bids will be binding. All addenda signed by an authorized representative of the District and issued prior to the time and date specified for opening bids will form a part of the contract documents and must be acknowledged on the bid forms. Any changes, exceptions or conditions concerning the Project and/or the bid package submitted by any bidder as part of a bid may render that bid non-responsive.
- 3.3 Questions concerning the project or the bid package shall be in writing, and may be submitted by facsimile or email to Kevin Rahman, Associate Engineer at least five (5) working days before the time specified for bid opening. The District's facsimile number is 415-332-0453. The email address is [kevin@smcsd.net](mailto:kevin@smcsd.net).

### 4. PRE-BID ACCESS TO THE PROJECT SITE

- 4.1 Prior to submitting a bid, it will be the sole responsibility of each bidder to conduct any additional examination, investigation, exploration, test, study or other inquiry and to obtain any additional information pertaining to the physical conditions (including surface, subsurface, and underground utilities) at or near the Project site that may affect the cost, progress, or performance of the Project, and that the bidder deems are necessary to prepare its bid for performance of the Project in accordance with the bid package and contract documents. Bidders seeking any such additional examination or other inquiries or information concerning the Project will do so at the bidder's sole expense.
- 4.2 Bidders seeking to conduct any additional examination or other inquiry at the Project site must request site access from the District at least two (2) working days in advance. The location of any excavation, boring or other invasive testing will be subject to approval on behalf of the District and any other agencies with jurisdiction over such testing. Bidders may not conduct tests at the Project site prior to obtaining District approval. The District may require bidders to execute an access agreement prior to approving testing at the Project site. Once approved testing is complete, Bidders must fill all trenches or holes, restore all pavement to match existing structural section, and otherwise clean up and restore the test site to its pre-test condition.
- 4.3 Bidder's must visit the Project site prior to making a bid, and shall complete the Bid Label as evidence of this visit. Attendance at a pre-bid meeting is MANDATORY to ensure all bidders are familiar with the project site.

## 5. BIDDING PROCEDURE

- 5.1 Bids must be delivered to the Sausalito-Marin City Sanitary District, #1 East Rd, Sausalito, California 94965, no later than the time and date specified in the Notice Inviting Bids. Bids will be opened and read publicly at that time. Bids that are submitted late according to the official time kept by the District Clerk or a designee will be returned unopened. Telephones for use by bidders are not available at the District offices. Note that limited cell phone coverage may be experienced at the District's office.
- 5.2 In accordance with California Public Contract Code Section 20804.5, bids must be presented under sealed cover. A completed bid label form furnished with the bid forms must be affixed to and visible on the outside of the sealed bid cover at the time the bid is submitted. Bids must be submitted using the bid forms furnished with the bid package. Bids must include all documents listed in the Bidder's Checklist. Bids must bear the bidder's legal name and be signed by a representative authorized to bind

the bidder. Bids must be typed or written in ink. Corrections may be made if initialed by the individual signing the bid. No oral or telegraphic modifications of bids, including facsimile modifications, will be considered. Bids that are incomplete or that are not presented on the bid forms furnished with the bid package may be deemed non-responsive.

- 5.3 Each bid must give the full business address of the bidder. Bids of partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership, or by an authorized representative, followed by the printed name and title of the person signing. Bids of corporations must be signed with the legal name of the corporation, followed by the name of the state of incorporation and by the signature and designation of the president, secretary or other person authorized to bind the corporation. The name of each person signing shall also be typed or printed below the signature. Upon request of the District, bidders will furnish satisfactory evidence of the authority of the person signing the bid. Bids of joint ventures must include a certified copy of the legal agreement constituting the joint venture.
- 5.4 No person, firm, corporation, partnership or legal joint venture may submit more than one bid for the Project. However, a person, firm, corporation, partnership or legal joint venture that has submitted a subcontract proposal to a bidder, or that has quoted prices on materials to a bidder may submit a subcontract proposal, quote prices to other bidders and submit its own bid.
- 5.5 In accordance with California Public Contract Code Section 20170, all bids must include one of the forms of bidder's security specified in the Notice to Bidders in an amount of at least ten (10) per cent of the total of the bid prices for the base bid and those additive or deductive items specifically identified in the Notice to Bidders for the purpose of determining the lowest price bid. Bidders that elect to provide bidder's security in the form of a bid bond must execute a bid bond using the form provided in the bid forms. The bidder's security is tendered as a guarantee that the successful bidder, if awarded the Project contract, will execute and submit to the District all required bonds, certificates of insurance, completed contract forms and other documents listed in the Contract Check List and enter into a contract with the District within ten (10) working days of receipt of the Notice of Award. The bidder's security of any successful bidder that fails to do so will be forfeited to the District. All bidders' security not forfeited to the District will be returned once a successful bidder provides all required documents and enters a contract with the District in accordance with all applicable bid package requirements. Forfeiture of the bidder's security to the District will not waive or otherwise limit any other remedy available to the District under applicable law.
- 5.6 In accordance with California Business and Professions Code Section 7028.15, Public Contract Code Section 20103.5, and as specified in the Notice to Bidders, all Project work must be performed by properly licensed

contractors and subcontractors with active licenses in good standing as of the date and time specified for bid opening, or, if the project involves federal funds, no later than the time the Project contract is awarded. Bidders must verify their Contractor's License number and license expiration date on the proposal cover page under penalty of perjury. Bids that do not satisfy applicable licensing requirements will be considered non-responsive and rejected and may subject the bidder to criminal and/or civil penalties.

- 5.7 If the bid forms include a bidder's questionnaire, all bids must include a completed bidder's questionnaire on the forms provided. By submitting a bid, bidders authorize District representatives to verify any and all information provided on the bidder's questionnaire and agree to indemnify, defend and hold harmless the District and its officials, officers, employees, agents and volunteers to full the extent permitted by law from and against any claims, liability or causes of action, including, without limitation, legal fees and costs, arising out of verification of the information provided on the bidder's questionnaire, and/or arising out of use of information provided in the bidder's questionnaire to determine, in accordance with applicable law, the qualification of the bidder for performing the Project.
- 5.8 Bids may be withdrawn prior to the time set for bid opening by a written request signed by an authorized representative of the bidder filed with the District. The bid security submitted with bids so withdrawn will be returned to the bidder. Bidders that have withdrawn their bid in accordance with this provision may submit a new bid prior to the time set for bid opening in accordance with all applicable bid package requirements. Bids may not be withdrawn during the ninety day period after the time set for bid opening except as permitted by law pursuant to California Public Contract Code Section 5100 and following. Any other bid withdrawal will result in forfeiture of the bidder's bid security to the District.

## 6. BID PROTESTS

Any protest of the proposed award of Bid to the bidder deemed the lowest responsible bidder must be submitted in writing to the District, no later than 5:00 PM on the third (3<sup>rd</sup>) business day following the date of the Bid opening.

- 6.1 The initial protest must contain a complete statement of the basis for the protest.
- 6.2 The protest must state the facts and refer to the specific portion of the document or the specific statute that forms the basis for the protest. The protest must include the name, address, and telephone number of the person representing the protesting party.

- 6.3 The party filing the protest must concurrently transmit a copy of the initial protest to the bidder deemed the lowest responsible bidder.
- 6.4 The party filing the protest must have actually submitted a Bid on the Project. A subcontractor of a party filing a Bid on this Project 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.
- 6.5 The procedure and time limits set forth in this Section are mandatory and are the Bidder's sole and exclusive remedy in the event of a Bid Protest. The Bidder's failure to fully comply with these procedures shall constitute a waiver of any right to further pursue the Bid Protest, including filing of a challenge of the award pursuant to the California Public Contracts Code, filing of a claim pursuant to the California Government Code, or filing of any other legal proceedings.
- 6.6 The District shall review all timely protests prior to formal award of the Bid. The District shall not be required to hold an administrative hearing to consider timely protest, but may do so at its option. At the time of the District Board's consideration of the award of the bid, the District Board shall also consider the merits of any timely protests. The District Board may either accept the protest and award the bid to the next lowest responsible bidder or reject the protest and award to the lowest responsible bidder. Nothing in this section shall be construed as a waiver of the District Board's right to reject all bids.
- 6.7 The District reserves the right to waive any bid irregularities not affecting the amount of the bid, except where such waiver would give the low bidder an advantage or benefit not allowed other bidders.

## 7. AWARD

- 7.1 In accordance with applicable law, the District reserves the right to reject any or all bids and to waive any informality in any bid. The District reserves the right to accept any portion of any bid, unless the bid package expressly provides that the award will be made as a whole. If the District elects to award a contract for performance of the Project, the contract will be awarded in accordance with California Public Contract Code and other applicable law to the responsible bidder submitting a responsive bid with the lowest total bid price for the base bid and the additive or deductive alternate items listed in the Notice Inviting Bids. In accordance with the contract documents and other applicable law, the District may add or deduct items of work from the Project after the lowest responsible bidder is determined.
- 7.2 The successful bidder must submit to the District complete, executed copies of all documents specified in the contract checklist included in the bid package

within ten (10) working days of receiving written notice of award of the Project. Bidder's security of any successful bidder that fails to do so will be forfeited to the District.

- 7.3 The successful bidder and any subcontractors and others engaged in performance of the Project must have valid local business license(s), as applicable, before commencing work on the Project.
- 7.4 Upon verifying that the successful bidder has provided complete, executed copies of all documents specified in the contract checklist included in the bid package, an authorized District representative will execute the Project contract, and the District will issue to the successful bidder a notice to proceed specifying the Project commencement date. The number of days within which the Project must be complete begins to run on the Project commencement date.

## 8. PRICING

- 8.1 If an inconsistency exists between the amount listed for a unit price in a bid and the total listed for that bid item (e.g., if the total listed for a bid item does not equal the unit price listed in the bid multiplied by the quantity listed), subject to applicable law, the unit price will be deemed to accurately reflect the bidder's intent concerning the bid item and the intended total for the bid item will be deemed to be the unit price as listed in the bid multiplied by the quantity listed.
- 8.2 If the Project bid price is a lump sum total made up of smaller individual bid item prices and an inconsistency exists between the lump sum total bid price and any individual bid item price, subject to applicable law, the individual bid item prices as listed in the bid will be deemed to accurately reflect the bidder's intended bid for the Project and the intended lump sum total bid for the Project will be deemed to be the sum of the individual bid item prices as listed in the bid, even if that sum is different from the amount actually listed as the lump sum total bid for the Project.
- 8.3 Any federal, state, or local tax payable on articles to be furnished for the Project shall be included in the lump sum total bid price and paid by the Contractor under the contract.

## 9. QUANTITIES

- 9.1 Quantities, including but not limited to, material or labor quantities, that are provided in the bid package concerning the Project are estimates only and are provided solely as a general indication of the Project scope. The District does not warrant that such quantity estimates provided in the bid package represent the actual quantities required to perform the Project in accordance with the contract documents. Such quantity estimates do not bind the District, and bidders should not rely on them in preparing their bids. Each bidder is solely



responsible for determining the quantities on which to base their bids in light of information contained in the bid package, bidder investigation and analysis of the Project and the Project site, and any other analysis or expertise of the bidder concerning the Project.

- 9.2 The District may amend, decrease or increase the Project work in accordance with the bidding package and the contract documents. If the District amends, decreases or increases the Project work prior to award of the Project each bidder will be solely responsible for determining the revised quantities, if any, on which to base their bid in light of information contained in the bid package and any amendments or addenda to the bid package, bidder investigation and analysis of the Project as amended, decreased or increased, the Project site, and any other analysis or expertise of the bidder concerning the Project.

## 10. SUBSTITUTION OF "OR EQUAL" ITEMS

- 10.1 In accordance with California Public Contract Code Section 3400, where the technical specifications or Project plans list products by manufacturer's name, brand or model number such information indicates the quality and utility of the items desired and does not restrict bidders to that manufacturer's name, brand or model number, unless the technical specifications or Project plans specify that the listed product is necessary to match others in use on a particular public improvement either completed or in the course of completion. Except where the Technical Specifications or Project plans indicate that a particular brand product is necessary to match others in use, when a manufacturer's name, brand or model number is listed, it shall be construed to be followed by the words "or equal" whether or not those words in fact follow the manufacturer's name, brand name or model number listed in the technical specifications or Project plans. Unless the technical specifications or Project plans indicate that a particular brand product is necessary to match others in use, bidders may propose equals of products listed by manufacturer name, brand name or model number.
- 10.2 Complete information for products proposed as equals must be submitted to the District for review at least ten (10) working days before the time specified for opening bids. To be considered, proposals concerning products proposed as equals must include sufficient information to permit the District to determine whether the products proposed as equals will satisfy the same performance requirements as products listed by manufacturer's name, brand or model number. Such performance requirements may include, but are not limited to, size, strength, function, appearance, ease of maintenance and repair, and useful life requirements. Proposals concerning products proposed as equals that are submitted less than ten (10) days before the time specified for opening bids will not be considered. Failure to bid products specified by manufacturer name, brand name or model number where the technical specifications or Project plans specify that a particular product is necessary to match others in use, or where no

proposal concerning products proposed as equals has been submitted in accordance with this provision may render a bid non-responsive.

## 11. SUBCONTRACTING

- 11.1 Bids must be in accordance with the requirements of the Subletting and Subcontracting Fair Practices, Act, California Public Contract Code Section 4100 and following. Bids must include a completed list of proposed subcontractors on the form included in the bid package. In accordance with California Public Contract Code Section 4104, completed lists of proposed subcontractors must include the name, business location, the portion (type or trade), and dollar amount of the Project work to be subcontracted for each subcontractor that will perform a portion of the Project work (including special fabrication and installation of a portion of the work) valued in excess of one half ( $\frac{1}{2}$ ) of one (1) percent of the total Project bid price. If the Project work includes construction of streets or highways, the completed list of proposed subcontractors must include the subcontractor name, business location, type of work and dollar amount to be subcontracted for each subcontractor that will perform a portion of the Project work (including special fabrication and installation of a portion of the work) valued in excess of one half ( $\frac{1}{2}$ ) of one (1) percent of the total Project bid price, or ten thousand dollars (\$10,000), whichever is greater. Bids that fail to include complete lists of proposed subcontractors in accordance with Public Contract Code Section 4100 and following and this provision may be deemed non-responsive.
- 11.2 In accordance with California Public Contract Code Section 4106, for any portion of the Project work with a value of more than one half ( $\frac{1}{2}$ ) of one (1) percent of the total Project bid price for which no subcontractor is listed, or for which more than one subcontractor is listed, bidders certify by submitting their bids that they are qualified to perform that portion of the Project work and that they will perform that portion of the Project work with their own forces. Bidders may not substitute another subcontractor for a subcontractor listed in their bid except as permitted by the District in accordance with Section 4107 and following of the California Public Contract Code.

## 12. ASSIGNMENT

Bidders may not assign, sublet, sell, transfer, or otherwise dispose of their bid or any right, title or interest in their bid, or their obligations under their bid, without the written consent of an authorized representative of the District. Any purported assignment, subletting, sale, transfer or other disposition of a bid or any interest in a bid, or of any obligations under a bid without such written consent will be void and of no effect.

## 13. BONDS



The successful bidder must submit to the District a performance bond within ten (10) working days of receiving written notice of award. If the Project involves expenditures in excess of twenty five thousand dollars (\$25,000), the successful bidder must submit to the District a payment or labor and materials bond within ten (10) working days of receiving written notice of award. Prior to issuance of the final Project payment, the successful bidder must submit a warranty or maintenance bond. All bonds must be executed by corporate sureties who are admitted surety insurers in the State of California in accordance with applicable law and acceptable to the District. Individual sureties will not be accepted. All project bonds must be executed using the forms provided in the bid package.

- 13.1 In accordance with California Civil Code Section 3247, the payment or labor and materials bond must be in the amount of one hundred percent (100%) of the total amount payable by the terms of the Project contract and guarantee payment to persons listed in California Civil Code Section 3181 for work performed and for charges for materials, supplies, and equipment provided under the Project contract (including amounts due under or subject to the Unemployment Insurance Code) in accordance with the requirements of California Civil Code Section 3248.
- 13.2 The performance bond must be in the amount of one hundred (100) percent of the amount payable (total base bid) by the terms of the Project contract to guarantee the faithful performance of the Project work.
- 13.3 The warranty or maintenance bond must be in the amount of ten (10) percent of the final Project contract amount and guaranty the Project work against defects in materials, equipment, workmanship, or needed repair for one (1) year from the District's acceptance of the Project work.

#### 14. LABOR LAWS

- 14.1 Bidders shall comply with applicable provisions of Chapter 1 of Part 7 of the California Labor Code, beginning with Section 1720.
- 14.2 In accordance with California Labor Code Section 1861, bids must include a workers compensation insurance certification on the form included in the bid package.
- 14.3 In accordance with California Labor Code Section 1771, not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the project is to be performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work fixed as provided in the California Labor Code shall be paid to all workers engaged in performing the project.
- 14.4 In accordance with California Labor Code Section 1770 and following, the Director of Industrial Relations has determined the general prevailing wage per

diem rates for work in the locality in which the project is to be performed. In accordance with California Labor Code Section 1773, the District has obtained the general prevailing rate of per diem wages and the general rate for holiday and overtime work in the locality in which the project is to be performed for each craft, classification or type of worker needed to perform the project. In accordance with California Labor Code Section 1773.2, copies of the prevailing rate of per diem wages are on file at the District and will be made available on request.

- 14.5 In accordance with California Labor Code Section 1777.1, contractors and subcontractors that are found guilty of willfully violating Chapter 1 of Part 7 of Division 2 of the Labor Code (except for Section 1777.5), or that are found guilty of such violations with intent to defraud, and entities in which such contractors or subcontractors have any interest, may be ineligible to bid on, be awarded, or perform project work as a subcontractor.

SAUSALITO-MARIN CITY SANITARY DISTRICT  
#1 EAST ROAD  
SAUSALITO, CALIFORNIA 94965  
**BIDDER'S CHECK LIST**

All bidders must:

- \_\_\_\_\_ Attend the pre-bid conference on **Tuesday, June 21, 2016 at 10:00 a.m. at the District's Main Office located at 1 East Road, Sausalito, CA.**
- \_\_\_\_\_ Submit equal product proposals, if any, in accordance with the instructions to bidders included in the bid package at least 7 working days before the time specified for bid opening.
- \_\_\_\_\_ Include with your bid properly completed, accurate copies of the following documents in the following order using the forms included in the bid package:
  - \_\_\_\_\_ Bidder's check list
  - \_\_\_\_\_ Certification of Bidder's Experience and Qualifications
  - \_\_\_\_\_ Bid
  - \_\_\_\_\_ Acknowledgement of each addendum issued by the District, if any, with complete, signed and dated copies of each addendum attached
  - \_\_\_\_\_ Executed bid bond
  - \_\_\_\_\_ Contractor licensing information
  - \_\_\_\_\_ Designation of subcontractors
  - \_\_\_\_\_ Workers compensation insurance certification
  - \_\_\_\_\_ Signed and notarized non-collusion affidavit
  - \_\_\_\_\_ Debarment certification
  - \_\_\_\_\_ Bidder's questionnaire, if any
  - \_\_\_\_\_ Executed bidder's signature page
- \_\_\_\_\_ Affix a property completed, signed and accurate bid label using the form included in the bid package to the sealed cover of your bid.
- \_\_\_\_\_ Arrange to have the sealed bid delivered to Kevin Rahman in the Sausalito Marin City Sanitary District offices at #1 East Road, Sausalito, California 94965 before 2:00 p.m., on Thursday, June 23, 2016.

SAUSALITO-MARIN CITY SANITARY DISTRICT  
#1 EAST ROAD  
SAUSALITO, CALIFORNIA 94965

**BID LABEL**

Sealed bid for the \_\_\_\_\_ Project.

Bidder: \_\_\_\_\_

By my signature below I certify under penalty of perjury under the laws of the State of California that a representative of the above bidder visited the Project sites on

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ at \_\_\_\_\_.

By: \_\_\_\_\_  
(Official authorized to bind bidder)

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

Sausalito-Marín City Sanitary District

Bid Label

**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 further certifies 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 concerning the nature, extent, and inherent conditions concerning the work to be performed. Bidder further acknowledges that there are certain inherent conditions existent in the construction of the particular facilities which may create, during the construction program, unsafe conditions hazardous to persons, property and the environment. Bidder expressly acknowledges that it is aware of such 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.

**A. ESSENTIAL REQUIREMENTS FOR QUALIFICATION**

If the answer to any of questions 1 through 4 is "no", or if the answer to any of questions 5 through 8 is "yes", the Bidder will be deemed ineligible or not responsible for purposes of the Contract.

1. Bidder possesses a valid and current California Contractor's license as required 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 paragraph 8.8 of the General Conditions.  
☐ Yes                      ☐ No
3. Bidder has current Workers' Compensation insurance coverage as required by the Labor Code or is legally self-insured pursuant to Labor Code section 3700 et. seq.  
☐ Yes                      ☐ No
4. Bidder has registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5.  
☐ Yes                      ☐ No
5. Has your contractor's license been revoked at any time in the last five (5) years?  
☐ Yes                      ☐ No

6. 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
7. 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
8. 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

## B. COMPANY EXPERIENCE

The Bidder has been engaged in the contracting business, under the present business name for \_\_\_\_\_ years and has experience in work of a nature similar to this project which extends over a period of \_\_\_\_\_ years (Bidder must show at least five (5) years of related experience).

The Bidder, as a Contractor, has never failed to satisfactorily complete a contract awarded to it, except as follows:

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For the Owner to consider the Bidder properly experienced in work of similar nature to this project, the Bidder must list at least \$ 2 million in construction volume on no more than five (5) projects completed within the last five (5) years of the following types of projects:

1. Sewer pump station or sewer treatment plant work.
2. System layout work requiring a high level of accuracy.

The Bidder can include project(s) currently under construction, but only the total amount paid by the Owner(s) as of three (3) months prior to the bid date on uncompleted project(s) can be included in the construction volume for purposes of this certification. The Bidder is allowed to list up to a maximum of five (5) projects of the types listed above, that combined, will add up to at least the cost in completed volume of work listed above. Any projects listed below which are not as defined above will not be considered by the Owner in meeting this experience requirement.

Bidder also certifies that Bidder self-performed at least forty percent (40%) of the Work on each of the projects listed below. The Owner considers this level of past self-performance demonstrates a benefit to a Project in terms of better control of cost, schedule and safety.

If the Bidder is a Joint Venture of two or more companies, each participant in the Joint Venture shall meet this prior project experience requirement and provide project information for each Joint Venture participant in the format below.

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:** \_\_\_\_\_

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:** \_\_\_\_\_

### **C. SUBCONTRACTOR EXPERIENCE**

The Bidder's Subcontractor has been engaged in the contracting business, under the present business name for \_\_\_\_\_ years and has experience in work of a nature similar to this project which extends over a period of \_\_\_\_\_ years (Bidder's Subcontractor must show at least five (5) years of related experience).

The Bidder's Subcontractor has never failed to satisfactorily complete a project, except as follows:

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

For the Owner to consider the Bidder's Subcontractor properly experienced in work of similar nature to this project, the Bidder's Subcontractor must list at least \$ 1 million in construction volume on no more than five (5) projects completed within the last five (5) years for work directly associated with the work the Bidder has hired the subcontractor to perform.



If the subcontractor will be performing work on the force main, then they must demonstrate experience with the following:

1. Sewer pump station or sewer treatment plant work.
2. System layout work requiring a high level of accuracy.

The Bidder's Subcontractor can include project(s) currently under construction, but only the total amount paid by the Owner(s) as of three (3) months prior to the bid date on uncompleted project(s) can be included in the construction volume for purposes of this certification. The Bidder's Subcontractor is allowed to list up to a maximum of five (5) projects of the types listed above, that combined, will add up to at least the cost in completed volume of work listed above. Any projects listed below which are not as defined above will not be considered by the Owner in meeting this experience requirement.

Bidder also certifies that Bidder's Subcontractor self-performed at least forty percent (40%) of the Work on each of the projects listed below. The Owner considers this level of past self-performance demonstrates a benefit to a Project in terms of better control of cost, schedule and safety.

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:** \_\_\_\_\_
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:** \_\_\_\_\_

#### D. 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 shall have a safety record that meets or exceeds one of the three following safety criteria:

1. If the Contractor's three-year average Workers' Compensation Experience Modification (EMR) is equal to or less than 100%, the contractor meets the minimum safety requirements for this project;
2. If the Contractor's three-year average EMR is greater than 100%, the Contractor's three-year average Recordable Incident Rate (RIR) must not be greater than 3.8 and three-year average Lost Time Incident Rate (LTIR) must not be greater than 1.7 to meet the minimum safety requirements for this project;
3. If the Contractor only meets either the three-year average RIR or LTIR value, the Contractor shall be required to hire at no additional cost to the District a mutually acceptable safety consultant who will prepare a project specific safety plan, conduct random weekly inspections of the Contractor's activities to ensure conformance with the safety plan and prepare and submit a weekly report to the District summarizing the results of each inspection. The contractor shall adhere to the safety plan for the duration of the project. The contractor's activities shall be adjusted immediately to address any issues resulting from the weekly safety inspection.

Contractors that cannot meet any of the three safety criteria above are not eligible to work for the District.

The Bidder shall list its Experience Modification Rate, Lost time Incident Rate, and Recordable Incident Rate for the last three complete years (available from your insurance carrier).

<u>Year</u>	<u>EMR</u>	<u>RIR</u>	<u>LTIR</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
	_____AVG	_____AVG	_____AVG

To verify the above information, the Owner 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.

Workers' Compensation Insurance Company: \_\_\_\_\_  
Contact Person for Insurance Company: \_\_\_\_\_  
Telephone Number: \_\_\_\_\_

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

\_\_\_\_\_

Sausalito-Marín City Sanitary District  
CERTIFICATION OF BIDDER'S EXPERIENCE AND QUALIFICATIONS

Name of Bidder

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

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

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

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

#### **E. FINANCIAL QUALIFICATIONS**

**To be submitted within five (5) days following the bid opening date.**

Provide evidence that the Bidder has sufficient financial resources to provide all work necessary to complete the project including construction, start-up, and warranty services.

A. Bidder must provide one or more of the following to assist the Owner in determining the Bidder's financial condition:

1. Copy of a reviewed or audited financial statement with accompanying notes and supplemental information. A financial statement that is not either reviewed or audited is not acceptable.
2. A certified Credit Report, current within 30 days of the date proposals are due. This credit report shall show a Dun & Bradstreet, or equal, credit risk category rating.
3. A letter from the Bidder's bank certifying their opinion of the Bidder's credit risk category rating and Bidder's current available line of credit.

B. Bidder must provide a letter from its Surety or Surety Broker which certifies that Bidder's current bonding capacity is sufficient for the bonding requirements for this Project.

C. Bidder shall identify any claims filed in court or arbitration against Bidder in the past five years which concerned Bidder's work on a construction project. For each claim, if any, the Bidder shall provide the project name, date of the claim, name of the claimant, a brief description of the nature of the claim, the court in which the case was filed and a brief description of the status of the claim (pending or, if resolved, a brief description of the resolution). Are there any pending claims against your company that should you lose the claim(s), would adversely affect your financial position or your ability to meet your obligations if awarded the contract for this project? If so, please explain.

#### **Claims Filed Against Bidder**

Sausalito-Marin City Sanitary District  
CERTIFICATION OF BIDDER'S EXPERIENCE AND QUALIFICATIONS

Project Name: \_\_\_\_\_

Date of Claim: \_\_\_\_\_

Claimant Name: \_\_\_\_\_

Court: \_\_\_\_\_

Status of Claim: \_\_\_\_\_

Explanation: \_\_\_\_\_

\_\_\_\_\_

Bidder shall also identify any claims filed in court or arbitration by Bidder against a project owner in the past five years concerning work on a project or payment for a contract. For each claim, if any, the Bidder shall provide the project name, date of the claim, a brief description of the nature of the claim, the court in which the case was filed and a brief description of the status of the claim (pending or, if resolved, a brief description of the resolution). Are there any pending claims filed by your company against a project owner that should you lose the claim(s), would adversely affect your financial position or your ability to meet your obligations if awarded the contract for this project? If so, please explain.

**Claims Filed By Bidder**

Project Name: \_\_\_\_\_

Date of Claim: \_\_\_\_\_

Claimant Name: \_\_\_\_\_

Court: \_\_\_\_\_

Status of Claim: \_\_\_\_\_

Explanation: \_\_\_\_\_

\_\_\_\_\_

All financial information provided by Bidder that is marked "Confidential" or "Proprietary" shall be handled by the Owner in accordance with Section 00700- 4.5.10, Public Records Act.

**The undersigned hereby states that all representations regarding the Bidder's Company Experience, and Safety Qualification Information are correct and true.**

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

Sausalito-Marin City Sanitary District  
CERTIFICATION OF BIDDER'S EXPERIENCE AND QUALIFICATIONS

\_\_\_\_\_  
Bidder's Name

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date

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

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

Sausalito-Marín City Sanitary District  
Marín County, California

**BID**

For the Construction of the

**SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT**

To the Honorable Board of Directors  
Sausalito-Marín City Sanitary District  
#1 East Road  
Sausalito, CA 94965

**Directors:**

The undersigned, as bidder, declares that he/she has carefully examined the Notice Inviting Sealed Bids, Instructions to Bidders, Specifications and Plans, as well as the site and conditions affecting the work, and the bidder proposes and agrees that if this bid is accepted, he/she will contract with the Sausalito-Marín City Sanitary District to provide all necessary machinery, tools, labor and apparatus for construction and do all the work and furnish all the materials called for by the Contract Documents in the manner and time therein set forth required for the construction of the District project, complete and in operating condition.

Construction shall be in strict accordance with the Contract Documents, prepared therefore and adopted by the District Board, which Contract Documents are hereby made a part hereof.

The bidder proposes and agrees to contract with said District to furnish and perform all of the described work, including subsidiary obligations as defined in said Contract Documents, for the following prices, which include all applicable sales taxes, to-wit:

Sausalito-Marín City Sanitary District  
**BID**

Item Number	Quantity	Unit	Description	Bid
1.	1	Lump Sum	Mobilization and Demobilization	
2.	1	Lump Sum	Rehabilitation of two (2) Secondary Sediment Tank Sludge Collector Systems and all appurtenant work but excluding Bid Items 3, 4, and 5.	
3.	4	Lump Sum	Removal of embedded train rail and patching of tank floor (each rail is approximately 80' in length)	
4.	8	Lump Sum	Guide Rail Relocation including anchoring	
5.	2	Lump Sum	Removal and replacement of end fillets (each fillet is approximately 20' in length)	
6.	1	Lump Sum	Concrete Curb Repair	
7.	1	Lump Sum	Replacement of three (3) Isolation Gate Valves	
TOTAL BASE BID		All work incidental thereto and connected therewith for Bid Items 1 through 7: \$ _____		

In submitting this bid, it is understood by the bidder that the right is reserved by the District to reject any and all bids and to waive any irregularities or informalities in any bid or in the bidding.

The undersigned acknowledges that bidder is skilled and experienced in the use and interpretation of plans and specifications and has carefully reviewed the plans and specifications for this project and has found them free of ambiguities and sufficient for bid purposes. Further, bidder has carefully examined the site of the work and, from his/her own observations, is satisfied as to the nature and location of the work, the character, quality and quantity of materials, and the difficulties likely to be encountered, and other items which may affect the performance of the work. The bid is based solely on these documents and observations and has not relied in any way on any explanation or interpretation, oral or written, from any other source.

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 bid.

It is understood and agreed that the undersigned will complete the work of the contract within the time provided for in the Contract Documents and Specifications governing said work, and that liquidated damages shall apply as specified.

The undersigned bidder agrees that if notified of the acceptance of this bid within ninety (90) days of the time set for opening of bids, bidder will execute the contract for the above work and

Sausalito-Marin City Sanitary District  
 BID



for the above-stated compensation, will furnish satisfactory bonds in the sum specified guaranteeing faithful performance and payment of bills, and will complete the work within the time provided for in the Contract Documents and Specifications covering the work.

The undersigned hereby certifies that this bid is genuine and not sham or collusive or made in the interest or in behalf of any persons not herein named and that the undersigned has not directly or indirectly induced or solicited any other bidder to put in a sham bid or any other person, firm, or corporation to refrain from bidding and that the undersigned has not in any manner sought by collusion to secure for himself/herself an advantage over any other bidder.

Accompanying this bid is cash, a bid bond, certified check or cashier's check, payable to or in favor of the Sausalito-Marin City Sanitary District, which it is agreed (pursuant to the Instructions to Bidders) shall be forfeited to the District if the undersigned fails to execute a contract for the performance of this work embraced by this bid and to furnish the necessary bonds specified within ten (10) days after notification of the award to the undersigned.

In accordance with Section 7028.15 of the Business and Professions Code, it is a misdemeanor for any person to submit a bid to a public agency without having a Contractor's License. The Sausalito-Marin City Sanitary District will verify that the Contractor is properly licensed before awarding the contract.

The undersigned Contractor is aware of the provisions of Section 3700 of the Labor Code, which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that Code, and will comply with such provisions before commencing performance of the work of this contract.

Addenda Acknowledged

I hereby acknowledge receipt of the following addenda:

Addendum No. 1 \_\_\_\_\_ Addendum No. 2 \_\_\_\_\_ Addendum No. 3 \_\_\_\_\_

**SIGNATURES**

PRIME CONTRACTING FIRM ORGANIZATION

Type of Organization:

Corporation

Partnership

Individual

Names of individual members of the firm:

Name of Corporation President:

Name of Corporation Secretary:

Corporation is organized under the laws of the State of

FIRM:

BY:

Signature

( )

( Corporate  
Seal )

( )

ADDRESS:

CITY:

TELEPHONE:

FAX:

CONTRACTOR'S LICENSE NO:

EXPIRATION DATE:

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

Sausalito-Marín City Sanitary District  
BID

The following Non-Collusion Affidavit is submitted by the Bidder in accordance with Section 7106 of the Public Contract Code of the State of California.

1

## BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, \_\_\_\_\_ as Principal,  
and \_\_\_\_\_ as Surety, are hereby held  
and firmly bound unto the Sausalito-Marín City Sanitary District as OWNER in the penal sum  
of \_\_\_\_\_ for the payment of which, well  
and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

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

The Condition of the above obligation is such that, where the Principal has submitted to the Sausalito-Marín City Sanitary District a certain BID, attached hereto and hereby made a part hereof, to enter into a contract in writing for the construction of the SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT.

NOW, THEREFORE;

- (a) If said BID shall be rejected, or
- (b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the CONTRACT attachment hereto (properly completed in accordance with said BID) and shall furnish BONDS for faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void; otherwise the same shall remain in force and effect, it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal

Sausalito-Marín City Sanitary District  
Bid Bond

By:

Surety

Business Address of Surety

Telephone Number of Surety

By:

Attorney-in-Fact

Note: Signature of person executing for Surety must be notarized and evidence of corporate authority attached.

The Contractor shall use this form of Bid Bond.

SAUSALITO-MARIN CITY SANITARY DISTRICT  
#1 EAST ROAD  
SAUSALITO, CALIFORNIA 94965

CONTRACTOR LICENSE INFORMATION

The bidder acknowledges that the license required for performance of the SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT is an A license.

The bidder holds the following California Contractors License(s):

1. License No. \_\_\_\_\_, Class \_\_\_\_\_, Expiration Date \_\_\_\_\_
2. License No. \_\_\_\_\_, Class \_\_\_\_\_, Expiration Date \_\_\_\_\_
3. License No. \_\_\_\_\_, Class \_\_\_\_\_, Expiration Date \_\_\_\_\_
4. License No. \_\_\_\_\_, Class \_\_\_\_\_, Expiration Date \_\_\_\_\_
5. License No. \_\_\_\_\_, Class \_\_\_\_\_, Expiration Date \_\_\_\_\_
6. License No. \_\_\_\_\_, Class \_\_\_\_\_, Expiration Date \_\_\_\_\_
7. License No. \_\_\_\_\_, Class \_\_\_\_\_, Expiration Date \_\_\_\_\_
8. License No. \_\_\_\_\_, Class \_\_\_\_\_, Expiration Date \_\_\_\_\_
9. License No. \_\_\_\_\_, Class \_\_\_\_\_, Expiration Date \_\_\_\_\_
10. License No. \_\_\_\_\_, Class \_\_\_\_\_, Expiration Date \_\_\_\_\_

Bidder's Taxpayer Identification No. \_\_\_\_\_

## DESIGNATION OF SUBCONTRACTORS

In compliance with the provisions of Sections 4100-4113 of the Public Contract Code of the State of California, and any amendments thereof, each Bidder shall set forth below: (1) the name and the location of the place of business of each subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the work in an amount in excess of one-half of one percent ( $\frac{1}{2}\%$ ) of the Contractor's total bid or \$10,000, whichever is greater, and (2) the portion of the work which will be done by each Subcontractor.

If the Contractor fails to specify a Subcontractor for any portion of the work to be performed under the contract, the Contractor shall be deemed to have agreed to perform such portion himself/herself, and he/she shall not be permitted to subcontract that portion of the work except under the conditions hereinafter set forth.

Subletting or subcontracting of any portion of the work as to which no Subcontractor was designated in the original bid shall be permitted in cases of public emergency or necessity, and then only after a finding reduced to writing as a public record of the Board of Directors of the District.

List below the name, location of the place of business and contractor's license number of each subcontractor and the portion of the work to be done by each subcontractor.

1.	<hr/>	<hr/>
	Name of Subcontractor	Contractor's License No.
	<hr/>	<hr/>
	Location of Business	Portion of Work
2.	<hr/>	<hr/>
	Name of Subcontractor	Contractor's License No.
	<hr/>	<hr/>
	Location of Business	Portion of Work
3.	<hr/>	<hr/>
	Name of Subcontractor	Contractor's License No.
	<hr/>	<hr/>
	Location of Business	Portion of Work
4.	<hr/>	<hr/>
	Name of Subcontractor	Contractor's License No.
	<hr/>	<hr/>
	Location of Business	Portion of Work
5.	<hr/>	<hr/>
	Name of Subcontractor	Contractor's License No.
	<hr/>	<hr/>

Sausalito Marin City Sanitary District  
Designation of Subcontractors



	_____ Location of Business	_____ Portion of Work
6.	_____ Name of Subcontractor	_____ Contractor's License No.
	_____ Location of Business	_____ Portion of Work
7.	_____ Name of Subcontractor	_____ Contractor's License No.
	_____ Location of Business	_____ Portion of Work
8.	_____ Name of Subcontractor	_____ Contractor's License No.
	_____ Location of Business	_____ Portion of Work

SAUSALITO-MARIN CITY SANITARY DISTRICT  
#1 EAST ROAD  
SAUSALITO, CALIFORNIA 94965

**WORKERS COMPENSATION INSURANCE CERTIFICATION**

By submitting its bid the bidder certifies as follows:

I am aware of the provisions of California Labor Code Section 3700 which require every employer to be insured against liability for workmen's compensation or to undertake self-insurance in accordance with the provisions of the Labor Code, and I will comply with such provisions before commencing performance of the work of this Contract.

By: \_\_\_\_\_  
(Official authorized to bind bidder)

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

SAUSALITO-MARIN CITY SANITARY DISTRICT  
#1 EAST ROAD  
SAUSALITO, CALIFORNIA 94965

**DEBARMENT CERTIFICATION**

By submitting its bid the bidder certifies in accordance with California Public Contract Code Section 6109 that neither the bidder nor any subcontractor included on the list of proposed subcontractors submitted with the bid is ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7. In accordance with California Public Contract Code Section 6109, contractors and subcontractors who are ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7 may neither bid on, be awarded or perform as a subcontractor on public works projects.

By: \_\_\_\_\_  
(Official authorized to bind bidder)

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

SAUSALITO-MARIN CITY SANITARY DISTRICT  
#1 EAST ROAD  
SAUSALITO, CALIFORNIA 94965

**BIDDER'S SIGNATURE PAGE**

By my signature on this proposal I certify, under penalty of perjury under the laws of the State of California, that the information submitted with this proposal for the SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT which information includes, but is not limited to, the bidder's check list, bid label, proposal cover page and bid schedule, bid bond, contractor license information, list of proposed subcontractors, workers compensation insurance certification, non-collusion affidavit, and debarment certification are accurate, true and correct, and are submitted in accordance with the requirements of the bid package issued by the Sausalito-Marín City Sanitary District concerning the SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT and applicable law. By my signature on this proposal I further certify that I am legally authorized to bind the bidder in accordance with the requirements of the bid package.

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

\_\_\_\_\_  
(Typed or printed name)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Bidder)

Bidder business address (street, city, state and zip code)

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

Bidder Business phone: ( ) \_\_\_\_\_

Bidder Business fax: ( ) \_\_\_\_\_

Sausalito-Marín City Sanitary District  
#1 East Road  
Sausalito, California 94965

### CONTRACT CHECK LIST

Complete, accurate, executed copies of the following documents must be submitted to the Sausalito-Marín City Sanitary District in accordance with the bid package issued by the District for the SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT within ten (10) working days of receiving written notice of award of the project. The bidder's security of any successful bidder that fails to do so will be forfeited to the District.

\_\_\_\_\_ Contract Check List

\_\_\_\_\_ Agreement

\_\_\_\_\_ General Conditions

\_\_\_\_\_ Performance Bond

\_\_\_\_\_ Payment Bond

\_\_\_\_\_ Certificates of Insurance and Endorsements

\_\_\_\_\_ Escrow for Deposit Agreement, if applicable

\_\_\_\_\_ Contractor Safety Manual Acknowledgement Form

Sausalito-Marín City Sanitary District  
#1 East Road  
Sausalito, California 94965

## AGREEMENT

The Sausalito-Marín City Sanitary District, ("District") enters into this agreement, dated for reference purposes only, with \_\_\_\_\_ ("Contractor").

### A. RECITALS

- A. NOTICE INVITING BIDS. The District gave notice inviting bids to be submitted by \_\_\_\_\_, 20\_\_\_\_, for the SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT by published notice and/or posting in accordance with California Public Contract Code Section 20804 and other applicable law.
- B. BID OPENING. On \_\_\_\_\_, 20\_\_\_\_, District representatives opened the bids for the SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT and read the bids aloud.
- C. PROJECT AWARD. On \_\_\_\_\_, 20\_\_\_\_, the District Board awarded the SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT to the Contractor and directed District staff to send the Contractor written notice of award of the project. The District Board conditioned award of the project on the Contractor's providing executed copies of all documents specified in the contract check list included in the bid package within ten (10) working days of receiving written notice of award of the project.
- D. REQUIRED DOCUMENTS. The Contractor has provided the District executed copies of all documents specified in the contract checklist included in the bid package within ten (10) working days of receiving written notice of award.

### AGREEMENT TERMS

The District and the Contractor agree as follows:

1. THE WORK. The Contractor shall furnish all equipment, tools, apparatus, facilities, material labor, and skill necessary to perform and complete in a good and workmanlike manner the SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT, ("Work") as shown in the Technical Specifications and Project Plans in accordance with the Contract Documents and applicable law.

Sausalito-Marín City Sanitary District  
Agreement

2. LOCATION OF WORK. The Work will be performed at the locations shown on project drawing G-1 in Sausalito and Fort Baker National Park.
3. TIME FOR COMPLETION. The Contractor must complete the Work in accordance with the Contract Documents. All work shall be completed within **100 calendar days** of the project commencement date specified in the notice to proceed for the project.
4. REMEDIES FOR TIMELY COMPLETION THE WORK.
  - 4.1 **LIQUIDATED DAMAGES:** If the Contractor fails to fully perform the Work in accordance with the Contract Documents by the Time for Completion, as such time may be amended by change order or other modification to this agreement in accordance with its terms, and/or if the Contractor fails, by the Time for Completion, to fully perform all of the Contractor's obligations under this agreement that have accrued by the Time for Completion, the Contractor will become liable to the District for all resulting loss and damage in accordance with the Contract Documents and applicable law. The District's remedies for the Contractor's failure to perform include, but are not limited to, assessment of liquidated damages of **Five Hundred Dollars (\$500) per calendar day** in accordance with California Government Code Section 53069.85 and the Contract Documents, and/or obtaining or providing for substitute performance in accordance with the Contract Documents.
5. CONTRACT PRICE AND PAYMENT. As full compensation in consideration of completion of the Work in accordance with the Contract Documents and in consideration of the fulfillment of all of the Contractor's obligations under the Contract Documents, the District will pay the Contractor in lawful money of the United States the total price of \$\_\_\_\_\_ (the "Contract Price") as specified in the Contractor's completed Bid Schedule dated \_\_\_\_\_, \_\_\_\_\_, and attached to and incorporated in this agreement. Payment to the Contractor under this agreement will be for Work actually performed in accordance with the Contract Documents and will be made in accordance with the requirements of the Contract Documents and applicable law. The District will have no obligation to pay the Contractor any amount in excess of the Contract Price unless this agreement is first modified in accordance with its terms. The District's obligation to pay the Contractor under this agreement is subject to and may be offset by charges that may apply to the Contractor under this agreement. Such charges include but are not limited to, charges for liquidated damages and/or substitute performance in accordance with the Contract Documents.
6. PREVAILING WAGES. In accordance with California Labor Code Section 1771, not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the Work is to be performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work fixed as provided in the California Labor Code must be paid to all workers engaged in performing the Work. In accordance

Sausalito-Marín City Sanitary District  
Agreement

with California Labor Code Section 1770 and following, the Director of Industrial Relations has determined the general prevailing wage per diem rates for the locality in which the Work is to be performed. In accordance with California Labor Code Section 1773, the District has obtained the general prevailing rate of per diem wages and the general rate for holiday and overtime work in the locality in which the Work is to be performed for each craft, classification or type of worker needed to perform the project. In accordance with California Labor Code Section 1773.2, copies of the prevailing rate of per diem wages are on file at the District Public Works Department and will be made available on request. Throughout the performance of the Work the Contractor must comply with all provisions of the Contract Documents and all applicable laws and regulations that apply to wages earned in performance of the Work.

7. THE CONTRACT DOCUMENTS. This agreement consists of the following documents ("Contract Documents"), all of which are incorporated into and made a part of this agreement as if set forth in full. In the event of a conflict between or among the Contract Documents, precedence will be in the following order:

- 7.1 This agreement and change orders and other amendments to this agreement signed by authorized representatives of the District and the Contractor.
- 7.2 The General Conditions and change orders and other amendments to the General Conditions signed by authorized representatives of the District and the Contractor.
- 7.3 The General Requirements, addenda to the General Requirements signed by authorized representatives of the District and issued prior to bid opening, Equal Product Proposals accepted by the District and signed by authorized District representatives prior to bid opening, and change orders and other amendments to the General Requirements signed by authorized representatives of the District and the Contractor.
- 7.4 The Project Plans and Technical Specifications, addenda to the Project Plans and Technical Specifications signed by authorized representatives of the District and issued prior to bid opening, Equal Product Proposals accepted by the District and signed by authorized District representatives prior to bid opening, and change orders and other amendments to the Project Plans and Technical Specifications signed by authorized representatives of the District and the Contractor.
- 7.5 Notice Inviting Bids.
- 7.6 Certification of Bidder's Experience and Qualifications.
- 7.7 Instructions to Bidders.

Sausalito-Marín City Sanitary District  
Agreement



- 7.8 The successful bidder's completed Bid.
  - 7.9 The successful bidder's completed Contractor License Information.
  - 7.10 The successful bidder's completed List of Proposed Subcontractors.
  - 7.11 The successful bidder's Workers Compensation Insurance Certification.
  - 7.12 The successful bidder's completed Non-collusion Affidavit.
  - 7.13 The successful bidder's Debarment Certification.
  - 7.14 The successful bidder's completed Certificates of Insurance and Endorsements.
  - 7.15 The successful bidder's executed Performance Bond.
  - 7.16 The successful bidder's executed Payment Bond.
  - 7.17 The Maintenance Bond form included in the bid package that the Contractor must execute prior to release of final payment under the Contract.
  - 7.18 The successful bidder's Qualification Statement, if any.
  - 7.19 The successful bidder's signed Signature Form.
8. INTERPRETATION OF CONTRACT DOCUMENTS. Any question concerning the intent or meaning of any provision of the Contract Documents, including, but not limited to, the Project Plans and Technical Specifications, must be submitted to the District, or his/her designee, for issuance of an interpretation and/or decision by the District in accordance with the requirements of the Contract Documents. Interpretations or decisions by any other person concerning the Contract Documents will not be binding on the District. The decision of the District, or his/her designee, shall be final.
9. ASSIGNMENT PROHIBITED. The Contractor may not assign part or all of this agreement, or any moneys due or to become under this agreement, or any other right or interest of the Contractor under this agreement, or delegate any obligation or duty of the Contractor under this agreement without the prior written approval of an official authorized to bind the District and an authorized representative of Contractor's surety or sureties. Any such purported assignment or delegation without such written approval on behalf of the District and the Contractor's sureties will be void and a material breach of this agreement subject to all available remedies under this agreement and at law and equity.
10. CERTIFICATION RE CONTRACTOR'S LICENSE. By signing this Agreement the Contractor certifies that the Contractor holds a valid Class A license issued by the

Sausalito-Marín City Sanitary District  
Agreement

California State Contractors Licensing Board, and that the Contractor understands that failure to maintain its license in good standing throughout the performance of the Work may result in discipline and/or other penalties pursuant to the California Business and Professions Code, and may constitute a material breach of this agreement subject to all available remedies under this agreement and at law and equity.

11. SEVERABILITY. If any term or provision or portion of a term or provision of this Agreement is declared invalid or unenforceable by any court of lawful jurisdiction, then the remaining terms and provisions or portions of terms or provisions will not be affected thereby and will remain in full force and effect.

Executed on \_\_\_\_\_, \_\_\_\_\_, by

CONTRACTOR

DISTRICT

\_\_\_\_\_

\_\_\_\_\_

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

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

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

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

[Attach Notary Page]

Attest:

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

\_\_\_\_\_

Sausalito-Marin City Sanitary District  
Agreement

Sausalito-Marín City Sanitary District  
#1 East Road  
Sausalito, California 94965

**PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS the Board of Sausalito-Marín City Sanitary District has awarded to \_\_\_\_\_ (designated as the "PRINCIPAL") a contract for the SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT, which contract and all of the contract documents as defined therein (designated as the "Contract") are hereby made a part hereof; and

WHEREAS, said 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 (designated as "SURETY"), an admitted surety insurer authorized to do business in the State of California, are held and firmly bound unto the District (designated as "OBLIGEE"), in the penal sum of \_\_\_\_\_ dollars (\$ \_\_\_\_\_), lawful money of the United States for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, and administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that, if the above bound PRINCIPAL, his or its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the Contract and any alteration thereof made as therein provided, on his 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 defend, indemnify and save harmless the OBLIGEE, it's officials, officers, employees, volunteers and agents, as therein stipulated, then this obligation shall become null and void, otherwise it shall be and remain in full force and virtue.

And the said SURETY, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or to the specifications or the plans accompanying the same or to any other part of the contract documents, as defined therein, shall in any way affect said SURETY's obligation on this bond, and the SURETY does hereby waive notice of any such change, extension of time, alteration or addition.

And the said SURETY, for value received, hereby stipulates and agrees that upon

Sausalito-Marín City Sanitary District  
Performance Bond

termination of the Principal's control of Work for any of the reasons specified in Sections 11.1.1.1 through 11.1.1.5 of the General Conditions of the Contract, the OBLIGEE reserves the right to refuse tender of the PRINCIPAL by the SURETY to complete the Contract work.

If any action shall be brought by the OBLIGEE upon this bond, a reasonable attorney's fee, to be fixed by the court, shall be and become a part of the OBLIGEE's judgment in any such action.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their several seals this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, the name and corporate seals of each corporate party being hereto affixed and these presents duly signed by their undersigned representatives, pursuant to authority of their governing bodies.

(Corporate Seal)

PRINCIPAL

(Acknowledgement)

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

(Corporate Seal)

SURETY

(Acknowledgement)

By: \_\_\_\_\_  
(Attorney-in-fact)  
Title: \_\_\_\_\_

*(NOTE TO SURETY COMPANY: A certified copy of unrevoked resolution of authority for the attorney-in-fact must be submitted with and attached to the executed bid bond.)*

Sausalito-Marín City Sanitary District  
Performance Bond

Sausalito-Marín City Sanitary District  
#1 East Road  
Sausalito, California 94965

**PAYMENT/LABOR AND MATERIALS BOND**

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS the Board of the Sausalito-Marín City Sanitary District has awarded to \_\_\_\_\_, (designated as the "PRINCIPAL") a contract for the SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT, which contract and all of the contract documents as defined therein (designated as the "Contract") are hereby made a part hereof; and

WHEREAS, pursuant to California Civil Code Section 3247, the PRINCIPAL is required, before entering upon the performance of the Contract, to file a payment bond with and have such bond approved by the officer or public entity by whom the Contract is awarded; and

WHEREAS, pursuant to California Civil Code Section 3248, such payment bond must be in a sum not less than one hundred percent (100%) of the total amount payable by the terms of the Contract, and must satisfy the other requirements specified in that section; and

WHEREAS, the PRINCIPAL is required in accordance with the Contract to furnish a payment bond in connection with the Contract to secure payment of claims of laborers, mechanics and materialmen employed on work under the Contract in accordance with applicable law;

NOW, THEREFORE, THESE PRESENTS WITNESSETH:

That the PRINCIPAL and the undersigned \_\_\_\_\_, as surety (designated as "SURETY"), an admitted surety insurer authorized to do business in the State of California are held and firmly bound unto all laborers, material men, and all other persons named in California Civil Code Section 3181 in the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), lawful money of the United States, being a sum not less than one hundred percent of the total amount payable by the terms of the Contract, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally, by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the PRINCIPAL or any of the PRINCIPAL's subcontractors, or the heirs, executors, administrators, successors, or assigns of any, all, or either of them, shall fail to pay any persons named in California Civil Code Section 3181, or fail to pay for any labor, materials, provisions, provender, or other supplies used in,

Sausalito-Marín City Sanitary District  
Payment Bond

upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or fail to pay amounts due under the Unemployment Insurance Code with respect to such work or labor, or fail to pay for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the PRINCIPAL or any subcontractors of the PRINCIPAL pursuant to Section 13020 of the Unemployment Insurance Code with respect to such work or labor, that the SURETY will pay for the same in an amount not exceeding the amount herein above set forth, and also, in case suit is brought upon this bond, will pay a reasonable attorney's fee to be awarded and fixed by the Court; otherwise this obligation shall be void.

It is hereby expressly stipulated and agreed by the said Surety, for value received, that this bond shall inure to the benefit of any and all of the persons named in Section 3181 of the California Civil Code so as to give a right of action to them or their assigns in any suit brought upon this bond.

It is hereby further expressly stipulated and agreed by the said Surety, for value received, that no change, extension of time, alteration or addition to the terms of the Contract or the specifications or drawings accompanying the same or to any other part of the contract documents, as defined therein, shall in any manner affect the obligations of the SURETY on this bond, and SURETY does hereby waive notice of any such change, extension, alteration, or addition.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their several seals this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, the name and corporate seals of each corporate party being hereto affixed and these presents duly signed by their undersigned representatives, pursuant to authority of their governing bodies.

(Corporate Seal)

PRINCIPAL

(Acknowledgement)

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

(Corporate Seal)

SURETY

(Acknowledgement)

By: \_\_\_\_\_  
(Attorney-in-fact)  
Title: \_\_\_\_\_

*(NOTE TO SURETY COMPANY: A certified copy of unrevoked resolution of authority for the attorney-in-fact must be submitted with and attached to the executed bid bond.)*

Sausalito-Marín City Sanitary District  
Payment Bond

Sausalito-Marín City Sanitary District  
#1 East Road  
Sausalito, California 94965

**MAINTENANCE BOND**

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS the Board of the Sausalito-Marín City Sanitary District has awarded to \_\_\_\_\_, (designated as the "PRINCIPAL") a contract for SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT, which contract and all of the contract documents as defined therein (designated as the "Contract") are hereby made a part hereof; and

WHEREAS, the PRINCIPAL is required under the terms of the Contract to furnish a bond for the correction of any defects due to defective materials or workmanship in the work performed under the Contract.

NOW, THEREFORE, we the PRINCIPAL and the undersigned \_\_\_\_\_, as surety (designated as "SURETY"), an admitted surety insurer authorized to do business in the State of California, are held and firmly bound unto the Sausalito-Marín City Sanitary District, (designated as the "OBLIGEE"), in the penal sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_), lawful money of the United States, being a sum not less than ten percent (10%) of the final Contract price, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that if, during a maintenance period of one (1) year from the date of acceptance by the OBLIGEE of the contracted work, the PRINCIPAL upon receiving written notice of a need for repairs which are directly attributable to defective materials or workmanship, shall diligently take the necessary steps to correct said defects within seven (7) days from the date of said notice, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

If any action shall be brought by the OBLIGEE upon this bond, a reasonable attorney's fee, to be fixed by the Court, shall be and become a part of OBLIGEE's judgment in any such action.

No right of action shall accrue on this bond to, or for the use of, any person or corporation other than the OBLIGEE named herein or the heirs, executors, administrator or successor of the OBLIGEE.

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

Sausalito-Marín City Sanitary District  
Maintenance Bond

(Corporate Seal)

PRINCIPAL

(Acknowledgement)

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

(Corporate Seal)

SURETY

(Acknowledgement)

By: \_\_\_\_\_  
(Attorney-in-fact)  
Title: \_\_\_\_\_

*(NOTE TO SURETY COMPANY: A certified copy of unrevoked resolution of authority for the attorney-in-fact must be submitted with and attached to the executed bid bond.)*



Sausalito-Marín City Sanitary District  
#1 East Road  
Sausalito, California 94965

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

This Escrow Agreement is made and entered into by and between Sausalito-Marín City Sanitary District, whose address is #1 East Road, Sausalito, California 94965, hereinafter called "District", \_\_\_\_\_, whose address is \_\_\_\_\_, hereinafter called "Contractor", and \_\_\_\_\_, whose address is \_\_\_\_\_, hereinafter called "Escrow Agent"

For 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 with Escrow Agent as a substitute for retention earnings required to be withheld by District pursuant to the Construction Contract entered into between the District and Contractor for the project entitled SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT 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 substitute for Contract earnings, the Escrow Agent shall notify the District within 10 days of the deposit. The market value of the securities at the time of the substitution shall be 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 \_\_\_\_\_ and shall designate the Contractor as the beneficial owner.
2. The District shall make progress payments to the Contractor for such funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.
3. When the District makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until such time as the escrow created under this contract is terminated. The Contractor may direct the investments 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.

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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 the 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 day's 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 monies 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 (4) to (6) inclusive, of this agreement and the 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

On behalf of Escrow Agent:

\_\_\_\_\_  
 Title

\_\_\_\_\_  
 Name

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
Address

At the time the Escrow Account is opened, the 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

\_\_\_\_\_  
Address

\_\_\_\_\_  
Address

Sausalito-Marín City Sanitary District  
#1 East Road  
Sausalito, California 94965

## **GENERAL CONDITIONS**

### **1. DEFINITIONS:**

The following terms as used in any agreement of which these General Conditions are a part are defined as follows:

- 1.1 Agreement: The agreement between the District and Contractor concerning the Project, as evidenced by and comprised of the Contract Documents. The agreement is also referred to as the “contract” within the Contract Documents.
- 1.2 Architect or Engineer: The person or persons so specified on the title sheet of the Technical Specifications and/or Project Plans.
- 1.3 Bid Package: All of the documents listed as comprising the entire Bid Package as specified in the Instructions to Bidders and representing the full set of documents made available to bidders on the Project.
- 1.4 District: Sausalito-Marín City Sanitary District
- 1.5 Contract Documents: All those documents listed in the Project agreement as comprising the entire agreement between the District and the Contractor.
- 1.6 Contractor: The successful bidder for the Project and party to the Project agreement with the District as specified in the Project agreement.
- 1.7 Days: Unless otherwise specified in the Contract Documents, days mean calendar days.
- 1.8 Project: SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT as described in the contract documents.
- 1.9 Construction Manager: The District, or the District’s authorized representative for administration and overall management of the Project agreement and Work. The Construction Manager is the official point of contact between the District, the Architect and/or Engineer, and the Contractor.
- 1.10 Project Plans: The primarily graphic detailed requirements concerning the Project contained in the Bid Package and any addenda to the Project Plans signed by authorized District representatives and issued prior to bid opening, Equal Product Proposals accepted by the District and signed by authorized

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District representatives prior to bid opening, and change orders and other amendments to the Project Plans signed by authorized representatives of the District and the Contractor in accordance with the requirements of the Contract Documents.

- 1.11 Resident Engineer: The party or parties charged by the District with observing the Work for compliance with the requirements of the Contract Documents and applicable laws and regulations. The Resident Engineer acts under the direction of the District and shall coordinate with the Construction Manager and Architect and/or Engineer as directed by the District in accordance with the Contract Documents.
- 1.12 Subcontractor: A person, firm or corporation that is obligated as a party to a contract with the Contractor to perform part of the Project work. For purposes of these General Conditions Subcontractors include, but are not limited to, those that are obligated as parties to a contract with the Contractor to specially fabricate and install a portion of the Project Work according to the Project Plans.
- 1.13 Technical Specifications: The detailed Project requirements contained within the Project Plans and any addenda to the Technical Specifications signed by authorized District representatives and issued prior to bid opening, Equal Product Proposals accepted by the District and signed by authorized District representatives prior to bid opening, and change orders and other amendments to the Technical Specifications signed by authorized representatives of the District and the Contractor in accordance with the requirements of the Contract Documents..
- 1.14 Work: The furnishing of all equipment, tools, apparatus, facilities, material, labor and skill necessary to perform and complete in a good and workmanlike manner the Project as shown in the Project Plans and Technical Specifications in accordance with the Contract Documents and applicable law.
- 1.15 Written Notice: Will be deemed to have been duly served for purposes of these General Conditions and any agreement of which they are a part if delivered in person to the individual or to a member of the firm or to any office of the corporation for whom the notice is intended, or if sent by registered or certified mail to the last known business address known to the party giving notice. Unless otherwise specified in the Contract Documents, the last known address of the Contractor shall be that listed in the Contractor's completed Bid.

## 2. SCOPE OF WORK

- 2.1 Documents Furnished by District. The District will furnish to the Contractor, free of charge, one (1) set of reproducible Project Plans and Technical Specifications and five (5) sets of prints of the Project Plans and Technical Specifications for

execution of the Work. Throughout the performance of the Work the Contractor must keep one copy of the Project Plans and Technical Specifications in good order and available for review by the Construction Manager, the Engineer, the Architect, and any other District contractors or representatives.

2.2 Ownership of Documents Furnished by District. All documents furnished by the District, including, but not limited to, the, Project Plans and Technical Specifications, and any copies, are the property of the District. Documents furnished by the District may not to be used on any other work. All documents furnished by the District must be returned to District upon completion of the Work.

2.3 Project Plans and Technical Specifications.

2.3.1 The Project Plans and Technical Specifications are complementary and intended to mutually describe the Work necessary to complete the Project in accordance with the Contract Documents.

2.3.2 In general, the Project Plans indicate dimensions, position and kind of construction, and the Technical Specifications indicate qualities and methods. Any Work indicated on the Project Plans and not mentioned in the Technical Specifications or vice versa must be furnished as though fully set forth in both. Work that is not particularly detailed, marked or specified shall be the same as similar Work that is detailed, marked or specified. The Contractor must furnish items necessary for the operation of equipment depicted in the Project Plans or specified in the Technical Specifications that are suitable to allow such equipment to function properly at no extra charge.

2.3.3 The Contractor must notify the Construction Manager and the Engineer/Architect as soon as possible of any apparent errors or inconsistencies, including, but not limited to, typographical or notational errors in the Project Plans, Technical Specifications, and/or in work done by others affecting the Work. The Construction Manager will issue instructions concerning any such apparent errors or inconsistencies. If the Contractor proceeds with Work impacted by apparent errors or inconsistencies without instructions from the Construction Manager, the Contractor shall do so at its sole risk and shall have all of the obligations and the District shall have all of the rights and remedies specified in Section 11 concerning any resulting damage or defect.

2.3.4 The General Conditions apply with equal force to all of the Work, including extra work authorized by the Construction Manager in accordance with the Contract Documents. The Contractor must submit any required shop diagrams and/or drawings by the times and in the quantities indicated in the Technical Specifications. Any such shop

diagrams and/or drawings must show completely the Work to be done, expanding on the Project Plans concerning details not previously shown, field conditions and the condition of the Work. Architect or Engineer review of such shop diagrams and/or drawings will concern conformance with the requirements of the Contract Documents only. The Architect or Engineer assumes no responsibility for the correctness or accuracy of the dimensions or any other contents of any shop diagrams and/or drawings submitted by the Contractor. The Contractor must check all dimensions at the Work site. Shop diagrams and/or drawings must be clearly marked with the name of the Project and the name of the Contractor, subcontractor or supplier making the submittal, and must be stamped and signed by the Contractor and submitted under a signed transmittal letter from the Contractor certifying that all dimensions have been checked at the Work site. These requirements are mandatory. The Architect or Engineer will not review shop diagrams and/or drawings that do not satisfy these requirements. The Contractor will be responsible for any and all discrepancies between dimensions of the actual Project site and/or Work and those shown on shop diagram and/or drawings submitted by the Contractor, and for any other errors contained in or resulting from such shop diagrams and/or drawings, including, but not limited to, errors in material and/or equipment quantities and any resulting errors, delays or additional cost in the performance of the Work. The Contractor will have all of the obligations and the District will have all of the rights and remedies that are specified in Section 11 concerning any discrepancies or errors in shop diagrams and/or drawings submitted by the Contractor, and concerning any resulting errors, delays or additional costs in the performance of the Work.

### 3. CONTROL OF WORK AND MATERIAL

- 3.1 Construction Manager's Status. The Construction Manager will administer the Project in accordance with the Contract Documents. After execution of the agreement and issuance of the Notice to Proceed, all correspondence and/or instructions concerning the Project between the Contractor and/or District shall be forwarded through the Construction Manager. Except as otherwise provided in the Contract Documents, the Construction Manager will not be responsible for and will not have control or charge of construction means, methods, techniques, or procedures or for safety precautions in connection with the Work. The Construction Manager, however, will have authority to reject materials and/or workmanship that do not conform to the requirements of the Contract Documents. The Construction Manager will also have the authority to require inspection or testing of the Work.
- 3.2 Architect or Engineer's Status. The Architect or Engineer will advise the Construction Manager concerning decisions on all claims of the Contractor and all other matters relating to the execution and progress of the Work or the



interpretation of the Contract Documents. The Architect or Engineer will also advise the Construction Manager concerning Work that does not conform to the Contract Documents. Whenever, in the Architect's or Engineer's opinion, it is necessary or advisable in accordance with the Contract Documents, the Architect or Engineer may recommend to the Construction Manager inspection or testing of the Work, whether or not such Work is then fabricated, installed or completed.

### 3.3 Inspection and Testing of Work and Material.

- 3.3.1 The District, the Construction Manager, the Architect or Engineer and their representatives will have access to the Work at all times wherever it is in preparation or progress. The Contractor must provide proper facilities for such access and for inspection.
- 3.3.2 The Contractor must inspect all materials as delivered and promptly return all defective materials without waiting for their rejection by the Construction Manager or Architect or Engineer.
- 3.3.3 If the Construction Manager, the Contract Documents, or any laws, ordinances, or any public authority require any Work to be tested or approved, the Contractor must give the Construction Manager timely notice of the Contractor's readiness for inspection. Inspections will be promptly made, and where practicable, at the source of supply. Any work subject to such testing that is covered up without timely notice to the Construction Manager or without the approval or consent of the Construction Manager must, if required by the Construction Manager, be uncovered for examination at the Contractor's expense. The Contractor will have all of the obligations and the District will have all of the rights and remedies that are specified in Section 11 concerning any work subject to testing that is covered up without timely notice to the Construction Manager and that is not uncovered for examination at the Contractor's Expense if required by the Construction Manager.
- 3.3.4 Tests of materials or qualification tests required by the Contract Documents must be made in accordance with the Contract Documents and the requirements of the California Building Standards Code as adopted by the District and other applicable law. Copies of all testing reports shall be distributed as required in the Contract Documents.
- 3.3.5 The District or its representatives may order re-examination of questioned Work. If ordered to do so, the Contractor must uncover such Work. If such Work is found to be according to the Contract Documents, the District shall pay the cost of uncovering and restoring the Work, unless such Work was subject to testing and covered up without timely notice to or approval of the Construction Manager. If re-examined Work is found not in accordance with the Contract Documents, the Contractor must pay



the cost of uncovering and restoring the Work. The Contractor will have all of the obligations and the District will have all of the rights and remedies that are specified in Section 11 concerning any re-examined Work not in accordance with the Contract Documents that the Contractor fails to uncover and restore at the Contractor's expense.

3.3.6 The Contractor must replace or correct without charge any material or workmanship found not to conform to the requirements of the Contract Documents, unless the District consents to accept such material or workmanship with an appropriate adjustment in the Contract Price. The Contractor must promptly segregate and remove non-conforming material from the Work site. The Contractor will have all of the obligations and the District will have all of the rights and remedies that are specified in Section 11 concerning any failure by the Contractor to replace or correct without charge any material or workmanship that does not conform to the requirements of the Contract Documents and that the District has not consented to accept.

3.4 Samples Furnished by the Contractor. The Contractor must furnish all samples for approval as directed in sufficient time to permit the Architect or Engineer to examine, approve and select samples before they are required by the progress of the Work. Portions of the Work for which samples are required and for which the Architect or Engineer has selected samples must be in accordance with such approved samples. Samples must be sent prepaid to the office of the Construction Manager or to such place as the Construction Manager may direct.

3.5 Materials and Substitutions.

3.5.1 Materials used for the Work must be new and of the quality specified. When not particularly specified, materials must be the best of their class or kind. The Contractor must, if required, submit satisfactory evidence as to the kind and quality of materials.

3.5.2 If the Contractor submitted complete information to the District for products proposed as equals in accordance with the Bid Package, and the District approved such products proposed as equals in writing, the Contractor may either furnish such products approved as equals, or furnish the products listed by manufacturer name, brand or model number in the Technical Specifications or Project Plans. The District retains the right, in its sole discretion, to accept or reject any other proposed substitution. To be considered, proposals concerning products proposed as equals must include sufficient information to permit the District to determine whether the products proposed as equals will satisfy the same performance requirements as products listed by manufacturer's name, brand or model number. Such performance requirements may include, but are not limited to, size, strength, function, appearance, ease of

maintenance and repair, and useful life requirements. If the District does not accept a proposed substitution, the Contractor must furnish the product specified in the Technical Specifications or Project Plans for the Contract Price, regardless of whether the product is specified by manufacturer's name, brand or model number, or otherwise.

3.5.3 During the performance of the Work, including off-hours and weekends, all materials must be neatly stacked, properly protected from the weather and other adverse impacts, and placed so as to avoid interference with efficient progress of the Work, with other activities of the District, or with the use of existing District facilities by the public. All materials must be delivered so as to ensure efficient and uninterrupted progress of the Work. Materials must be stored so as to cause no obstruction and so as to prevent overloading of any portion of the Work. The Contractor will be responsible for damage or loss of materials delivered to and/or stored at the Work site due to weather or other causes. The Contractor must promptly remove from the Work site all materials rejected by the District or its representatives as failing to conform to the requirements of the Contract Documents, whether such non-conforming materials have been incorporated in the Work or not. If the District or its representatives so direct, the Contractor must promptly replace and re-execute Work performed by the Contractor and order the replacement and re-execution of Work performed by subcontractors using non-conforming materials with materials that satisfy the requirements of the Contract Documents without expense to the District. The Contractor will bear the expense of making good all Work destroyed or damaged by such removal. The Contractor will have all of the obligations and the District will have all of the rights and remedies that are specified in Section 11 concerning any failure by the Contractor to replace or re-execute Work using non-conforming materials, and/or to make good all work destroyed or damaged by such removal and/or execution.

3.6 Audit and Examination of Records. The District may examine and audit at no additional cost to the District all books, estimates, records, contracts, documents, bid documents, bid cost data, subcontract job cost reports and other Project related data of the Contractor, subcontractors engaged in performance of the Work, and suppliers providing supplies, equipment and other materials required for the Work, including computations and projections related to bidding, negotiating, pricing or performing the Work or contract modifications and other materials concerning the Work, including, but not limited to, Contractor daily logs, in order to evaluate the accuracy, completeness, and currency of cost, pricing, scheduling and any other project related data. The Contractor will make available all such Project related data at all reasonable times for examination, audit, or reproduction at the Contractor's business office at or near the Work site, and at any other location where such Project related data may be kept until three years after final payment under the Agreement. Pursuant to California

Government Code Section 8546.7, if the amount of public funds to be expended is in excess of \$10,000, this Agreement shall be subject to the examination and audit of the State Auditor, at the request of the District, or as part of any audit of the District, for a period of three (3) years after final payment under the Agreement.

- 3.7 Advertising. No advertising signs of any kind may be displayed on the Work site, or on fences, offices or elsewhere adjacent to the Work site.

#### 4. CHANGES IN WORK

- 4.1 District Directed Change Orders. The District may at any time during the progress of the Work direct any amendments to the Work or any of the Contract Documents, including, but not limited to the Technical Specifications, or Project Plans. Such amendments will in no way void the agreement, but will be applied to amend the Contract Price, if such amendments affect the Contract Price, the Project schedule, if such amendments affect the Project schedule, or any other provision of the Contract Documents based on a fair and reasonable valuation of the amendment in accordance with this Section 4.
- 4.2 Writing Requirement. Change orders and other amendments to the Technical Specifications, the Project Plans, or other Contract Documents may be made only by in writing executed by authorized representatives of the District and the Contractor.
- 4.3 Contractor Proposed Change Orders. Unless the Construction Manager otherwise authorizes or the District and the Contractor otherwise agree, change order proposals submitted by the Contractor must be submitted to the Construction Manager no later than the time of the proposed change.
- 4.4 All Change Orders. All change order proposals must be submitted on completed Change Order forms provided in the Contract Documents. All such change order proposals must itemize all cost impacts of the proposed change order and include a total price for that change order and the amended Contract Price that would become effective upon execution of the change order. All change order proposals must specify any change in the Project schedule, or in any project milestone including, but not limited to, the Time for Completion, under the change order. It is understood that change orders that do not specify a change in any milestone, including, but not limited to, the Time for Completion, may be accomplished by the Time for Completion then in effect.
- 4.5 Change Order Pricing. Change order pricing will be governed by the following:
  - 4.5.1 Unit prices specified in the Contract Documents will apply to cost impacts involving items for which the Contract Documents specify unit prices.

- 4.5.2 Cost impacts involving items for which no unit prices are specified will be calculated by adding the itemized actual direct cost that would be added or reduced under the change order and an allowance for indirect costs in accordance with this Section. Itemization for direct costs for required labor must include the classifications of labor required, the total hours required for each classification, the hourly rate for each classification and other labor related costs such as liability and workers compensation insurance, social security, retirement and unemployment insurance. All other cost impacts for which no unit prices are specified must be itemized as appropriate, including the cost of tools, vehicles, phones and other equipment, and the cost of all required materials or supplies. Indirect costs added under a change order may not exceed an allowance of fifteen (15) percent of the total of combined Contractor and subcontractor direct costs added under the change order. Such allowance covers Contractor overhead and profit under the change order and includes the cost of insurance in addition to that required pursuant to Section 8.8, bond premiums, superintendent labor, clerical labor, home office expenses, worksite office expenses, and utility costs under the change order. Such costs may not be itemized as direct costs under a change order. Indirect costs deducted under a change order will be calculated in exactly the same way as indirect costs added under a change order, except indirect costs deducted under a change order may not exceed an allowance of seven and a half (7.5) percent of the total of combined Contractor and subcontractor direct costs deducted under the change order.
- 4.6 Liability Under Unapproved Change Orders. The Contractor shall be solely responsible for any and all losses, costs, or liabilities of any kind incurred by the Contractor, any subcontractor engaged in the performance of the Work, any party supplying material or equipment for the Work or any third party that are incurred pursuant to Contractor-proposed change orders prior to issuance of an approved change order executed in accordance with this Section 4. The Contractor will have all of the obligations and the District will have all of the rights and remedies that are specified in Section 11 concerning any work or resulting losses, costs, or liabilities pursuant to a Contractor proposed change order before issuance of an approved change order executed in accordance with this Section 4.
- 4.7 Changes Subject to Contract Documents. Any changes in the Work and/or the Contract Documents pursuant to change orders and any other amendments issued in accordance with the Contract Documents, including this Section 4, will in all respects be subject to all provisions of the Contract Documents, including, but not limited to, the Technical Specifications and the Project Plans, except as modified by such change orders or amendments.
- 4.8 Change Order Disputes.

- 4.8.1 Disputed District Directed Change Orders. If the Contractor disputes a District directed change order following a reasonable effort by the District and the Contractor to resolve the dispute including, at a minimum, a meeting between appropriate representatives of the Contractor and the District, the Contractor must commence performing the Work consistent with the disputed change order within five (5) working days of the last meeting between representatives of the Contractor and the District to resolve the dispute, or within the time specified in the disputed District directed change order, whichever is later. In performing Work consistent with a disputed District-directed change order pursuant to this provision the Contractor will have all of the Contractor's rights concerning claims pursuant to the Contract Documents and applicable law.
- 4.8.2 Disputed Contractor Proposed Change Orders. If the District disputes a Contractor proposed change order, the District and the Contractor will use reasonable efforts to resolve the dispute including, at a minimum, holding a meeting between appropriate representatives of the Contractor and the District. Regardless of and throughout any such efforts to resolve the dispute the Contractor must continue performing the Work irrespective of and unmodified by the disputed change order. In continuing to perform the Work, the Contractor will retain all of the Contractor's rights under contract or law pertaining to resolution of disputes and protests between contracting parties. Disputes between the District and the Contractor concerning any Contractor-proposed change order or other amendment do not excuse the Contractor's obligation to perform the Work in accordance with the Contract Documents excluding such Contractor-proposed change order or other amendment by the Time for Completion or waive any other Project milestone or other requirement of the Contract Documents.

## 5. TRENCHING AND UTILITIES

- 5.1 Excavation More Than Four Feet Deep. In accordance with California Public Contract Code Section 7104, if the Work involves excavation more than four feet deep the Contractor must promptly notify the District in writing before disturbing: any material that the Contractor believes may be hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II or Class III disposal site in accordance with provisions of existing law; any subsurface or latent physical conditions at the Work site differing from those indicated; or any unknown physical conditions at the Work site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents. The District will promptly investigate any such conditions for which notice is given. If the District finds that the conditions do materially differ, or involve hazardous waste, and would cause a decrease or increase in

the cost or time of performance of the Work, the District will issue a change order pursuant to Section 4 of these General Conditions. If a dispute arises between the District and the Contractor concerning whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the cost or time of performance, the Contractor will not be excused from any completion date provided in the Contract Documents, but shall proceed with all Work to be performed. The Contractor will retain all rights under contract or law pertaining to resolution of disputes and protests between contracting parties.

- 5.2 Excavation of Five Feet or More. In accordance with California Labor Code Section 6705, contractors performing contracts exceeding \$25,000 in cost and involving excavation five or more feet deep must submit for the District's acceptance, prior to excavation, 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 excavation. If the plan varies from the shoring system standards, it must be prepared by a registered civil or structural engineer.

5.3 Utility Relocation Costs.

5.3.1 In accordance with California Government Code Section 4215, the District assumes the responsibility for the timely removal, relocation or protection of existing main or trunkline utility facilities located on the Work site if such utilities are not identified by the District in the Technical Specifications and/or Project Plans. The District will compensate the Contractor for the costs of locating, repairing damage not due to the Contractor's failure to exercise reasonable care, and removing or relocating existing main or trunkline utility facilities located at the Work site and not identified with reasonable accuracy in the Technical Specifications and/or Project Plans. The District will also compensate the Contractor for the cost of equipment on the Project necessarily idled during such work. The Contractor will not be assessed liquidated damages for Work completion delays caused by the District's failure to provide for removal or relocation of such main or trunkline utility facilities.

5.3.2 Nothing in this provision or the Contract Documents will be deemed to require the District to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the Work site can be inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, on or adjacent to the Work site; provided, however, that nothing in this provision or the Contract Documents shall relieve the District from identifying main or trunklines in the Technical Specifications and/or Project Plans.

5.3.4 Nothing in this provision or the Contract Documents will preclude the District from pursuing any appropriate remedy against the utility for delays, which are the responsibility of the utility.



- 5.3.5 Nothing in this provision or the Contract Documents will be construed to relieve the utility from any obligation as required either by law or by contract to pay the cost of removal or relocation of existing utility facilities.
- 5.3.6 If the Contractor while performing the Work discovers utility facilities not identified by the District in the Technical Specifications and/or Project Plans, the Contractor must immediately notify the District and utility in writing.
- 5.3.7 Either the District or the utility, whichever owns existing main or trunkline utility facilities located on the Work site, shall have sole discretion to effect repairs or relocation work or to permit the Contractor to perform such repairs or relocation work at a reasonable price.

## 6. PROJECT FACILITIES

- 6.1 Work Site Offices. Any Work site office facilities used by the Contractor and/or its privities must conform to all applicable codes, ordinances and regulations. The cost of such Work site office facilities shall be paid from the included in the Contract Price.
- 6.2 District Rights of Access and Ownership. The District and its authorized representatives will at all reasonable times while such office facilities are located at the Work site (including, at a minimum, all times during which the Work is performed), have access to any such Work site office facilities used by the Contractor and/or its privities. With respect to the right of access of the District and its authorized representatives, neither the Contractor nor its privities shall have a reasonable expectation of privacy pursuant to the Fourth Amendment to the Unites States Constitution or other applicable law concerning such Work site office facilities used by the Contractor and/or its privities. Without exception, any and all Project related materials located at such Work site facilities will be deemed at all times to be District property subject to inspection and copying by the District and its authorized representatives at all reasonable times while such facilities are located at the Work site (including, at a minimum, all times during which the Work is performed). Any interference by the Contractor or its privities with the District's rights of access and/or ownership pursuant to this Section 6 will constitute a material breach of the Agreement subject to any and all remedies available pursuant to the Contract Documents and at law and equity.

## 7. PROSECUTION AND PROGRESS OF THE WORK

- 7.1 Liquidated Damages. Time is of the essence in the Agreement. The District and the Contractor agree that it will be difficult and/or impossible to determine the actual damage which the District will sustain in the event of the Contractor's

failure to fully perform the Work or to fully perform all of the Contractor's obligations that have accrued pursuant to the Agreement by the Time for Completion. Accordingly, the District and the Contractor agree in accordance with California Government Code Section 53069.85 that the Contractor will forfeit and pay to the District liquidated damages in the sum of **\$500 per day** for each and every calendar day completion of the Work and/or performance of all of the Contractor's obligations that have accrued pursuant to the Agreement is delayed beyond the Time for Completion. The District and the Contractor further agree 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 the Agreement was made, and that the District may deduct liquidated damages sums in accordance with this provision from any payments due or that may become due the Contractor under the Agreement.

- 7.2 No Damage for Delay Beyond District and Contractor Control. The Contractor will not be held responsible for delays in performance of the Work caused by delay beyond the control of both District and Contractor, such as by strikes, lockouts, or labor disturbances that are not within the control of the contractor to resolve, lack or failure of transportation, or acts of other government entities. This provision will not apply where the delay would not have occurred but for a previous contractor caused delay in the prosecution of the Work. The District will not be liable to the Contractor, any subcontractor or other entity engaged in the performance of the Work, any supplier, or any other person or organization, or to any surety or employee or agent of any of them, for damages arising out of or resulting from (i) delays beyond the control of the District and the Contractor including but not limited to fires, floods, epidemics, abnormal weather conditions, earthquakes and acts of God or acts or neglect by utility owners or other contractors performing other work, or (ii) delays caused by the District, its officials, officers, employees, agents, or volunteers, or delays caused by the Construction Manager or the Architect or Engineer, which delays are reasonable under the circumstances involved and/or are within the contemplation of the District and the Contractor. An extension of the Time for Performance in an amount equal to the time loss due to such delay(s) will be the Contractor's sole and exclusive remedy for such delay(s).
- 7.3 No Damage for Contractor Caused Delay. Contractor shall not be entitled to additional compensation for extended field or home office overhead, field supervision, costs of capital, interest, escalation charges, acceleration costs or other impacts for any delays to the extent such delays are caused by the failure of the Contractor or any subcontractor or other entity engaged in performance of the Work to perform the Work in accordance with the Contract Documents. Contractor may be eligible for additional compensation in excess of the Contract Price for delays caused by the District and/or its privities.



- 7.4 No Damage for Other Delay. Contractor will not be entitled to damages for delay to the Work caused by the following, which the District and Contractor agree will be deemed for purposes of California Public Contract Code Section 7102 either not caused by the District, and/or within the contemplation of the District and the Contractor, and/or reasonable under the circumstances:
- 7.4.1 Exercise of the District's right to sequence the Work in a manner that would avoid disruption to the District and other contractors based on: the failure of the Contractor or any subcontractor or other entity engaged in the performance of the Work to perform the Work in accordance with the Contract Documents, enforcement by the District or any other governmental agency of competent jurisdiction of any government act or regulation, or enforcement by the District of any provisions of the Agreement.
- 7.4.2 Requests for clarification or information concerning the Contract Documents or proposed change orders or modifications to the Contract Documents, including extensive and/or numerous such requests for clarification or information or proposed change orders or modifications, provided such clarifications or information or proposed change orders or modifications are processed by the District or its representatives in a reasonable time in accordance with the Contract Documents.
- 7.5 Delays Caused by the District and/or Its Privities. Either the District or the Contractor may propose a change in the Time for Completion for delays that are purported to be caused by the District and/or its privities and that are not reasonable under the circumstances involved and/or that are not within the contemplation of the District and the Contractor. Such proposed changes in the Time for Completion will constitute change order proposals subject to Section 4. In accordance with Section 4, the District and the Contractor may agree upon pricing for the cost impacts, if any, resulting from such delays. If such pricing is in anticipation of cost impacts that may, but have not yet occurred, the District will be obligated to pay the Contractor for such anticipated impacts in accordance with the Agreement and any applicable, approved change orders only to the extent the Contractor actually incurs the anticipated cost impacts. Notwithstanding anything to the contrary in Section 4.5.2, the District and the Contractor may agree to a daily rate or cap or lump sum that will apply to the cost impacts, if any, resulting from delay purportedly caused by the District and/or its privities subject to this provision. However, if such daily rate or cap or lump sum is in anticipation of cost impacts that have not yet occurred, the District will be obligated to pay such daily rate or cap or lump sum only to the extent the Contractor actually incurs such cost impacts.
- 7.6 Weather Delays. Extensions of the Time for Completion will not be allowed for weather conditions that are consistent with the following list of anticipated rain

days based on historical weather data of the National Oceanographic and Atmospheric Administration of the U.S. Department of Commerce for the record station that is nearest or most applicable to the Work site. Extensions of the Time for Completion for delays due to adverse weather will be allowed only if the number of rain days exceeds those listed in the following table and the Contractor can verify to the District's reasonable satisfaction that such adverse weather caused actual delay in the timely completion of the Work. No extensions of the Time for Completion will be granted for rain days in addition to those listed in the following table that merely result in delays that do not or would not, themselves, result in failure to complete the Work by the Time for Completion. Anticipated rain days are as follows: January, [9]; February, [6]; March, [5]; April, [4]; May, [3]; June, [0]; July, [0]; August, [0]; September, [0]; October, [3]; November, [4]; December, [9].

- 7.7 Delay Claims. Whenever the Contractor claims a delay for which the Time for Completion may be extended, the Contractor must request an extension of time within five (5) days of the start of the delay. The request must be in writing and describe in detail the cause for the delay, and, if possible, the foreseeable extent of the delay.
- 7.8 Contractor Coordination of the Work.
  - 7.8.1 The District reserves the right to do other work in connection with or in the vicinity of the Project by contract or otherwise, and Contractor shall at all times conduct the Work so as to impose no hardship on the District, others engaged in the Work or other contractors working at the Work site. The Contractor will adjust, correct and coordinate the Work with the work of others so that no delays result in the Work or other work at or near the Work site.
  - 7.8.2 If any part of the Work depends for proper execution or results upon the work of the District or any other contractor, the Contractor will, before proceeding with such Work, promptly report to the District any apparent discrepancies or defects in such other Work. Failure of the Contractor to promptly report any apparent discrepancy or defect will be deemed an acceptance of the District's or other contractor's Work as fit and proper.
  - 7.8.3 The Contractor will anticipate the relations of the various trades to the progress of the Work and will ensure that required anchorage or blocking is furnished and set at proper times. Anchorage and blocking necessary for each trade shall be part of the Work except where stated otherwise.
  - 7.8.4 The Contractor will provide proper facilities at all times for access of the District, the Construction Manager, Architect or Engineer, and other authorized District representatives to conveniently examine and inspect the Work.

## 8. CONTRACTOR RESPONSIBILITIES

- 8.1 Eligibility. By executing the Agreement, the Contractor certifies that the Contractor is not ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7. In accordance with California Public Contract Code Section 6109(a), contractors who are ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7 may neither bid on, be awarded or perform the Work. The Contractor shall hold harmless and indemnify the District from and against any and all damages, costs, and liability arising from or as a consequence of any violation of Public Contract Code Section 6109.
- 8.2 Supervision of the Work. The Contractor will be solely responsible for the performance of the Work, including portions of the Work to be performed by subcontractors. The Contractor is charged with ensuring that all orders or instructions from the District, Construction Manager or Architect/Engineer are disseminated to and followed by all subcontractors engaged in performance of the Work. The Contractor will supervise the Work using the Contractor's best skill and attention. At any time during the progress of the Work, the District, the Construction Manager, or the Architect/Engineer may require the Contractor and/or subcontractors engaged in performance of the Work to attend a project meeting and the Contractor will attend, and ensure the attendance of any subcontractors whose attendance is required by the District and/or advisable in light of the matters to be addressed at the meeting.
- 8.3 Contractor's Superintendent. The Contractor will keep on the Work, throughout its progress, a competent, English speaking superintendent and any necessary assistants, all satisfactory to the District. The superintendent may not be changed without the consent of the District. The superintendent will represent the Contractor and all directions given by the District to the superintendent will bind the Contractor in accordance with the Agreement. Superintendent time included in Contractor's completed bid schedule and/or in approved change orders, if any, must be included in Contractor's approved overhead rate and may not be charged as a direct cost.
- 8.4 Competent Employees. The Contractor must at all times enforce strict discipline and good order among the Contractor's employees and may not employ on the Work any unfit person or anyone not skilled in the Work assigned, or anyone incompetent or unfit for the duties of that person. When the District determines that a Contractor employee does not satisfy the requirements of this provision, upon notice from the District, the Contractor must ensure that employee performs no further Work and is no longer present at the Work site. Any such Contractor employee may not again be employed on the Work without District approval.

- 8.5 Items Necessary for Proper Completion of the Work. Except as otherwise noted in the Contract Documents, the Contractor will provide and pay for all labor, materials, equipment, permits, fees, licenses, facilities and services necessary for the proper execution and timely completion of the Work in accordance with the Contract Documents.
- 8.6 Construction Reports. The Contractor must submit daily construction reports detailing the daily progress of the Work to the Construction Manager on a weekly basis.
- 8.7 Subcontracting.
- 8.7.1 By executing the Agreement, the Contractor certifies that no subcontractor included on the list of proposed subcontractors submitted with the Contractor's bid is ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7. In accordance with California Public Contract Code Section 6109(a), subcontractors who are ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7 may neither bid on, be awarded or perform as a subcontractor on the Work. In accordance with California Public Contract Code Section 6109(b), any contract on a public works project entered into between a contractor and a debarred subcontractor is void as a matter of law. The Contractor will ensure that no debarred subcontractor receives any public money for performing the Work, and any public money that may have been paid to a debarred subcontractor for the Work is returned to the District. The Contractor will be responsible for payment of wages to workers of a debarred subcontractor who has been allowed to perform the Work.
- 8.7.2 The Agreement and the performance of the Work are subject to the requirements of the Subletting and Subcontracting Fair Practices Act codified at California Public Contract Code Section 4100 and following. If the Contractor fails to specify a subcontractor or specifies more than one subcontractor for the same portion of the Work in excess of one-half of 1 percent of the Contractor's total bid, the Contractor agrees that the Contractor is fully qualified to perform that portion of the Work with the Contractor's own forces, and that the Contractor will perform that portion of the Work with the Contractor's own forces. If after award of the Agreement the Contractor subcontracts, except as provided for in California Public Contract Code Sections 4107 or 4109, any such portion of the Work, the Contractor will be subject to the penalties set forth in California Public Contract Code Sections 4110 and 4111, including cancellation of the Agreement, assessment of a penalty of up to 10 percent of the amount of the subcontract, and disciplinary action by the Contractors State License Board.

- 8.7.3 No contractual relationship exists between the District and any subcontractor engaged in performance of the work.
- 8.7.4 Incorporation of Contract Documents. The Contractor must incorporate the Contract Documents in each contract with a subcontractor engaged in the performance of the Work. The Contractor shall be solely responsible for any delay or additional costs incurred as a result of its failure to provide adequate or accurate project information to a subcontractor that results in improper submittals and/or work, or time or other impacts is the sole responsibility of the Contractor. The Contractor will have all of the obligations and the District will have all of the remedies that are specified in Section 11.
- 8.7.5 Coordination of Subcontract Work: The Contractor is responsible for scheduling the Work of subcontractors so as to avoid delay or injury to either Work or materials.

## 8.8 Insurance.

- 8.8.1 All required insurance shall be provided in the form of "occurrence"-type policies underwritten by admitted insurers in the State of California with a rating of A or better from the current year Best Rating Guide. All policies must be issued at the expense of the Contractor and must be maintained at the Contractor's expense throughout the performance of the Work.
- 8.8.2 The Contractor and any subcontractors engaged in performance of the Work must secure payment of workers compensation in accordance with California Labor Code Section 3700 and other applicable law. The Contractor must verify that all Subcontractors comply with this requirement.
- 8.8.3 Within ten (10) working days following notice of award the Contractor must submit to the District along with executed copies of all other documents specified in the Contract Check List certificates of insurance and endorsements evidencing that the Contractor has in effect and will maintain throughout the performance of the Work the following kinds and amounts of insurance:
  - 8.8.3.1 Worker's Compensation Insurance. Workers Compensation and Employers Liability insurance as required by any applicable law, regulation or statute, including the provisions of Division IV of the Labor Code of the State of California, and any act or acts amending it. Such insurance must cover the full liability of the

Contractor. The Contractor's Employer's Liability Insurance must be in an amount no less than \$1,000,000.00 per claim.

- 8.8.3.2 Commercial General Liability and Automobile Liability Insurance. Coverage for liability because of Bodily Injury and property Damage including, but not limited to the following coverage:

Completed Operations and Products Liability  
Bodily Injury  
Personal Injury  
Broad Form Property Damage Liability  
Contractual Liability insuring the obligations assumed by the Contractor under the Contract Documents  
Automobile Liability, including owned, non-owned and hired automobiles  
Coverage for the XCU hazards of Explosion, Collapse and Underground

- 8.8.3.3 Commercial Umbrella Policy. The Commercial policy is to insure losses above General liability, Employers liability, and auto liability limits.

- 8.8.3.4 Not Used (Builder's Risk)

- 8.8.4 The insurance furnished by the Contractor must be primary in the amount of any loss.

- 8.8.5 The limits of the insurance required above will be at least:

Comprehensive General Liability

Bodily Injury Liability	\$2,000,000	each occurrence
	\$1,000,000	each aggregate
Property Damage Liability	\$2,000,000	each occurrence
	\$1,000,000	each aggregate

Comprehensive Automobile Liability

Bodily Injury Liability	\$1,000,000	each person
	\$1,000,000	each occurrence
Property Damage Liability	\$1,000,000	each occurrence

Commercial Umbrella Policy \$1,000,000



Builders Risk issued for the value of the Contract Price:

8.8.6 For each insurance policy required under the Agreement except for the required workers compensation insurance policy, the Contractor must provide endorsements that add the Sausalito-Marin City Sanitary District as an additional insured. For any work performed within the City of Sausalito the Contractor must provide endorsements that add City of Sausalito as an additional insured. Such endorsements must: provide that the insurance required to be furnished by the Contractor will be primary as regards the District, and that the District's insurance will be excess of and not contribute to the insurance required to be furnished by the Contractor; that the District will receive 30 day written notice of any reduction or cancellation of such insurance required to be furnished by the Contractor; and include a severability of interest clause acceptable to the District. Said endorsement shall be at least as broad as Insurance Services Office form number CG2010 (Ed. 11/85).

8.9 Indemnities.

8.9.1 The Contractor will take all responsibility for the Work, and will bear all losses and damages directly or indirectly resulting to the Contractor, any subcontractors engaged in performance of the Work, the District, its officials, officers, employees, agents, volunteers and consultants, and to third parties on account of the performance or character of the Work, unforeseen difficulties, accidents, or occurrences of other causes predicated on active or passive negligence of the Contractor or of any subcontractor engaged in performance of the Work. To the fullest extent permitted by law the Contractor will indemnify, defend and hold harmless the District, its officials, officers, employees, agents, volunteers and consultants from and against any or all loss, liability, expense, claims, costs (including costs of defense), suits, and damages of every kind, nature and description (including, but not limited to, penalties resulting from exposure to hazards in violation of the California Labor Code) directly or indirectly arising from the performance of the Work ("Claims").

8.9.2 The Contractor will indemnify, defend and hold harmless the District, the District's officials, officers, employees, volunteers, agents and the Construction Manager and Engineer for all liability on account of any patent rights, copyrights, trade names or other intellectual property rights that may apply to the Contractor's performance of the Work. The Contractor will pay all royalties or other charges as a result of intellectual property rights that may apply to methods, types of construction, processes, materials, or equipment used in the performance of the Work,

and will furnish written assurance satisfactory to the District that any such charges have been paid.

- 8.9.3 The Contractor assumes all liability for any accident or accidents resulting to any person or property as a result of inadequate protective devices for the prevention of accidents in connection with the performance of the Work. The Contractor will indemnify, defend, and hold harmless the District and its officials, officers, employees, agents, volunteers and consultants from such liability.
- 8.9.4 Approval of the Contractor's certificates of insurance and/or endorsements does not relieve the Contractor of liability under this Section 8.9. The Contractor will defend, with legal counsel reasonably acceptable to the District, any action or actions filed in connection with any Claims and will pay all related costs and expenses, including attorney's fees incurred. The Contractor will promptly pay any judgment rendered against the District, its officials, officers, employees, agents, volunteers or consultants for any Claims. In the event the District, its officials, officers, employees, agents, volunteers or consultants is made a party to any action or proceeding filed or prosecuted against Contractor for any Claims, Contractor agrees to pay the District, its officials, officers, employees, agents, volunteers and consultants any and all costs and expenses incurred in such action or proceeding, including but not limited to, reasonable attorneys' fees.
- 8.9.5 In accordance with California Civil Code Section 2782(a), nothing in the Agreement will be construed to indemnify the District for its sole negligence, willful misconduct, or for defects in design furnished by District. In accordance with California Civil Code Section 2782(b), nothing in the Agreement will be construed to impose on the Contractor or to relieve the District from liability for the District's active negligence. By execution of the Contract Documents the Contractor acknowledges and agrees that the Contractor has read and understands the insurance and other requirements of Agreement, and this Section 8.9, which is a material element of consideration.
- 8.10 Licenses/Permits. The Contractor must, without additional expense to the District, provide traffic control and/or SWPPP as required by the District obtained conditional encroachment permit. All permits will be paid for and initiated by the District.
- 8.11 California Labor Code Requirements.
  - 8.11.1 In accordance with California Labor Code Section 1810, eight (8) hours of labor in performance of the Work shall constitute a legal day's work under the Agreement.



- 8.11.2 In accordance with California Labor Code Section 1811, the time of service of any worker employed in performance of the Work is limited to eight hours during any one calendar day, and forty hours during any one calendar week, except in accordance with California Labor Code Section 1815, which provides that work in excess of eight hours during any one calendar day and forty hours during any one calendar week is permitted upon compensation for all hours worked in excess of eight hours during any one calendar day and forty hours during any one calendar week at not less than one-and-one-half times the basic rate of pay.
- 8.11.3 The Contractor and its subcontractors will forfeit as a penalty to the District \$25 for each worker employed in the performance of the Work for each calendar day during which the worker is required or permitted to work more than eight (8) hours in any one calendar day, or more than forty (40) hours in any one calendar week, in violation of the provisions of California Labor Code Section 1810 et seq.
- 8.11.4 In accordance with California Labor Code Section 1773.2, the District has determined the general prevailing wages in the locality in which the Work is to be performed for each craft or type of work needed to be as published by the State of California Department of Industrial Relations, Division of Labor Statistics and Research, a copy of which is on file in the District and shall be made available on request. The Contractor and subcontractors engaged in the performance of the Work shall pay no less than these rates to all persons engaged in performance of the Work.
- 8.11.5 In accordance with California Labor Code Section 1775, the Contractor and any subcontractors engaged in performance of the Work must comply Labor Code Section 1775 which establishes a penalty of up to \$50 per day for each worker engaged in the performance of the Work that the Contractor or any subcontractor pays less than the specified prevailing wage. The amount of such penalty shall be determined by the Labor Commissioner. The Contractor or subcontractor shall pay the difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate. If a subcontractor worker engaged in performance of the Work is not paid the general prevailing per diem wages by the subcontractor, the Contractor is not liable for any penalties therefore unless the Contractor had knowledge of that failure or unless the Contractor fails to comply with all of the following requirements:
- 8.11.5.1 The contract executed between the Contractor and the subcontractor for the performance of part of the Work must

include a copy of the provisions of California Labor Code Sections 1771, 1775, 1776, 1777.5, 1813, and 1815.

8.11.5.2 The Contractor must monitor payment of the specified general prevailing rate of per diem wages by the subcontractor by periodic review of the subcontractor's certified payroll records.

8.11.5.3 Upon becoming aware of a subcontractor's failure to pay the specified prevailing rate of wages, the Contractor must diligently take corrective action to halt or rectify the failure, including, but not limited to, retaining sufficient funds due the subcontractor for performance of the Work.

8.11.5.4 Prior to making final payment to the subcontractor, the Contractor must obtain an affidavit signed under penalty of perjury from the subcontractor that the subcontractor has paid the specified general prevailing rate of per diem wages employees engaged in the performance of the Work and any amounts due pursuant to California Labor Code Section 1813.

8.11.6 In accordance with California Labor Code Section 1776, the Contractor and each subcontractor engaged in performance of the Work, must keep accurate payroll records showing the name, address, social security number, work classification, 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 in performance of the Work. Each payroll record must contain or be verified by a written declaration that it is made under penalty of perjury, stating that the information contained in the payroll record is true and correct and that the employer has complied with the requirements of Sections 1771, 1811, and 1815 for any work performed by the employer's employees on the public works project. The payroll records required pursuant to California Labor Code Section 1776 must be certified and must be available for inspection by the District and its authorized representatives, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations and must otherwise be available for inspection in accordance with California Labor Code Section 1776.

8.11.7 In accordance with California Labor Code Section 1777.5, the Contractor, on behalf of the Contractor and any subcontractors engaged in performance of the Work, will be responsible for ensuring compliance with California Labor Code Section 1777.5 governing employment and payment of apprentices on public works contracts.

8.11.8 In case it becomes necessary for the Contractor or any subcontractor engaged in performance of the Work to employ on the Work any person in a trade or occupation (except executive, supervisory, administrative, clerical, or other non manual workers as such) for which no minimum wage rate has been determined by the Director of the Department of Industrial Relations, the Contractor must pay the minimum rate of wages specified therein for the classification which most nearly corresponds to Work to be performed by that person. The minimum rate thus furnished will be applicable as a minimum for such trade or occupation from the time of the initial employment of the person affected and during the continuance of such employment.

- 8.12 Laws and Ordinances. The Contractor and all subcontractors engaged in the performance of the Work must conform to the following specific rules and regulations as well as all other laws, ordinances, rules and regulations that apply to the Work. Nothing in the Technical Specifications or Project Plans is to be construed to permit Work not conforming to these codes:

National Electrical Safety Code, U. S. Department of Commerce  
National Board of Fire Underwriters' Regulations  
California Building Standards Code as adopted by the District  
Manual of Accident Prevention in Construction, latest edition, published by A.G.C. of America  
Industrial Accident Commission's Safety Orders, State of California  
Regulations of the State Fire Marshall (Title 19, California Code of Regulation) and Applicable Local Fire Safety Codes  
Labor Code of the State of California - Division 2, Part 7, Public Works and Public Agencies.

- 8.13 Guaranty. The Contractor guarantees all of the Work for one year from the date the District accepts the Work. Upon receiving written notice of a need for repairs which are directly attributable to defective materials or workmanship the Contractor must make good any defects arising or discovered in any part of the Work by diligently commencing the necessary repairs within seven (7) days from the date of notice from the District. If the Contractor fails to make good any defects in the Work in accordance with this provision, in addition to any other available remedy under the contract or at law or equity, the District may make good or have made good such defects in the Work and deduct the cost from amounts that may be due or become due the Contractor, and/or call on the Contractor's maintenance bond for the cost of making good such defects and for the District's reasonable legal costs, if any, of recovering against the bond. The Contractor shall remain responsible for repairing any Work found to be defective regardless of when such defect is discovered by the District.

- 8.14 Safety.

- 8.14.1 In accordance with generally accepted construction practices and applicable law, the Contractor will be solely and completely responsible for conditions of the Work site, including safety of all persons and property during performance of the Work. This requirement will apply continuously and not be limited to normal working hours. For purposes of California Labor Code Section 6400 and related provisions of law the Contractor and the Contractor's privities and any other entities engaged in the performance of the Work 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 engaged in the performance of the Work. Neither the District nor its officials, officers, employees, agents, volunteers or consultants 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 engaged in the performance of the Work.
- 8.14.2 Review and observation by the District, the Construction Manager, the Architect or Engineer, and/or other representatives of the District of the Contractor's performance of the Work will not constitute review of the adequacy of the Contractor's safety measures in, on, or near the Work site. Such reviews and observations do not relieve the Contractor of any of the Contractor's obligations under the Contract Documents and applicable law to ensure that the Work site is maintained and the Work is performed in a safe manner.
- 8.14.3 The Contractor will be solely responsible for the implementation and maintenance of safety programs to ensure that the Work site is maintained and the Work is performed in a safe manner in accordance with the Contract Documents and applicable law.
- 8.14.4 Within ten (10) working days following notice of award the Contractor must submit to the District a copy of the Contractor's Safety Plan.
- 8.14.5 The Contractor must furnish and place proper guards and systems for the prevention of accidents, including, but not limited to, those systems required pursuant to Title 8, Section 1670 and following of the California Code of Regulations concerning safety belts and nets. The Contractor must provide and maintain any other necessary systems or devices required to secure safety of life or property at the Work site in accordance with accepted standards of the industry and applicable law. The Contractor must maintain during all night hours sufficient lights to prevent accident or damage to life or property.
- 8.14.6 The Contractor is responsible for the prevention of accidents on work under its direction and for complying with Federal, State, and local safety

requirements, including District's "Contractor Safety Handbook" guidelines. The District's "Contractor Safety Handbook" is available for Contractor review at the office of the Owner. The Contractor shall execute the acknowledgement form within the District's Contractor Safety Handbook prior to receiving the Notice to Proceed.

#### 8.14.7 CONFINED SPACE PROCEDURES

The District has adopted its own safety program for confined space entry, which is consistent with General Industrial Safety Order (GISO) Section 5157. While working on this project, the Contractor and all subcontractors shall comply with the District's Safety Manual confined space entry procedures for all permit space entries.

#### 8.14.8 HAZARDOUS MATERIALS EXPOSURE

The Contractor shall so perform its work as not to expose personnel to, or to discharge into the atmosphere from any source whatever, smoke, dust, asbestos, toxic chemicals, or other air contaminants in violation of the laws, rules, and regulations of the governmental entities having jurisdiction. Contractor or subcontractors removing 100 or more square feet of asbestos must be "Certified" in accordance with state law. All work involving exposure to asbestos and all other hazardous materials shall be performed with protection of personnel in compliance with all applicable regulations and safety requirements.

#### 8.14.9 SPECIFIC SAFETY REQUIREMENTS

The Contractor shall:

1. Notify its employees, vendors and subcontractors of the job safety requirements.
2. Ensure that its employees, vendors, and subcontractors have the safety training and equipment appropriate for the job.
3. Provide its employees, vendors, and subcontractors with the appropriate MSDS sheets and instructions required for the job.
4. All of the above shall be in accordance with the Contractor's Safety program.

#### 8.14.10 SUBMITTALS

Before work is started, the Contractor shall submit his/her safety program and those of all listed subcontractors. Each element shall include requirements for personal protective equipment and

training.

#### 8.14.11 SCAFFOLDING, SHORING AND BRACING

The Contractor shall furnish and maintain all scaffolding, shoring and bracing required in the prosecution of the work of building construction and trenching. All such auxiliary construction shall be made and maintained in accordance with any and all statutes, laws, ordinances, rules or regulations of the State of California or other authorities or insurance companies having jurisdiction there over. The Contractor's attention is called to Section 6700 and following of the Labor Code, which is the section covering trench safety, which is included as a part of this Contract.

The Contractor shall submit to the District specific plans to show details of provision for scaffolding, rigging and fall protection. This in no way relieves the Contractor from the requirement of maintaining safety in all operations performed by him or his subcontractors. The detailed plan showing design of bracing, sloping or other provisions shall be prepared by a registered Civil or Structural Engineer as required. Acceptance by the District or its designated agent only constitutes acknowledgment of the submission and does not constitute review or approval of the design, design assumptions, or criteria, completeness of submissions, applicability to areas of intended use, nor implementation of the plans, which are solely the responsibility of the Contractor and his registered engineer.

In accordance with Section 6705 of the Labor Code, the Contractor shall submit to the District specific plans to show details of provision for worker protection from caving ground. This in no way relieves the Contractor from the requirement of maintaining safety in all operations performed by him or his subcontractors. The detailed plan showing design of shoring, bracing, sloping or other provisions shall be prepared by a registered Civil or Structural Engineer as required. Acceptance by the District or its designated agent only constitutes acknowledgment of the submission and does not constitute review or approval of the design, design assumptions, or criteria, completeness of submissions, applicability to areas of intended use, nor implementation of the plans, which are solely the responsibility of the Contractor and his registered engineer.

- 8.15 Assignment of Unfair Business Practice Claims. In accordance with California Public Contract Code Section 7103.5, the Contractor and any subcontractors offer and agree to assign to the District all rights, title, and interest in and to all



causes of action the Contractor or any subcontractors may have under Section 4 of the Clayton Act (15 U.S.C. § 15) or under the Cartwright Act (Chapter 2 (commencing with § 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services or materials pursuant to this contract. This assignment shall be made and become effective at the time the District tenders final payment to the Contractor, without further acknowledgement by the parties.

## 9. MEASUREMENT AND PAYMENT

9.1 F.O.B. All shipments must be F.O.B. destination to the Work site and/or other sites indicated in the Contract Documents. The Contract Price is all-inclusive (including sales tax). There shall be no additional compensation paid for containers, packing, unpacking, drayage or insurance.

### 9.2 Payment

9.2.1 On or about the first day of each calendar month the Contractor will submit to the Construction Manager a verified application for payment and schedule of values supported by a statement showing all materials actually installed during the preceding month and the cost of labor actually expended in the performance of the Work. Unless otherwise provided in the Contract Documents, no allowances or payments will be made for material or equipment not placed at the Work site.

9.2.2 To be eligible for payment the Contractor's applications for payment must include certified payroll reports prepared in accordance with California Labor Code Section 1776 and the Agreement for each employee of the Contractor and any subcontractors engaged in the performance of the Work during the preceding months, applications for payment will not be processed without certified payroll reports.

9.2.3 In accordance with California Public Contract Code Section 20104.50, the District will review applications for payment as soon as practicable after receipt. Any application or part of an application that is determined to be improper will be returned to the Contractor as soon as practicable, but no later than seven (7) days after receipt by the District, along with a written description of the reasons why the application is improper. The Contractor's failure to submit a schedule in the time specified in Section 3.8, or its submission of a schedule to which the District has taken any uncorrected exception, shall serve as a basis for returning an application for payment in its entirety.

9.2.4 Unless the Contractor has elected to post securities in lieu of retention in accordance with California Public Contract Code Section 22300 and the Agreement, and the Contractor and the District have executed an escrow

agreement in accordance with the Public Contract Code and the Agreement, the District will make progress payments to the Contractor in accordance with applicable law in the amount of ninety-five (95) percent of the value of the labor actually performed and the material incorporated in the Work as specified in Contractor's verified application for payment upon approval by the District's authorized representative(s). Payment of progress payments will not be construed as acceptance of the Work performed. If the Contractor has elected to post securities in lieu of retention in accordance with Public Contract Code Section 22300 and the Agreement and the Contractor and the District have executed an escrow agreement in accordance with the Public Contract Code and the Agreement, the District will make payments to the Contractor or the Contractor's escrow agent in accordance with such escrow agreement.

9.2.5 The District will pay the Contractor's final invoice in accordance with applicable law and this Section 9 following acceptance of the Work provided that:

9.2.5.1 The Contractor has furnished evidence satisfactory to the District that all claims for labor and material have been paid, or the time for filing valid stop notices has passed and no stop notices have been filed, or all stop notices filed have been released by valid release or release bond acceptable to the District.

9.2.5.2 No claim has been presented to the District by any person based upon any acts or omissions of the Contractor or any subcontractor engaged in the performance of the Work.

9.2.5.3 No other claim or dispute exists under the Agreement or applicable law concerning payment of the Contractor's final invoice and/or release of the Agreement retention.

9.2.5.4 The Contractor has filed with the District the Maintenance Bond provided in the Contract Documents with duly notarized signatures of an authorized representative of the Contractor and an attorney-in-fact of an admitted surety insurer acceptable to the District and such Maintenance Bond binds the Contractor as Principal and the Surety in accordance with its terms in the amount of 10% of the final Contract Price.

9.2.5.5 The Contractor's application for final payment contains a written waiver of all claims against the District of which the Contractor may not yet asserted at the time of the submission of the application for final payment.



9.2.6 In accordance with California Public Contract Code Section 20104.50, if the District fails to make a progress payment within thirty (30) days of receipt of an undisputed, properly submitted application for payment, the District will pay the Contractor interest equivalent to the legal rate set forth in subdivision (a) of California Code of Civil Procedure Section 685.010. The number of days available to the District to make a payment without incurring an interest obligation pursuant to this provision and California Public Contract Code Section 20104.50 will be reduced by the number of days, if any, by which the District has delayed return of an application for payment beyond the seven day return requirement set forth in Section 9.2.5.

9.3 Non-Allowable Direct Charges. The following costs are not allowable direct charges under the Agreement. The following costs may only be paid under the Agreement, if at all, as part of any allowance for contractor overhead and/or profit established under the Agreement.

9.3.1 Labor costs in excess of applicable prevailing wages pursuant to the Agreement and applicable law, liability and workers compensation insurance, social security, retirement and unemployment insurance and other employee compensation and benefits pursuant to bona fide compensation plans in effect at the time specified for the opening of Project bids for contractor and subcontractor employees engaged in the performance of the Work. However, in no event will allowable direct labor charges under the agreement include employee bonuses, employee vehicles or vehicle allowances, employee telephones or telephone allowances, or employee housing or housing allowances, whether or not such benefits are part of a bona fide compensation plan in effect at the time specified for the opening of Project bids.

9.3.2 Superintendent labor and clerical labor.

9.3.3 Bond premiums

9.3.4 Insurance in excess of that required under Section 8.8

9.3.5 Utility costs

9.3.6 Work Site office expenses

9.3.7 Home office expenses.

9.4 Retention. The District or its agent may, in accordance with the Contract Documents and applicable law, withhold any payment of monies due or that may become due the Contractor because of:

9.4.1 Defective work not remedied or uncompleted work.

9.4.2 Claims filed or reasonable evidence indicating probable filing of claims.

9.4.3 Failure to properly pay subcontractors or to pay for material or labor.

9.4.4 Reasonable doubt that the Work can be completed for the balance then unpaid.

9.4.5 Damage to another contractor.

9.4.6 Damage to the District.

9.4.7 Damage to a third party.

9.4.8 Delay in the progress of the Work, which, in the District's judgment, is due to the failure of the Contractor to properly expedite the Work.

9.4.9 Liquidated damages or other charges that apply to the Contractor under the Agreement.

9.4.10 Any other lawful basis for withholding payment under the contract.

9.5 Securities in Lieu of Retention.

9.5.1 In accordance with Public Contract Code Section 22300, except where federal regulations or polices do not permit substitution of securities, the Contractor may substitute securities for any moneys withheld by the District to ensure performance of the Work. At the Contractor's request and expense, securities equivalent to the amount withheld will be deposited with the District, or with a state or federally chartered bank in California as the escrow agent, who will then pay those moneys to the Contractor under the terms of an Escrow for Security Deposit agreement. The Escrow for Security Deposit agreement is provided in the Contract Documents. Upon satisfactory completion of the Work, the securities will be returned to the Contractor.

9.5.2 Alternatively, at the Contractor's request and expense, the District will pay retentions earned directly to the escrow agent. At the Contractor's expense, the Contractor may direct investment of the payments into securities. Upon satisfactory completion of the Work, the Contractor will

receive from the escrow agent all securities, interest, and payments received by the escrow agent from the District pursuant to this provision and the terms of the Escrow for Security Deposit agreement. The Contractor will, within 20 days of receipt of payment, pay to each subcontractor the respective amount of interest earned, less costs of retention withheld from each Subcontractor, on monies withheld to ensure the Contractor's performance of the Work.

9.5.3 Securities eligible for investment in accordance with this provision include those listed in Government Code Section 16430, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and the District.

9.5.4 The Contractor will be the beneficial owner of any securities substituted for moneys withheld and will receive any interest thereon.

## 10. PROJECT ACCEPTANCE AND CLOSEOUT

10.1 Occupancy. The District reserves the right to occupy or use any part or parts or the entire of the Work before the Work is fully performed. Subject to applicable law, exercising this right will in no way constitute acceptance of any part of the Work so occupied or used or acceptance of the entire Work, nor will such occupancy or use in any way affect the times when payments will become due the Contractor, nor will such occupancy or use in any way prejudice the District's rights under the Agreement, any Agreement bonds, or at law or equity. Occupancy or use shall not waive the District's rights to assess liquidated damages in accordance with Section 7 after the date of such occupancy or use.

10.2 Work Completion and Final Inspection. When the Contractor considers the Work is completed, the Contractor will submit written certification to the Construction Manager specifying that: the Contract Documents have been reviewed; the Work has been inspected for compliance with the Contract Documents; the Work has been completed in accordance with the Contract Documents; and that equipment and systems have been tested in the presence of the District's representative and are operational. The District and/or the District's authorized representatives will make an inspection to verify that the Work is complete and will notify the Contractor in writing of any incomplete or deficient Work. The Contractor will take immediate steps to remedy the stated deficiencies and give notice of correction to the Construction Manager. Upon receiving a notice of correction, the District or the District's authorized representatives will re-inspect the Work. The Contractor must correct all punch list items within 15 working days after the issuance of the punch list. Before acceptance of the Work the Contractor must submit: one set of reproducible mylars of the Project Record Drawings (As-Builts), and any equipment operating and maintenance instructions and data, warranties.

### 10.3 Work Acceptance.

- 10.3.1 All finished Work will be subject to inspection and acceptance or rejection by the District, the Construction Manager, and the Architect or Engineer and other government agencies having jurisdiction over the Work. Final acceptance of the Work will be at the discretion of the District.
- 10.3.2 The District will accept the Work in writing only when the Work has been completed to the District's reasonable satisfaction. Progress payments will in no way be construed as acceptance of any part of the Work.
- 10.3.3 In evaluating the Work, no allowance will be made for deviations from the Technical Specifications, Project Plans or other Contract Documents unless already approved in writing in accordance with the requirements of Section 4, above.
- 10.3.4 The fact that the Work and materials have been observed from time to time and that progress payments have been made does not relieve the Contractor of the responsibility of replacing and making good any defective or omitted work or materials in accordance with the requirements of the Contract Documents.

## 11. REMEDIES AND DISPUTES

- 11.1 Failure to Correct Work. Within ten (10) working days of receiving written notice from the District describing Work that is defective or that is otherwise not in accordance with the requirements of the Agreement and/or applicable law and directing that such Work be corrected, the Contractor and/or the Contractor's sureties must give the District written notice of the intent of the Contractor and/or the Contractor's sureties to correct such Work and commence correction of such Work in accordance with the District's notice and the Agreement. If the Contractor and/or the Contractor's sureties do not give the District written notice of intent to correct such Work and commence correction of such Work within ten (10) working days of receipt of the District's notice, then the District may correct such work and/or have such work corrected for the account and at the expense of the Contractor and/or its sureties, and the Contractor and/or its sureties will be liable to the District for any resulting excess cost. The District may, in addition to all other remedies that the District may have under the Agreement and at law or equity, deduct any such excess cost of completing the Work from amounts that are due or that may become due the contractor.
- 11.2 Termination.

- 11.2.1 In accordance with California Public Contract Code Section 7105, in addition to all other available remedies that the District may have under the Agreement, and at law or equity, the District may terminate the Contractor's control of the Work:
- 11.2.1.1 If the Contractor or any of its subcontractors engaged in the performance of the Work fails to timely perform the Work and/or any of the Contractor's material obligations under the Contract Documents, including but not limited to submission of an acceptable schedule, that have accrued except for due to reasons beyond the control of the Contractor pursuant to the Contract Documents.
  - 11.2.1.2 If the Contractor is adjudged bankrupt, or if it should make a general assignment for the benefit of creditors, or if a receiver should be appointed on account of its creditors.
  - 11.2.1.3 If the Contractor or any of the subcontractors engaged in the performance of the Work persistently or repeatedly refuses or fails to supply enough properly skilled workmen or proper materials for the timely completion of the Work.
  - 11.2.1.4 If the Contractor fails to make prompt payment to subcontractors engaged in the performance of the Work or for material or labor used in the performance of the Work in accordance with the Contract Documents and applicable law.
  - 11.2.1.5 If the Contractor or any subcontractors engaged in the performance of the Work persistently disregards laws or ordinances applicable to the performance of the Work, or the instructions of the District, the Construction Manager, the Architect, or other authorized representatives of the District.
  - 11.2.1.6 For any reason or for no reason, at the District's sole discretion.
- 11.2.2 If the District intends to terminate the Contractor's control of the Work for any of the reasons specified in Sections 11.2.1.1 through 11.2.1.5, above, the District will immediately serve written notice to the Contractor and its sureties in accordance with the Contract Documents. Notice of the District's intent to terminate the Contractor's control of the Work will be given by registered or certified mail and specify the grounds for termination, the required cure and the time by which the cure must be effected. Upon receipt of notice of the District's intent to terminate the Contractor's control of the Work for any of the reasons specified in

provisions 11.2.1.1 through 11.2.1.5, above, the Contractor will have ten (10) days from receipt of the notice or a longer time specified in the notice to cure its default. If the Contractor does not effect the required cure by the time specified in the notice, the District will issue a written notice of termination to the Contractor and its sureties by registered or certified mail. The notice of termination will specify: that upon receipt of the notice the Contractor's right to perform or complete the Work, including on behalf of the Contractor's sureties, is terminated; that the Contractor's sureties will have the right to take over and complete the Work and perform all of the Contractor's remaining obligations that have accrued under the Agreement; and that if the Contractor's sureties do not both give the District written notice of their intention to take over and perform the Agreement and commence completion of the Work and performance of all of the Contractor's remaining obligations that have accrued under the Agreement within ten (10) days after receipt of notice of termination that the District may declare the Contractor's sureties in default and take over the completion of the Work or have the Work completed for the account and at the expense of the Contractor and its sureties, and the Contractor and its sureties will be liable to the District for any resulting excess cost. The District may, in addition to all other available remedies that the District may have under the Contract Documents and at law or equity, deduct any such excess cost of completing the Work from amounts that are due or that may become due the Contractor.

- 11.2.3 Upon termination of the Contractor's control of the Work for any of the reasons specified in Sections 11.2.1.1 - 11.2.1.5, the Contractor will, if so directed by the District, immediately remove from the Work site any and all materials and personal property belonging to the Contractor which have not been incorporated in the Work and the Contractor and its sureties will be liable upon their bond for all damages caused the District by reason of the Contractor's failure to complete the Work.
- 11.2.4 Upon termination of the Contractor's control of the Work for any of the reasons specified in provisions 11.2.1.1 through 11.2.1.5, above, the District reserves the right to refuse tender of the Contractor by any surety to complete the Work.
- 11.2.5 If the District completes or has completed any portion of, or the whole of the Work, following termination of the Contractor's control of the Work for any of the reasons specified in Sections 11.2.1.1 through 11.2.1.5, above, the District will neither be liable for nor account to the Contractor or the Contractor's sureties in any way for the time within which, or the manner in which such Work is performed, or for any changes made in such Work or for the money expended in satisfying claims and/or suits and/or other obligations in connection with completing the Work. If,

following termination of the Contractor's control of the Work for any of the reasons specified in Sections 11.2.1.1 through 11.2.1.5, above, the unpaid balance of the Contract Price exceeds the expense of completing the Work, including compensation for additional legal, managerial and administrative services and all other amounts due for the completion of the Work and/or satisfaction of claims of the District and/or others arising out of the Agreement and any other charges that apply to the Contractor under the Agreement, the difference will be paid to the Contractor. If such expenses of completing the Work exceed the unpaid balance of the Contract Price, the Contractor or its sureties will pay the difference to the District.

11.2.6 If the Agreement or Contractor's control of the Work is terminated for any reason, no allowances or compensation will be granted for the loss of any anticipated profit by the Contractor.

11.2.7 In accordance with California Government Code Section 4410, in the event a national emergency occurs, and public work being performed by contract is stopped, directly or indirectly, because of the freezing or diversion of materials, equipment or labor, as the result of an order or a proclamation of the President of the United States, or of an order of any federal authority, and the circumstances or conditions are such that it is impracticable within a reasonable time to proceed with a substantial portion of the work, then the District and the Contractor may, by written agreement, terminate the Agreement. In accordance with California Government Code Section 4411, such an agreement will include the terms and conditions of the termination of the contract and provision for the payment of compensation or money, if any, which either party will pay to the other or any other person, under the facts and circumstances in the case. Compensation to the Contractor will be determined on the basis of the reasonable value of the work done, including preparatory work. As an exception to the foregoing, in the case of any fully completed separate item or portion of the Work for which there is a separate contract price, the contract price shall control. The parties may in any other case adopt the contract price as the reasonable value of the work or any portion of the work done.

### 11.3 Disputes.

11.3.1 In accordance with California Public Contract Code Section 20104.2, the following procedures apply to claims of \$375,000 or less between the Contractor and the District:

11.3.1.1 The claim shall be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or



before the date of final payment. Nothing in this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims.

11.3.1.2 For claims of less than fifty thousand dollars (\$50,000), the District shall respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the District may have against the Contractor.

11.3.1.2.1 If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the District and the Contractor.

11.3.1.2.2 The District's written response to the claim, as further documented, shall be submitted to the Contractor within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor in producing the additional information, whichever is greater.

11.3.1.3 For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the District shall respond in writing to all written claims within 60 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the District may have against the Contractor.

11.3.1.3.1 If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the District and the Contractor.

11.3.1.3.2 The District's written response to the claim, as further documented, shall be submitted to the Contractor within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information or requested documentation, whichever is greater.



- 11.3.1.4 If the Contractor disputes the District's written response, or the District fails to respond within the time prescribed, the Contractor may so notify the District, in writing, either within 15 days of receipt of the District's response or within 15 days of the District's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the District shall schedule a meet and confer conference within 30 days for settlement of the dispute.
- 11.3.1.5 Following the meet and confer conference, if the claim or any portion remains in dispute, the Contractor may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the Contractor submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.
- 11.3.1.6 This article does not apply to tort claims and nothing in this article is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.
- 11.3.2 In accordance with California Public Contract Code Section 20104.4, the following procedures apply to civil actions to resolve claims of \$375,000 or less between the District and the Contractor:
- 11.3.2.1 Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to non-binding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

11.3.2.2 If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

11.3.2.2.1 Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this article shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds.

11.3.2.2.2 In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, pay the attorney's fees of the other party arising out of the trial de novo.

11.3.2.3 The court may, upon request by any party, order any witnesses to participate in the mediation or arbitration process.

11.3.3 In accordance with California Public Contract Code Section 20104.6:

11.3.3.1 The District shall not fail to pay money as to any portion of a claim, which is undisputed except as otherwise provided in the contract.

11.3.3.2 In any suit filed under Public Contract Code Section 20104.4 concerning this contract, the District shall pay interest at the legal rate on any arbitration award or judgment. Such interest shall accrue from date the suit was filed.

## SECTION 01010

### SUMMARY OF WORK

#### PART 1 GENERAL

- 1.01 DESCRIPTION: This Section covers a summary of the Work and requirements supplementary to those of the Conditions of the Contract and other Sections of the specifications.

WORK UNDER THIS CONTRACT. The work includes furnishing all labor, materials and equipment for the SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT including but not limited to; 1) demolition of the existing collector systems, 2) removal of embedded train rails in the tank floors, 3) complete new collector system installation in each of two (2) tanks, 4) replacement of isolation gates, 5) electrical work as require for system proximity sensors and additional work as needed to construct and inspect a complete and operational project as specified in these Contract Documents.

- 1.02 NOT USED

- 1.03 OWNER SUPPLIED ITEMS – NOT USED

- 1.04 CONTRACTOR USE OF SITE AND PREMISES

- A. Limit use of site and premises to allow Owner occupancy and Work by other Contractors. The Contractor shall cooperate fully with the Owner and other Contractors to provide continued access to their respective work sites. The Contractor's failure to do so shall not constitute the basis for delay claims by the Contractor.
- B. Liquidated Damages apply for this project as defined in paragraph 4 of the Agreement.

- 1.05 ANTICIPATED CONCURRENT WORK

- A. District operations shall be accommodated at all times.
- B. The District's system integrator (Calcon Systems) shall be accommodated at all times.

- 1.06 PRECONSTRUCTION CONFERENCE

- A. Refer to Section 01040 for required attendees. Scheduling and location of the Pre-Construction Conference shall be confirmed with the Owner no more than five (5) days after the Notice to Proceed.

- 1.07 STORM WATER POLUTION PREVENTION PROGRAM (SWPPP)Not Used

END OF SECTION 01010

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## SECTION 01014

### PROTECTION OF THE ENVIRONMENT

#### PART 1 GENERAL

##### 1.01 general

- A. **The Contractor shall maintain all work areas within and outside the project boundaries free from environmental pollution that would be in violation to any federal, state, or local regulations.**

#### PART 2 PROTECTION OF THE ENVIRONMENT

##### 2.01 WATERWAYS

- A. The Contractor shall observe the rules and regulations of the State of California and agencies of the United States government prohibiting the pollution of stream or river waters by the dumping of any refuse, rubbish, or debris therein.

##### 2.02 AIR QUALITY

- A. Air pollution due to construction operations shall be minimized by wetting down bare soils during windy periods, use of properly operating combustion emission control devices on construction vehicles and equipment used by contractors, and by shutting down motorized equipment not actually in use.
- B. Trash burning will not be permitted on the construction site.
- C. If temporary heating devices are necessary for protection of the work, such devices shall be of an approved type that will not cause pollution of the air.

##### 2.03 CONSTRUCTION NOISE

- A. The Contractor shall conduct all work, using appropriate construction methods and equipment, and furnish and install acoustical barriers, all as necessary so that no noise emanating from the process or any related tool or equipment will exceed legal noise levels. Contractor shall have machinery equipped with mufflers that meet the provisions of the State Resources Code and the Vehicle Code.

##### 2.04 NIGHTTIME WORK

- A. If the Contractor desires to perform any work outside of normal construction hours, Contractor shall obtain all necessary permits from the appropriate agencies and make all necessary arrangements prior to commencing. The Contractor shall be responsible for all overtime costs for District staff during these work hours.

END OF SECTION 01014

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## SECTION 01025

### MEASUREMENT AND PAYMENT

#### PART 1 GENERAL

##### 1.01 ADMINISTRATIVE SUBMITTALS

- A. Schedule of Values: Submit schedule on a form acceptable to the Owner's Representative.
- B. Schedule of Estimated Progress Payments:
  - 1. Submit with initially acceptable schedule of values.
  - 2. Submit adjustments thereto upon request by the Owner's Representative.
- C. Application for Payment: In accordance with Paragraph 9.2 of the General Conditions and as specified herein.
  - 1. Final Application for Payment: As specified in Paragraph 9.2.5 of the General Conditions and as specified herein.

##### 1.02 SCHEDULE OF VALUES

- A. Reference Section 01301, Schedule of Values.
- B. Format:
  - 1. Reflect schedule of values format included in conformed Proposal, specified allowances, and alternates. Provide separate value for each item or task on the progress schedule. List each item of equipment separately.
  - 2. An unbalanced or front-end loaded schedule will not be acceptable.
  - 3. List separately such items as Bonds and insurance premiums, mobilization, demobilization and contract closeout, facility startup, and other appropriate Division 1 activities.
  - 4. Include proportional amount of Contractor's overhead and profit in each line item.
  - 5. List separately an item for monthly schedule update.

##### 1.03 SCHEDULE OF ESTIMATED PROGRESS PAYMENTS

- A. Show estimated payment requests throughout Contract Times and aggregating initial Contract Price.
- B. Base estimated progress payments on initially acceptable progress schedule. Adjust to reflect subsequent adjustments in progress schedule and Contract Price as reflected by modifications to the Contract Documents.
- C. Submit adjusted payment schedule with each Application for Payment.

#### 1.04 APPLICATION FOR PAYMENT

- A. Reference Paragraph 9 of the General Conditions.
- B. Transmittal Summary Form:
  - 1. Provided by Owner's Representative.
  - 2. Attach one Summary Form with each detailed Application for Payment for each schedule.
  - 3. Include Request for Payment of Materials and Equipment on Hand as applicable.
  - 4. Execute certification by authorized officer of Contractor.
- C. Use detailed Application for Payment Form suitable to Owner's Representative.
  - 1. Provide separate form for each schedule as applicable.
  - 2. Include accepted schedule of values for each schedule or portion of Work, the unit price breakdown for Work to be paid on unit price basis, a listing of Owner-selected equipment, if applicable, and allowances, as appropriate.
  - 3. Form(s) to conform to the examples furnished by Owner's Representative for Lump Sum Work and materials on hand.
- D. Preparation:
  - 1. Round values to nearest dollar.
  - 2. List each Change Order and Written Amendment executed prior to date of submission as separate line item. Totals to equal those shown on the Summary Sheet for each schedule as applicable.
  - 3. Submit Application for Payment, including a Transmittal Summary Form and detailed Application for Payment Form, a listing of materials on hand, and such supporting data as may be requested by Owner's Representative.

#### 1.05 MEASUREMENT-GENERAL

- A. Weighing, measuring, and metering devices used to measure quantity of materials for Work shall be suitable for purpose intended and conform to tolerances and specifications as specified in National Institute of Standards and Technology, Handbook 44.

#### 1.06 PAYMENT

- A. General: See General Conditions, Paragraph 9.2.
- B. Payment for all Work shown or specified in the Contract Documents is included in the Contract Price. No measurement or payment will be made for individual items.



#### 1.07 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

- A. Payment will not be made for following:
  - 1. Loading, hauling, and disposing of rejected material.
  - 2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
  - 3. Rejected loads of material, including material rejected after it has been placed by reason of failure of Contractor to conform to provisions of Contract Documents.
  - 4. Material not unloaded from transporting vehicle.
  - 5. *Defective* Work not accepted by Owner.
  - 6. Material remaining on hand after completion of Work.

#### 1.08 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

- A. Partial Payment: Reference Paragraph 9.2 of the General Conditions. No partial payments will be made for mechanical, electrical, or interface equipment delivered or stored unless acceptable final operation and maintenance manuals are delivered to Owner's Representative.
- B. Final Payment: Reference Paragraph 9.2.5 of the General Conditions. Final Payment will be made only for materials incorporated in Work; remaining materials, for which partial payments have been made, shall revert to Contractor unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

#### 1.09 FINAL APPLICATION FOR PAYMENT

- A. Reference Paragraph 9.2.5 of the General Conditions, Section 01700, Contract Closeout, and as may otherwise be required in Contract Documents.
- B. Prior to submitting final application, make acceptable delivery of required documents.

#### PART 2 PRODUCTS (Not Used)

#### PART 3 EXECUTION

#### 3.01 MEASUREMENT AND PAYMENT

##### A. SECONDARY SEDIMENT TANKS COLLECTOR SYSTEM REHABILITATION PROJECT:

- 1. BID ITEM NO. 1: MOBILIZATION AND DEMOBILIZATION (LUMP SUM)
  - A. Payment for mobilization and demobilization will be made at the lump sum price named in the Bid Schedule under Item 1, which shall constitute full compensation for completion of mobilization based on Section 11 of the Caltrans

Standard Specifications. Mobilization includes mobilization and demobilization necessary for each component of the project.

- B. Mobilization and demobilization of a boat and all related appurtenances as necessary for access to the work is included in the individual bid items and is not included here.
- C. Progress payments for work under this Bid Item shall be paid based upon the estimated percent completion of the necessary mobilization and demobilization work for this project.
- D. In no case may the contract price for mobilization exceed 10 percent of the original contract amount.

Payment for construction of work identified above, will be made at the bid price in the Bid Schedule under Total Base Bid, which price shall constitute full compensation for completion of all such work as required per the Contract Documents.

### 3.02 ADJUSTMENT OF QUANTITY AND PAYMENT AMOUNT

- A. The quantities shown in the bid schedule are for bid purposes only. Additive or deductive quantities of the work will be adjusted by the Owner. For lump sum items, payment for quantity adjustments will be based on unit price breakdowns provided with the Schedule of Values. Final amount of payment will be adjusted based on actual quantity of work installed or completed multiplied by the bid price for each bid item, or based on the unit price breakdowns provided with the Schedule of Values.

END OF SECTION 01025

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## SECTION 01030

### SPECIAL PROJECT CONSTRAINTS

#### PART 1 GENERAL

- 1.01 GENERAL: The Contractor is cautioned that one of the Work locations is in the vicinity of waste water facilities with continuous conveyance of a raw wastewater. Construction activities shall be performed safely and shall not limit or obstruct District operations.

##### A. General Shutdown/Operational Constraints:

1. No Plant shutdowns shall be permitted.
2. Owner operation and maintenance personnel will cooperate in every way that is practical to facilitate Contractor's operations. However, certain shutdowns and connections may only be permissible at times other than normal working hours such as nights or weekends. No additional compensation will be paid to the Contractor because of these constraints.
3. No shutdowns shall be allowed to start on Fridays, Saturdays, Sundays, or holidays, unless it is so directed or approved in writing by the Owner.
4. Shutdowns shall generally be scheduled during normal working hours, from 7:00am to 3:00pm.
5. Prior to initiating any shutdown, the Contractor shall develop a plan to indicate how they will address the issues listed below for each shutdown. The plan shall contain sufficient detail to demonstrate that the Contractor can complete the required work safely in accordance with the specified time limits. The plan shall be submitted in accordance with Section 01300.
6. Contractor shall coordinate staging of materials with District staff prior to delivering to site. Space is limited at the tank locations. Staging and assembly may be performed at alternate locations or within the tank as necessary, however, preassembly of components should be performed prior to shutdowns to the extent possible in order to minimize the outage duration for each tank.
7. All materials associated with a shutdown must be on site prior to initiating the shutdown.

##### B. Work Sequence:

1. Only one (1) sediment tank may be isolated at a time in order to maintain normal operations. Once the Contractor has submitted an acceptable work schedule

(which should be designed to minimize the outage duration) District staff will isolate and spray down one tank. Note that the floors will remain slippery. This work will require two consecutive weekdays to complete after which the Contractor shall take over all confined entry and monitoring activities including but not limited to entry permits, gas detection, lighting, and ventilation.

2. Prior to starting work on the second tank the first tank must complete a two (2) week performance test period as part of system commissioning.
3. After completion of each tank the Contractor must remain available for repairs during the two (2) week commissioning periods.
4. Isolation gate valve replacements for the sediment tank effluent gates may be performed concurrently with work on each respective tank. The third isolation gate will require a flow bypass in order to access the gate. The District will provide bypass pumping. The Contractor will be responsible for all other aspects of the gate valve replacement including confined space entry.
5. Each sediment tank must be restored to operation within 3 weeks of the shutdown to ensure water quality compliance per the District's operating permit.
6. **Note: In the event work progresses into wet weather (typically beginning in late October or early November) scheduling of work may require adjustment to ensure both tanks are available for use. In the event the start of rehabilitation of the second tank does not occur in time to place the tank on-line prior to wet weather it may be necessary to postpone work on that tank until wet weather ends (typically in May).**

## 1.02 SUBMITTALS

- A. All submittals shall be done in accordance with Section 01300, Submittals. The submittals included in this Section 01030 are:
  1. Plan for staging and/or disposal of materials
  2. Shutdown plans and schedule for minimizing the outage duration
  3. Layout plans identifying means and methods to achieve manufacturer's tolerances

## 1.03 NOT USED

## 1.04 NOT USED

## PART 2 PRODUCTS

### 2.01 STORAGE OF MATERIALS AND EQUIPMENT

- A. No public or private property adjacent to the site shall be used for storage or disposal of the Contractor's equipment and materials, and excess excavated material, unless prior written approval is obtained from the legal owner.

## PART 3 EXECUTION

### 3.01 CONVENIENCE AND ACCESS

- A. The Contractor shall conduct the operation so as to cause minimum obstruction or inconvenience to the District staff and neighboring facilities. Staff must be able to access the District's facilities at all times.
- B. The Contractor shall conduct the operation so as to cause minimum obstruction or inconvenience to the Public. Public must be able to access private and commercial facilities at all times.
- C. Contractor shall stage only one work vehicle at the plant level. All other vehicles shall be parked on East Road to minimize impact on normal operations.
- D. The Contractor shall cooperate with the collection and removal of trash and garbage and adjacent to the construction site.

END OF SECTION 01030

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## SECTION 01040 COORDINATION

### PART 1 GENERAL

#### 1.01 SUBMITTALS

- A. Photographs and other records of examination, as required herein.

#### 1.02 OTHER WORK

- A. Coordination of Owner's Work by Others: Reference Paragraph 7.8 of the General Conditions and Section 01010 for coordination of Owner's work by others, if any, and coordinate Contractor's Work with Owner or Owner's designated coordinator.
- B. It is anticipated that work will be performed concurrently at the plant site by others, including District forces and other contractors, during scheduled performance of Work under these Contract Documents.

#### 1.03 PROJECT MEETINGS

- A. General:
  - 1. Owner: Schedule physical arrangements for meetings throughout progress of Work, prepare meeting agenda with Contractor input and distribute with written notice of each meeting, preside at meetings, record minutes to include significant proceedings and decisions, and reproduce and distribute copies of minutes within 7 days after each meeting to participants and parties affected by meeting decisions.
  - 2. Representatives of Owner, Contractor, and Subcontractors shall attend meetings, as needed, or as requested by Owner.
- B. Preconstruction Conference:
  - 1. As set forth in Section 01010, Summary of Work, a preconstruction conference will be held at site.
  - 2. Attendees may include but not be limited to:
    - a. Owner's representatives.
    - b. Contractor's office representative.
    - c. Contractor's resident superintendent.
    - d. Contractor's quality control representative.
    - e. Contractor's safety program representative.
    - f. Subcontractors' representatives whom Contractor may desire or Owner may request to attend.

- g. Utility agencies' representatives (as required)
- h. Others as appropriate.

C. Progress Meetings:

- 1. Owner will schedule regular progress meetings at site, conducted weekly or as needed to review Work progress, progress schedule, Submittals submissions schedule, Application for Payment, contract modifications, and other matters needing discussion and resolution.
- 2. Attendees will include:
  - a. Owner's representative(s).
  - b. Contractor, and appropriate Subcontractors and Suppliers.
  - c. Others as appropriate.

D. Quality Control and Coordination Meeting(s):

- 1. Scheduled by Owner on regular basis and as necessary to review test and inspection reports, and other matters relating to quality control of Work and work of other contractors.
- 2. Attendees will include Owner's Representatives, Contractor, Contractor's designated quality control representative, selected Subcontractors and Suppliers, and other equipment item suppliers.

E. Pre-installation Meetings:

- 1. When required, or as called out in individual Specification sections, convene at site prior to commencing Work of that section.
- 2. Require attendance of entities directly affecting, or affected by, Work of that section.
- 3. Notify Owner's Representative four (4) days in advance of meeting date.
- 4. Provide suggested agenda to Owner's Representative to include reviewing conditions of installation, preparation and installation or application procedures, and coordination with related Work and work of others.

F. Other Meetings: In accordance with Contract Documents and as may be required by Owner.

1.04 SEQUENCE OF WORK

- A. Include the Milestones and sequences of Work specified herein as a part of the progress schedule required under Section 01310, PROGRESS SCHEDULES.



- B. Perform Work continuously during critical connections and changeovers, and as required to prevent interruption of Owner's operations.
- C. Coordinate proposed Work with the Owner's facility operations personnel before effecting unit shutdowns. Under no circumstances cease Work at the end of a normal working day if such actions may inadvertently cause a cessation of any facility operating process, in which case, remain onsite until necessary repairs are complete.
- D. Do not close lines, divert flow, open switches, or take other action which would affect the operation of existing systems, except as specifically required by the Contract Documents and after approval of Owner. Such actions will be considered by Owner upon 48 hours written notice to Owner unless otherwise specified.
- E. See Specification Section 01030 – Special Constraints for further information regarding sequence of work.

#### 1.05 ADJACENT FACILITIES AND PROPERTIES

##### A. Examination:

1. After Effective Date of the Agreement and before Work at site is started, Contractor and Owner shall make thorough examination of pre-existing conditions including existing buildings, structures, pipelines, and other improvements in vicinity of Work, as applicable, which might be impacted or potentially damaged by construction operations.
2. Contractor shall take two (2) sets of photographs and videotape preexisting conditions prior to the start of the work. One set of photographs and videotape shall be given to the Owner. Periodic reexamination shall be jointly performed to include, but not limited to, cracks in structures, settlement, leakage, and similar conditions. Include public roads and improvements to adjacent private property as part of preexisting condition documentation.
3. Record observations for signature of Owner's Representative and Contractor.

##### B. Documentation:

1. Submit two copies of photographs, videotapes and other records documenting examination for Owner's Representative's signature. Owner's Representative will review, sign, and return one record copy of every observation document and photograph to Contractor to be kept on file in Contractor's field office as site records.
2. These observations and photographs and videotapes are intended for use as indisputable evidence in ascertaining whether and to what extent damage

occurred as a result of Contractor's operations, and are for protection of Contractor and Owner.

#### 1.06 OWNER'S OCCUPANCY

- A. Owner will occupy the premises during the entire period of construction for the conduct of its normal operations. Cooperate with Owner in all construction operations to minimize conflict and to facilitate Owner usage.

#### 1.07 RELOCATION OF EXISTING FACILITIES

- A. Minor Relocations:
  - 1. During construction, minor relocations of Work may be necessary.
  - 2. Provide complete relocation of existing structures and Underground Facilities; including piping utilities, equipment, structures, electrical conduit wiring, electrical duct banks, and other necessary items.
  - 3. Use only new materials for relocated facilities. Match materials of existing facilities, unless otherwise shown or specified.
  - 4. Perform relocations to minimize downtime of existing facilities. Install new portions of existing facilities in their relocated position prior to removal of existing facilities, unless otherwise accepted by Owner.
- B. Relocation of services conveying hazardous or toxic materials shall comply with all regulatory requirements for handling of these materials including, but not limited to, requirements of OSHA, PSM, EPA, AQMD, and UFC.

#### 1.08 PHYSICAL CONDITIONS

- A. Exercise reasonable care to verify locations of existing subsurface structures and underground facilities, proceeding in accordance with Paragraph 5.3 of the General Conditions.
- B. Thoroughly check immediate and adjacent areas subject to excavation by visual examination (and by electronic metal and pipe detection equipment, as necessary) for indications of subsurface structures and underground facilities.
- C. Make exploratory excavations where existing Underground Facilities or structures may potentially conflict with proposed Underground Facilities or structures. Conduct exploratory excavations in presence of Owner's Representative and sufficiently ahead of construction to avoid possible delays to Contractor's Work.

#### 1.09 REFERENCE POINTS AND SURVEYS

- A. Location and elevation of bench marks, as applicable, are shown on Drawings.

- B. Dimensions for lines and elevations for grades of structures, appurtenances, and utilities are indicated on Drawings, together with other pertinent information required for laying out Work. If conditions vary from those indicated, notify Owner immediately, who will make minor adjustments required.
- C. Owner's Representative may perform checks to verify accuracy of Contractor's layout Work and that completed Work complies with Contract Documents.
- D. Any existing survey points or other control markers destroyed without proper authorization shall be replaced by owner of the survey points or control markers at the Contractor's expense.
- E. Contractor's Responsibilities:
  - 1. Provide survey and layout as required.
  - 2. Locate and protect reference points prior to starting Work at site.
  - 3. Check and establish exact location of existing facilities prior to construction of new facilities and any connections thereto.
  - 4. In event of discrepancy in data provided by Owner, request clarification before proceeding with Work.
  - 5. Preserve and leave undisturbed control staking until Owner has completed checks it deems necessary.
  - 6. Re-establish reference points resulting from destruction by Contractor's operations.
  - 7. Retain professional land surveyor or civil engineer registered in California who shall perform or supervise engineering surveying necessary for additional construction staking and layout.
  - 8. Maintain complete accurate log of survey Work as it progresses as a Record Document.
  - 9. Submit documentation, as requested.
  - 10. Provide competent employee(s), tools, stakes, and other equipment and materials as Owner may require to:
    - a. Check layout, survey, and measurement Work performed by others.
    - b. Measure quantities for payment purposes.
    - c. Cooperate with Owner so that checking and measuring may be accomplished with least interference to Contractor's operations.

#### 1.10 SPILLS, OVERFLOWS, LEAKS, ILLEGAL DISCHARGES

- A. If an overflow, spill, discharge, or leak occurs due to the Contractor's operations or neglect, and any fine is levied against the Owner, the fine shall be considered direct damages caused by the Contractor. Further, if the Contractor exceeds his allotted time for any shutdown or bypass, and the Owner is thereby required to expend additional time and expenses to maintain compliance with plant discharge requirements or inspect the Contractor's work, the Contractor shall be solely liable for all such extra costs. The Contractor shall be responsible for the clean up of any spills caused by his operation.

- B. The above requirements shall be distributed, and be applicable, to all of the Contractor's Subcontractors working on the project site.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.01 PERMIT ACQUISITION

- A. The District shall obtain all required permits, with the exception of a City of Sausalito Encroachment Permit, and provide to the Contractor. Contractor shall be responsible for obtaining City of Sausalito Encroachment Permit for his work.

END OF SECTION 01040

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## SECTION 01060

### SAFETY AND REGULATORY REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 CONTRACTOR'S RESPONSIBILITY FOR SAFETY

- A. See General Conditions, Section 00700, Paragraph 6.11 for Safety and Protection requirements.
- B. The Contractor shall at its own cost do whatever Work is necessary for safety and be solely and completely responsible for conditions of the jobsite, including safety of all persons (including employees) and property during the Contract period. This requirement shall apply continuously and not be limited to normal working hours.

##### 1.02 FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS

- A. Safety provisions shall conform to the Federal and State Departments of Labor Occupational Safety and Health Act (OSHA), and all other applicable federal, state, county, and local laws, ordinances, codes, the requirements set forth herein, and any regulations that may be specified in other parts of these Contract Documents. Where any of these are in conflict, the more stringent requirement shall be followed. The Contractor's failure to thoroughly familiarize itself with the aforementioned safety provisions shall not relieve Contractor from compliance with the obligations and penalties set forth therein.

##### 1.03 SAFE ACCESS BY FEDERAL, STATE, AND LOCAL GOVERNMENT OFFICIALS

- A. The Contractor shall at all times provide proper facilities for safe access to the Work by authorized government officials.

##### 1.04 CONSTRUCTION SAFETY PROGRAM

- A. Refer to General Conditions, Paragraph 8.14.

##### 1.05 NOT USED

##### 1.06 CONFINED SPACES

- A. The Contractor shall perform tests for the presence of combustible or dangerous gases and shall monitor oxygen and combustible gases levels with an approved device immediately prior to a worker entering a confined space and at intervals frequent enough to ensure a safe atmosphere during the time a worker is in such a structure. A record of such tests shall be kept at the jobsite. Post a permit at the entry point and conduct all such entries in conformance with District policy.
  - 1. Sources of ignition, including smoking, are prohibited within 50 feet of any confined space including manholes, lift stations, trenches and tanks.

- a. Note: Confined spaces for the purpose of this Section shall mean the interior of storm drains, sewers, vaults, drywells, utility pipelines, tunnels, manholes, reservoirs, and any other such structure which is similarly surrounded by confining surfaces so as to limit circulation of oxygen and/or permit the accumulation of dangerous gases or vapors, and has limited access or egress.
- B. No employee shall be permitted to enter or remain within a confined space until such confined space is free of concentrations of harmful gases, and lack of oxygen, unless the employee is wearing suitable and approved respiratory equipment.
  - 1. Confined spaces that contain or that have last been used as containers of toxic gases, light oils, hydrogen sulfide, corrosives, or poisonous substances, shall, in every case, be tested by means of approved devices or chemical analysis before being entered without wearing approved respiratory equipment.
  - 2. When entering confined spaces, the Contractor's employees shall follow all applicable safety requirements, including the use of additional employees on watch outside the confined space, the use of a lever with a lifting range to a surface tripod, etc.
- C. Before any Work is performed in a suspected confined space, a detailed procedure shall be submitted to the Engineer 14 days in advance of the Work. The Contractor shall follow as a minimum the provisions of the General Industry Safety Orders, Section 5156, Title 8, California Administrative Code.

#### 1.07 MATERIAL SAFETY DATA SHEET (MSDS)

- A. Refer to General Conditions, Paragraph 8.14. Attention is directed to the provisions of General Industry Safety Orders, Section 5194, Title 8, California Administrative Code. The Contractor shall submit to the Engineer a Material Safety Data Sheet for each hazardous substance proposed to be used, ten days prior to the delivery of such material to the job site or use of such material at a manufacturing plant where the Engineer is to perform an inspection. Hazardous substance is defined as any substance included in the list (Director's List) of hazardous substances prepared by the Director, California Department of Industrial Relations, pursuant to Labor Code Section 6382.

#### 1.08 CONTRACTOR'S RESPONSIBILITY FOR ENVIRONMENTAL PROTECTION

- A. Refer to Section 01014, Protection of the Environment.
- B. Coordination: Construction equipment/vehicle refueling and maintenance operations shall be performed only in designated areas that are either paved or lined and surrounded by protective dikes to provide sufficient volume to contain any spill.
- C. A spill contingency plan shall be developed; upon detection of a spill or leak of construction material, oil, or fuels, clean up procedures shall be implemented. Adequate clean up equipment and supplies shall be kept onsite.
- D. Emission controls shall be installed on applicable construction equipment, and idling of equipment shall be minimized.
- E. Disturbed areas shall be watered whenever soil moisture conditions and weather conditions result in visible dust generation. Dirt stockpiles shall be covered. Dust producing activities shall be suspended during periods of high winds if dust control measures are unable to avoid visible dust plumes.

- F. Equipment and manpower shall be available at all times during construction for watering of disturbed soil surfaces. Materials subject to wind dispersion shall be covered, as necessary, on a daily basis during site grading and leveling operations.
- G. All construction vehicles and equipment shall be equipped with manufacturer approved muffler/baffles, as applicable.
- H. In the event paleontological specimens (fossils) are uncovered during construction activities, the Contractor shall notify the Owner. All ground disturbing Work in the immediate vicinity of the discovery shall cease until the Owner completes an evaluation of significance and significant specimens are scientifically removed for appropriate study and curation. Refer to Section 01040.

#### 1.09 STATEWIDE GENERAL CONSTRUCTION PERMIT

- A. Contractor shall apply for and meet all requirements for a Statewide General Construction Permit, including preparation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall address specific pollution prevention techniques to be implemented during construction. The SWPPP shall describe each pollution prevention techniques in detail and shall include drawings and layouts where applicable, to show locations of runoff containment structures, storage areas, etc. The SWPPP shall meet all State and Federal requirements.

### PART 2 PRODUCTS

#### 2.01 SAFETY EQUIPMENT

- A. The Contractor, as part of its safety program, shall maintain at its office or other well-known place at the jobsite, safety equipment applicable to the Work as prescribed by the governing safety authorities, all articles necessary for giving first-aid to the injured, and shall establish the procedure for the immediate removal to a hospital or a doctor's care of any person who may be injured on the jobsite.
- B. The Contractor shall do all Work necessary to protect the Owner's personnel and the general public from hazards. Barricades, lanterns, and proper signs shall be furnished in sufficient amount to safeguard the public and the Work.
- C. The performance of all Work and all completed construction, particularly with respect to ladders, platforms, structure openings, scaffolding, shoring, lagging, machinery guards and the like, shall be in accordance with the applicable governing safety authorities.
- D. During construction, the Contractor shall construct and at all times maintain satisfactory and substantial temporary chain link fencing, solid fencing, railing, barricades or steel plates, as applicable at all openings, obstructions, or other hazards in floors, roofs, and walkways. All such barriers shall have adequate warning lights as necessary, or required, for safety.
- E. 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.
- F. The Contractor shall provide workers with adequate personal protective equipment including ear protection in accordance with all applicable OSHA standards.

## 2.02 WARNING DEVICES AND BARRICADES

- A. 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.

## 2.03 HAZARDS IN PROTECTED AREAS

- A. Excavations on sites shall be marked or guarded in a manner appropriate for the hazard.

## 2.04 ACCIDENT REPORTS

- A. If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to the Owner. In addition, the Contractor must promptly report in writing to the Owner all accidents whatsoever arising out of, or in connection with, the performance of the Work whether on, or adjacent to, the site, giving full details and statements of witnesses.
- B. It shall be the responsibility of the Contractor to notify Federal and State Departments of Labor Occupational Safety and Health Act in accordance with applicable laws and regulations.
- C. See also General Conditions, Paragraph 8.14, Safety Reports.

## 2.05 FIRE PREVENTION AND PROTECTION

- A. The Contractor shall perform all Work in a fire-safe manner. The Contractor shall supply and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. The Contractor shall comply with applicable federal, local, and state fire-prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Prevention Standard for Safeguarding Building Construction Operations (NFPA No. 241) shall be followed.
- B. Sufficient number of fire extinguishers of the type and capacity required to protect the Work and ancillary facilities shall be provided in readily accessible locations.
- C. See also General Conditions, Paragraph 8.14, Fire Protection.

## 2.06 USE OF EXPLOSIVES

- A. Use of explosives is not allowed.

## 2.07 SITE SECURITY

- A. The Contractor, where necessary to safeguard the Work and equipment, shall at its cost, employ licensed, uniformed security guards, physically capable of adequately patrolling the whole of the Work, who shall be at the site of the Work at all times, except during ordinary working hours, from the beginning to the date of acceptance of the Work.



2.08 CONTRACTOR TO SAFEGUARD EXISTING UTILITIES

- A. The Contractor shall perform all Work, including excavation, dewatering, and demolition operations, in such a manner as to avoid damage to existing fire hydrants, power poles, lighting standards, and all other existing utilities, public or private.

2.09 PROTECTION OF PROPERTY

- A. All public and private property, pavement or improvement, shall be safely guarded from injury or loss in connection with this contract by the Contractor at all times. Should any facility, structure, or property be damaged during operations of the Contractor, he shall immediately notify the proper owners or authorities.
- B. The Contractor, at its own expense, shall rebuild, repair, restore, and make good, to the existing conditions, all injuries and damage resulting from its operations.

END OF SECTION 01060

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## **SECTION 01300**

### **SUBMITTALS**

#### **PART 1        GENERAL**

1.01 DESCRIPTION. This Section covers requirements for submittals and forms a part of all other Specification Sections in which submittals are specified or required. Refer to the specific Sections and Divisions of the Specifications for additional submittal requirements.

A.     Submittal Requirements Included in This Section.

1.     Shop drawings.
2.     Samples.
3.     Material lists and equipment data.
4.     Sub-Contractor Qualifications.
5.     Certificates including, but not limited to warranties, bonds, service agreements.

#### **PART 2        PRODUCTS     (Not applicable to this Section)**

#### **PART 3        EXECUTION**

3.01 SUBMITTALS-GENERAL REQUIREMENTS. The Contractor shall submit to the Owner for its review all shop drawings, samples, materials lists, equipment data, record documents, manufacturer's equipment manuals, and other submittals required by the Contract Documents and herein, or subsequently required by modifications. All such items required to be submitted for review shall be furnished by and at the expense of the Contractor, and any work affected by them shall not proceed without such review. Submittals and their contents shall be properly prepared, identified, and transmitted as provided herein or as the Owner may otherwise direct. Except for record documents, and instructional manuals for operation and maintenance, each submittal shall be approved before the material or equipment covered by the submittal is delivered to the site.

- A.     Number of Copies. Unless otherwise specified, each submittal shall include three (3) sets of black line or blue line printed copies.
- B.     Submittal Review Time. Contractor shall allow a total period of not less than four (4) weeks for review and approval of submittals, not including the time necessary for delivery or mailing, and shall cause no delay in the Work. Extension of the Contract Time will not be granted because of the Contractor's failure to make timely and correctly prepared and presented submittals with allowance for the checking and review periods.
- C.     Deviations. At the time of the submission, the Contractor shall give notice, in writing, in the submittal, of any deviation from the requirements of the Contract Documents. The deviations shall be clearly indicated or described. The Contractor shall state in writing, all variation in costs occasioned by the deviations, and any assumptions of the cost of all related changes if the deviation is approved.
- D.     Method of Submittal. The Contractor shall deliver submittals by means of dated, signed, and sequence numbered transmittals on the Owner provided forms (provided at the end of this section) identifying as to initial or resubmittal status, and fully describing the

submittal contents. In each transmittal, the Contractor shall state the Project Number and Name, Name and Address of Contractor, Name and Address of Subcontractor, Manufacturer, Distributor, and specification Section (as applicable), Articles, and paragraphs to which the submittal pertains; accompanying data sheets, catalogs, and brochures shall be identified in the same manner. Where several types or models are contained in the literature, the Contractor shall delete non-applicable portions, or specifically indicate, which portions are intended and applicable. Submittal transmittals shall fully index all items submitted.

1. Incomplete Submittals, including those not correctly transmitted, not correctly titled and identified, or not bearing the Contractor's review and approval stamp, will be returned to the Contractor without review.
  2. Interrelated Submittals. Except where the preparation of a submittal is dependent upon the approval of a prior submittal, all submittals pertaining to the Work, shall be submitted simultaneously.
- E. Contractor's Review and Approval. Every submittal of shop drawings, samples, materials lists, equipment data, instruction manuals, and other submittals upon which the proper execution of the Work is dependent, shall bear the Contractor's review and approval stamp certifying that the Contractor: 1) has reviewed, checked and approved the submittal and has coordinated the contents with the requirements of the Contract Documents, 2) has determined and verified all quantities, field measurements, field construction criteria, materials, equipment, catalog numbers, and similar data, or will do so, and 3) states the Work covered by the submittal is recommended by the Contractor and the Contractor's guarantee will fully apply thereto. Contractor's stamp shall be dated and signed by the Contractor in every case.
- F. Owner's Review. Submittals will be reviewed only for conformance with the design concept of the Project and with the information given in the Contract Documents. The review of a separate item, as such, will not indicate approval of the assembly in which the item functions, nor shall review be construed as revising, in any way, the requirements for a fully integrated and operable system, as specified. The review of submittals shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents, or for any revision in resubmittals, unless the Contractor has given notice, in writing, of the deviation or revision at the time of submission or resubmission, and written acceptance has been given to the specific deviation or revision, nor shall any review relieve the Contractor of responsibility for errors or omissions in the submittals, or for the accuracy of dimensions and quantities, the adequacy of connections, and the proper and acceptable fitting, execution, and completion of the Work.
- G. Corrections and Resubmittals. The Contractor shall make all required corrections and shall resubmit the required number of corrected submittals until approved by the Owner. The Contractor shall direct specific attention, in writing, to revisions other than the corrections called for on previous submittals, and shall state, in writing, all variations in costs, and his assumption of the cost of related changes the same as is required for deviations in 3.01B. Identify each resubmittal with number of the original submittal, followed by consecutive letters starting with "A" for first resubmittal, "B" for second resubmittal, etc. Note that in addition to any applicable liquidated damages, the Owner

reserves the right to deduct monies from the amounts due to Contractor to cover the cost of Owner's review time beyond the second submission.

- H. Check of Returned Submittals. The Contractor shall check submittals returned to him for correction and ascertain if the corrections result in extra cost to him above that included under the Contract Documents, and shall give written notice to the Owner within five (5) days, if in his opinion, such extra cost results from corrections. By failing to notify the Owner or by starting any Work covered by a submittal, the Contractor waives all claims for extra costs resulting from required corrections.
- I. Conformance. No Work represented by required submittals shall be purchased, or paid for, or commenced until the applicable submittal has been approved. Work shall conform to the approved submittals and all other requirements of the Contract Documents, unless subsequently revised by an appropriate modification, in which case, the Contractor shall prepare and submit revised submittals as may be required. The Contractor shall not proceed with any related Work which may be affected by the Work covered under submittals until the applicable submittals have been approved.
- J. Piecemeal Submittals. Piecemeal submittals will be returned unreviewed. However, for mechanical equipment and the like, separate submittals for embedded items, embedded metal work and anchors, will be reviewed, as applicable.

3.02 SHOP DRAWINGS. Each submittal shall be complete with respect to dimensions, design criteria, materials, connections, bases, foundations, anchors, and the like, and shall be accompanied by technical and performance data, as necessary, to fully illustrate conformance with the Contract Documents. Unless otherwise specified, each submittal shall include three (3) sets of black line or blue line printed copies. The printed copies shall be submitted folded to 8-1/2 inches x 11 inches in size. For catalog cuts and the like, which are 8-1/2 inch x 11 inch format, provide no less than three (3) copies which will be retained by the Owner.

- A. Title Block and Identification. On each shop drawing, provide a space for the Owner's approval or correction stamp, and a title block showing the following:

- 1. Names and addresses of Contractor, sub-Contractor, manufacturer, distributor, as applicable
- 2. Name and address of Owner
- 3. Date, scale of drawings, and identification number
- 4. Contractor's review and approval stamp
- 5. Owner's number
- 6. Plan Reference and Specification Section reference
- 7. Project Name

- B. Preparation and Size. Details and information shall be clearly drawn, dimensioned, noted, and cross referenced. Unless otherwise approved, prepare shop drawings on 22 X 34, or 11 X 17, or 8-1/2 inch x 11 inch sheets, as applicable.

- C. Information Required. Shop drawings shall contain details and information fully developing the pertaining Contract Document requirements and such other information as may be specified or required for approval, including, but not limited to:
1. Related work with cross references to applicable portions of the Contract Documents.
  2. Dimensions, including variations between indicated dimensions and actual conditions.
  3. Physical configurations with critical dimensions for clearance, access and servicing.
4. List of materials, including fasteners and connectors, as applicable.
5. Grouting work, including grouting space and material.
6. Anchoring details showing anchor bolt type and class, sizes, embedments, projections, and locations measured with respect to permanent structural features. An anchor bolt template shall be shown on the Shop Drawings and shall be furnished unless waived in writing by the Owner.
  7. Protective coatings and factory finishes fully described as to materials, number of coats, plated and metallic coating finishes, treatments, and similar information, all based on specified requirements. The term "as specified" is not acceptable for this purpose.
  8. Machinery and equipment details. Standard catalog items need not be illustrated in detail, but indicate and detail sizes, supports, and connections.
- E. Details and Connections. Satisfactorily detail all connections required to complete the Work, including details necessary to make indicated or specified additions to existing work or to provide connections for future work. Design connections and parts of strength to withstand, without adverse deflection or stress, all loads or pressures to which they may be subjected and to develop the strength of the members or parts connected. In no case shall the connections, parts, or details be inferior to those required by the Contract Documents.
- F. Related Work. Except as provided in 3.02G., the term "by others" is not acceptable for the description of related work shown in the shop drawings. Clearly note by name or description the Contractor, Subcontractor, or trade to provide such related Work; where such name or description is missing, it shall be understood and agreed that the Contractor is to furnish and install such related Work.
- G. Work by Construction Phase Contractor. Work understood to be performed by the Owner's construction phase Contractor shall be clearly called out as such by the Contractor, in the Contractor's submittal(s).

- H. Composite Shop Drawings with Installation Layouts. Prepare and submit such drawings, wherever specified or required. Owner reserves the right to determine when composite drawings are required showing dimensional plans and elevations of the materials or equipment in the involved, and include complete information as to arrangements, locations, clearances, avoidance of interferences, access, sizes, supports, connections, services, assembly, disassembly, and installation. Composite shop drawings and layouts shall be coordinated in the field by the Contractor and his Subcontractors for proper relationship based on field conditions, and shall be checked and approved by them before submittal. Contractor shall have competent technical personnel readily available for such coordinating and checking.
- 3.03 INSTALLATION INSTRUCTIONS. The Contractor shall submit two copies of manufacturers' installation instructions for material and equipment incorporated in the Work to the extent specified in other Sections and Divisions of the Specifications or requested by the Owner for its review. Installation instructions will be reviewed for general adequacy only. After review, the SUPPLIER shall distribute copies to all those involved with the instructions.
- 3.04 OTHER SUBMITTALS. Provide no less than four (4) copies of other submittals such as calculations, manufacturer's certified reports, operational demonstration and system validation reports specified elsewhere in the Contract Documents, three (3) of which will be retained by the Owner and the rest of which will be returned to the Contractor marked to show the required corrections.
- 3.05 FORM OF REVIEW.
- A. Copies of submittals which are returned to the Contractor and which are subject to review will be marked with notations (1), (2), (3) or (4).
1. No Exceptions Taken.
  2. Make Corrections Noted
  3. Amend and Resubmit.
  4. Rejected - Resubmit.
- B. Returned copies of drawings marked with either notation (1) or (2) authorize Contractor to proceed with the fabrication, or construction, or any combination thereof, covered by such returned drawings, provided, that such fabrication, or construction shall be subject to the comments, if any, shown on such returned copies
- C. Returned copies of drawings marked with notation (3) or (4) shall be corrected as necessary and revised drawings shall be submitted in the same manner as before.
- D. Returned copies of drawings marked with either notation (3) or (4) shall be resubmitted not later than seven (7) days after date of transmittal by Owner.

### 3.06 MANUALS FOR EQUIPMENT AND SYSTEMS

- A. Provide an operation and maintenance manual for each item of equipment or system as specified in the individual Specification sections. Provide four (4) copies of/for each item for initial submittals; four (4) copies each item for final submittals. For the final submittal, also include an electronic file using PDF format, bookmarked for each equipment item included. Owner shall retain two (2) copies of initial submittal.
- B. Assemble operation and maintenance manuals into one set for entire Project prior to final Application for Payment.
- C. Content for each unit (or common units) and system, as appropriate, complete including Controls, Accessories, and Appurtenances:

#### 1. Description of Unit and Component Parts:

- a. Function, normal operating characteristics, and limiting conditions.
- b. Performance curves, engineering data, nameplate data, and tests.
- c. Complete nomenclature and commercial number of replaceable parts.
- d. Cost of equipment and components.

#### 2. Operating Procedures:

- a. Startup, break-in, routine, and normal operating instructions.
- b. Test procedures and results of factory tests, where required.
- c. Regulation, control, stopping, and emergency instructions.
- d. Shutdown instructions for both short and extended durations.
- e. Summer and winter operating instructions, as applicable.
- f. Safety precautions.
- g. Special operating instructions.
- h. Installation instructions.

#### 3. Maintenance and Overhaul Procedures:

- a. Routine operations.
- b. Guide to troubleshooting.
- c. Disassembly, removal, repair, reinstallation, and reassembly.

#### 4. Installation Instructions: Including alignment, adjusting, calibrating, and checking.

#### 5. Original manufacturer's parts list, illustrations, detailed assembly drawings showing each part with part numbers and sequentially numbered parts list, and diagrams required for maintenance.

- a. Preventive maintenance and overhaul instructions.
- b. Predicted life of parts subject to wear.



- c. Items recommended to be stocked as spare parts and ordering instructions.
    - d. Identify installed spares and other provisions for future work (e.g., reserved panel space, unused components, wiring, terminals).
  - 6. Grease/Oil Points: Instructions and diagrams.
  - 7. Manufacturer's printed operating and maintenance instructions.
  - 8. Description of operation sequence by control manufacturer.
  - 9. List of electrical relay settings, and control and alarm contact settings.
  - 10. Electrical interconnection wiring diagram, including control and lighting systems.
  - 11. As-installed control diagrams by control manufacturer.
  - 12. Results of field functional and performance tests, as required.
  - 13. Contractor's coordination drawings and as-installed, color-coded, piping diagrams.
  - 14. Original manufacturer's recommended spare parts list, manufacturer's current prices, and recommended quantities to be maintained in storage.
  - 15. Other data as required under individual Specification sections.
- D. Content for each Electric or Electronic Item or System, as appropriate:
- 1. Description of Unit and Component Parts:
    - a. Function, normal operating characteristics, and limiting conditions.
    - b. Performance curves, engineering data, nameplate data, and tests.
    - c. Complete nomenclature and commercial number of replaceable parts.
    - d. Interconnection wiring diagrams, including all control and lighting systems.
  - 2. Circuit Directories of Panelboards:
    - a. Electrical service.
    - b. Controls.
    - c. Communications.
  - 3. As-installed, color-coded, wiring diagrams.

4. Operating Procedures:

- a. Routine and normal operating instructions.
- b. Sequences required.
- c. Safety precautions.
- d. Special operating instructions.

5. Maintenance Procedures:

- a. Routine operations.
- b. Guide to troubleshooting.
- c. Adjustment and checking.
- d. List of relay settings, control and alarm contact settings.

6. Manufacturer's printed operating and maintenance instructions.

- 7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
- 8. Cost of equipment and components.
- 9. Estimated life expectancy of equipment and components.
- 10. Other data as required under pertinent sections of the Specifications.

E. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.

F. Additional Requirements for O&M Data: See individual Specification sections.

3.07 REVISION OF SUBMITTALS. Whenever a Modification causes a change to the information contained in previously approved submittals, the SUPPLIER shall submit information and data corresponding to the changed requirements for approval. Revision submittals shall be submitted following the procedures required for previously approved submittals.

END OF SECTION 01300

\* \* \* \* \*

TRANSMITTAL

Submittal Description: \_\_\_\_\_ Submittal No: \_\_\_\_\_

Spec Section: \_\_\_\_\_

	Routing	Sent	Received
OWNER: SAUSALITO MARIN CITY SANITARY DISTRICT	Contractor/CM		
PROJECT:	CM/Engineer		
	Engineer/CM		
CONTRACTOR:	CM/Contractor		

We are sending you ☐ Attached ☐ Under separate cover via \_\_\_\_\_.  
☐ Submittals for review and comment  
☐ Product data for information only

Remarks: \_\_\_\_\_

Item	Copies	Date	Section No.	Description	Review action <sup>a</sup>	Reviewer initials	Review comments attached

<sup>a</sup> **Note: NE = No exceptions noted; MCN = Make corrections noted; A&R = Amend and resubmit; R = Rejected**

Attach additional sheets if necessary.

Contractor

Certify either A or B:

- ☐ A. We have verified that the material or equipment contained in this submittal meets all the requirements, including coordination with all related work, specified (no exceptions).
- ☐ B. We have verified that the material or equipment contained in this submittal meets all the requirements specified except for the attached deviations.

No.

1.1 Deviation

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

Certified by: \_\_\_\_\_

Contractor's Signature

Corrections or comments made relative to submittals during this review do not relieve the Contractor from compliance with the requirements of the drawings and specifications. This submittal is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating his work with that of other trades, and performing the work in a safe and satisfactory manner.

For SMCS: \_\_\_\_\_

Construction Manager

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## **SECTION 01301**

### **SCHEDULE OF VALUES**

#### **PART 1 GENERAL**

##### **1.01 GENERAL**

- A. This Section defines the process whereby the Schedule of Values (lump sum price breakdown) shall be developed and utilized by the Contractor for preparation of Contractor's Progress Payment Requests.
- B. All price breakdown items shall include all manpower, equipment and material costs such that the total of all items equals the Contract Bid Price.
- C. The Contractor shall install all equipment and appurtenances required to construct the complete system as specified and shown in order to receive payment of the full lump sum contract price upon project completion.

##### **1.02 SCHEDULE OF VALUES**

- A. Contractor shall submit a Schedule of Values for the major components of the WORK at the Preconstruction Conference in accordance with Section 01010. Overhead and profit shall not be shown as a separate item; and, each line item shall include pro-rated amounts for the Contractor's costs, overhead, profit, temporary facilities and other expenses in connection with the item of work. The total of all items listed in the schedule shall be equal to the Contract Sum. For each line item which has an installed value of \$10,000.00 or more, break down the item and list the values of major products or operations. The listing shall include, at a minimum, the proposed value for the following major WORK components; schedule separate line item cost for:
  - 1. Mobilization and Demobilization. Provide a lump sum price for each. Maximum value not to exceed two and one-half percent (2.5%) of total contract price for each, to be paid on completion of each.
  - 2. Each trade or class of work. As a minimum, use the Table of Contents of these Specifications, all Sections in Division 2 through 16, as format.
- B. 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, these are necessary to establish fair and reasonable allocation of values for the major WORK components. Front end loading will not be permitted. The Owner may require reallocation of major WORK components from items in the above listing if in the opinion of the Owner such reallocation is necessary. This review and any necessary revisions shall be completed within ten (10) days from the date of the Notice of Proceed.

1.03 CHANGES TO SCHEDULE OF VALUES

- A. In the event that the Contractor and Owner agree to make adjustments to the original Schedule of Values because of inequities discovered in the original accepted detailed Schedule of Values, increases and equal decreases to values for activities may be made.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION 01301

\* \* \* \* \*

## SECTION 01310

### PROGRESS SCHEDULES

#### PART 1 GENERAL

##### 1.01 SUBMITTALS

- A. Submit with Each Progress Schedule Submission:
  - 1. Contractor's certification that progress schedule submission is the actual schedule being utilized for execution of the Work and certification by all Subcontractors with 5 percent or more of Work that they concur with Contractor's progress schedule submission.
  - 2. Four legible copies of the progress schedule.
  - 3. One electronic copy of the progress schedule. See Paragraph 1.03 for format.
- B. Preliminary Progress Schedule: Submit within 15 days of the Notice to Proceed and as specified in the General Conditions.
- C. Initially Acceptable Progress Schedule: As provided in the General Conditions.
- D. Acceptable Progress Schedule: Submit adjusted schedule or confirm validity of current acceptable schedule with each monthly Application for Payment in accordance with Paragraph 9.2 of the General Conditions, and at such other times as necessary to reflect: i) progress of Work to within 5 working days prior to submission; ii) changes in Work scope and activities modified since submission; iii) delays in Submittals or resubmittals, deliveries, or Work; iv) adjusted or modified sequences of Work; v) other identifiable changes; and vi) revised projections of progress and completion.
- E. Narrative Progress Report: Submit with each monthly submission of progress schedule.
- F. Precedent to final payment, provide four copies of any Critical Path Method (CPM) type schedule utilized with certification that said schedule represents correctly the way the Work was performed.
- G. Progress quantity chart.

##### 1.02 PROGRESS OF THE WORK

- A. If Contractor fails to complete activity by its latest scheduled completion date and this failure may extend Contract Times (or Milestones), Contractor shall, within 7 days of such failure, submit a written statement as to how Contractor intends to correct nonperformance and return to the acceptable current progress schedule. Actions by Contractor to complete Work within Contract Times (or Milestones) will not be justification for adjustment to Contract Price or Contract Times.
- B. Owner may order Contractor to increase plant, equipment, labor force, or working hours if Contractor fails to: i) complete a critical scheduled activity by its latest Milestone completion

date; or ii) satisfactorily execute Work as necessary to prevent delay to the overall completion of the Project.

### 1.03 PROGRESS SCHEDULE REQUIREMENTS

#### A. General:

1. Schedule(s) shall reflect Work logic sequences, restraints, delivery windows, review times, Contract Times, and Milestones set forth in the Agreement and Section 01040, Coordination, and shall begin with the date of Notice to Proceed and conclude with the date of Final Completion.
2. The schedule requirement herein is the minimum required. Contractor may prepare a more sophisticated schedule if such will aid Contractor in execution and timely completion of Work.
3. Base schedule on standard 5-day Work week.
4. When bar chart or network analysis schedules are specified, use Microsoft Project latest version or a compatible and approved software.
5. Adjust or confirm on a monthly basis.
6. Use of float suppression techniques such as preferential sequencing or logic, special lead/lag logic restraints, and extended activity times are prohibited, and use of float time disclosed or implied by use of alternate float-suppression techniques shall be shared to proportionate benefit of Owner and Contractor.
7. Pursuant to above float-sharing requirement, no time extensions will be granted nor delay damages paid until a delay occurs which: i) impacts Project's critical path; ii) consumes available float or contingency time; and iii) extends Work beyond contract completion date.
8. If Contractor provides an accepted schedule with an early completion date, Owner reserves the right to reduce the duration of the Work to match the early completion date by issuing a deductive Change Order at no change in Contract Price.

#### B. Network Analysis Diagram: Provide a comprehensive computer-generated schedule using CPM, generally as outlined in Associated General Contractors of America (AGC) publication "The Use of CPM in Construction – A Manual for General Contractors and the Construction Industry," latest edition, prepared on reproducible paper, not larger than 30 inches by 42 inches.

1. Show complete interdependence and sequence of construction and Project related activities reasonably required to complete the Work, identifying Work of separate stages and other logically grouped activities, and clearly identify critical path of activities.
2. Include at a Minimum: Subcontract Work; major and other equipment and critical product design, fabrication, testing, delivery and installation times including required lead time for Owner-furnished products; move-in and other preliminary activities; Project closeout and cleanup; Substantial Completion dates; Submittals that may impact critical path; and system/subsystem/component testing, facility startup, and training activities that may impact critical path.
3. Provide sub schedules to further define critical portions of the Work, i.e., Process Instrumentation and Control System/Subsystems.



4. Indicate dates for early-and late-start, early-and late-finish, float, and duration.
5. No activity duration, exclusive of those for Submittals review and product fabrication/delivery, shall be less than 1 day nor more than 15 working days, unless otherwise approved by Engineer.
6. Activity duration for Submittals review shall not be less than review time specified unless clearly identified and prior written acceptance has been obtained from Engineer.
7. Monthly Schedule Submissions: Include overall percent complete, projected and actual, and percent completion progress for each listed activity.
8. Prepare a schedule report listing information for each activity in network diagram in tabular format, and sorted according to:
  - a. Early-start, within responsibility.
  - b. Early-start.
  - c. Activity number sequence.
  - d. Activity number sequence with predecessor and successor activity.

C. Disposition of Progress Schedules: In accordance with Section 01300, Submittals.

#### 1.04 NARRATIVE PROGRESS REPORT REQUIREMENTS

A. Include, as a minimum:

1. Summary of Work, completed during the past period between Narrative Progress Reports.
2. Work planned during the next period.
3. Explanation of differences between summary of Work completed and Work planned in previously submitted Narrative Progress Report.
4. Current and anticipated delaying factors and their estimated impact on other activities and completion Milestones.
5. Corrective action taken or proposed.

#### 1.05 CLAIMS FOR ADJUSTMENT OF CONTRACT TIMES

A. Reference the General Conditions.

B. Where Engineer has not yet rendered formal decision on Contractor's claim for adjustment of Contract Times, and parties are unable to agree as to amount of adjustment to be reflected in progress schedule, Contractor shall reflect that amount of time adjustment in progress schedule as Engineer may accept as appropriate for the interim. It is understood and agreed that such interim acceptance by Engineer will not be binding and will be made only for purpose of continuing to schedule Work, until such time as formal decision as to an adjustment, if any, of the Contract Times acceptable to Engineer has been rendered. Contractor shall revise progress schedule prepared thereafter in accordance with Engineer's formal decision.

PART 2        PRODUCTS    (Not Used)

PART 3        EXECUTION   (Not Used)

END OF SECTION 13010

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## **SECTION 01400**

### **QUALITY CONTROL**

#### **PART 1        GENERAL**

##### **1.01    INSPECTION AND TESTING**

- A.        Additional requirements for tests are described in Section 01650, Facility Startup, and other Technical Paragraphs of these Specifications.

##### **1.02    GENERAL**

- A.        Where the Contract Documents require work to be field 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.
- B.        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.
- C.        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.
- D.        Upon completion of the Work the Construction Manager will conduct a final inspection as provided for in Section 10.2 of the General Conditions, Final Inspection and Payment.

Sausalito-Marín City Sanitary District  
Quality Control

Records shall be available at all reasonable hours for inspection by other local or State agencies to ascertain compliance with laws and regulations.

#### 1.03 NOTICE

- A. 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.
- B. 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.
- C. 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 re-inspection at the site of the Work.

#### 1.04 COSTS OF TESTING

- A. 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.
- B. 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. The District will perform the soils compaction and concrete confirmation tests detailed in the Technical Specifications during the performance of the Work.
- C. 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 an unilateral Change Order to deduct these costs from the Contract price.

#### 1.05 WORK COVERED PRIOR TO INSPECTION AND/OR TESTING

- A. 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.

1.06 WORK COVERED WITH PRIOR INSPECTION AND/OR TESTING

- A. If the Construction Manager considers it necessary or advisable that covered work which was favorably inspected and tested be uncovered for re-inspection 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.

END OF SECTION 01400

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## SECTION 01500

### CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

#### PART 1 GENERAL

##### 1.01 SUBMITTALS

- A. Meet requirements of Section 01300, SUBMITTALS, as applicable. Make Submittals required below before starting Work at the site or in accordance with accepted schedule of Submittals submissions.
- B. Administrative Submittals: Copies of permits and approvals for construction as required by Laws and Regulations and governing agencies.

##### 1.02 MOBILIZATION

- A. Reference the General Conditions.
  - B. Mobilization shall include, but not be limited to, these principal items:
    - 1. Obtaining required permits.
    - 2. Moving CONTRACTOR's plant and equipment required for first month operations onto site.
    - 3. Installing temporary construction power, wiring, and lighting facilities.
    - 4. Providing onsite communication facilities, including telephones.
    - 5. Providing onsite sanitary facilities and potable water facilities as specified and as required by Laws and Regulations, and governing agencies.
    - 6. Arranging for and erection of CONTRACTOR's work and storage yard.
    - 7. Posting OSHA required notices and establishing safety programs and procedures.
    - 8. Having CONTRACTOR's superintendent at the site full time.
    - 9. Submitting of initially acceptable schedules as required in the General Conditions.
  - C. Payment for Mobilization. The CONTRACTOR's attention is directed to the condition that 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.
- ##### 1.03 CONTRACTOR ACCESS, STAGING/LAYDOWN AREA, USE OF PREMISES
- A. Not Used.
  - B. Lands furnished by OWNER upon which CONTRACTOR shall perform the Work are as shown on the Drawings.



- C. Unless otherwise provided, specific location(s) and available area(s) for CONTRACTOR's staging/laydown, and site access, shall be as directed or finalized at the preconstruction meeting.
- D. CONTRACTOR's employees shall park their vehicles in the designated staging area. Vehicles outside of the staging area shall be limited to those necessary for transportation of equipment and shall be clearly marked with the company name.
- E. CONTRACTOR's employees shall not use OWNER's facilities including, but not limited to, buildings, restrooms/showers, or landscaped areas for break or lunch times. CONTRACTOR's employees shall be responsible for cleaning up any litter from break or lunch times.
- F. Should CONTRACTOR use a dual-gate system required for use of nonunion personnel, CONTRACTOR shall bear all costs of providing and maintaining the dual-gate system. Such costs shall include costs for gates, signs at all gates as required by OWNER, fencing or other barriers acceptable to OWNER for segregating union and nonunion staging areas, and other items.

1.04 PERMITS. Permits, Licenses, or Approvals: Obtain in accordance with Paragraph 6.06 of the General Conditions.

#### 1.05 PROTECTION OF WORK AND PROPERTY

- A. Not used.
- B. Comply with OWNER's safety rules.
- C. Keep OWNER informed of serious accidents on the site and related claims.
- D. Use of Explosives: No blasting or use of explosives will be allowed on the site.
- E. During the performance of the Work, CONTRACTOR is responsible for adapting its means, methods, techniques, sequences, and procedures of construction to allow OWNER to maintain operation as described in Section 01030, SPECIAL PROJECT CONSTRAINTS, at the existing level of facility production and consistent with applicable permit requirements, and Laws and Regulations. In performing such Work and in cooperating with OWNER to maintain operations, it may be necessary for CONTRACTOR to plan, design, and provide various temporary services, utilities, connections, temporary piping and heating, access, and similar items that will be included within the Contract Price.

### PART 2 PRODUCTS

2.01 OWNER'S TRAILER. A trailer for use as the OWNER's field office will NOT be required.

#### 2.02 CONTRACTOR FIELD OFFICE

- A. It is optional that the CONTRACTOR shall install a project field office at the WORK site. The CONTRACTOR shall provide and pay for all temporary utilities including water, sanitary connection, telephone and electric power services for its field office. The CONTRACTOR is responsible for all costs associated with obtaining and maintaining temporary utilities.

### PART 3 EXECUTION

3.01 OWNER'S FIELD OFFICE. Not required.

### 3.02 TEMPORARY UTILITIES

#### A. Power:

1. Electric power is available at the site from the OWNER.
2. Electrical appurtenances required for providing temporary electric power services for the CONTRACTOR shall be provided by the CONTRACTOR and approved by the OWNER.
3. If the CONTRACTOR damages any of the Owner's electrical components, the Contractor shall be responsible for repairing the damage to the satisfaction of the Owner.
4. The CONTRACTOR shall provide its own diesel or gasoline engine driven air compressor system when required for its pneumatic tools or equipment if any.

#### B. Lighting: Provide temporary lighting at least to meet all applicable safety requirements to allow erection, application or installation of materials and equipment, and observation or inspection of the Work. Cost of temporary lighting required for performing the Work will be borne by the CONTRACTOR.

#### C. Heating, Cooling, and Ventilating:

1. Provide as required to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation of materials, and to protect materials, equipment, and finishes from damage due to temperature or humidity.
2. Provide adequate forced air ventilation of enclosed areas to cure installed materials, to dispense humidity, and to prevent hazardous accumulations of dust, fumes, vapors, or gases.
3. Pay all costs of installation, maintenance, operation, removal, and fuel consumed.
4. Provide portable unit heaters, complete with controls, oil- or gas-fired, and suitably vented to outside as required for protection of health and property.
5. If permanent natural gas piping is used for temporary heating units, do not modify or reroute gas piping without approval of OWNER. Provide separate gas metering as required by OWNER.

#### D. Water:

1. CONTRACTOR may use water from the OWNER'S water system only related to the WORK to be performed by the CONTRACTOR. The CONTRACTOR shall provide temporary connections, piping and valving to the OWNER'S water system at CONTRACTOR's expense. The CONTRACTOR shall not make connection to any water system without first obtaining permission from the OWNER.
2. CONTRACTOR will provide temporary facilities and piping required to bring water to the point of use, and remove them when no longer needed.

3. CONTRACTOR will provide water required for testing equipment, manholes or vaults, and piping prior to Substantial Completion, unless otherwise specifically stated in the Specifications for the equipment, systems, or facilities to be tested.
  4. Recycled water is available at site for use. CONTRACTOR facilities, receiving and using recycled water shall be marked appropriately, i.e. "Recycled Water Do Not Drink."
- E. Sanitary and Personnel Facilities:
1. Provide and maintain facilities for CONTRACTOR's employees, Subcontractors, and all other onsite employer's employees. Service, clean, and maintain facilities and enclosures.
  2. Use of OWNER's existing sanitary facilities by CONTRACTOR's personnel will not be allowed.
- F. Communication:
1. The CONTRACTOR shall make arrangements to obtain and pay for its own communication equipment such as telephone, cellular phone, and facsimile equipment.
  2. Arrange and provide onsite telephone service for CONTRACTOR's use during construction. CONTRACTOR to pay all costs of installation and monthly bills.
  3. No incoming telephone calls shall be allowed to OWNER's plant telephone system.
- G. Fire Protection: Furnish and maintain on the site adequate firefighting equipment capable of extinguishing incipient fires. Comply with applicable parts of the National Fire Prevention Standard for Safeguarding Building Construction Operations (NFPA No. 241).

### 3.03 PROTECTION OF WORK AND PROPERTY

- A. General:
1. Not Used.
  2. Perform Work within rights-of-way and easements in a systematic manner that minimizes inconvenience to property owners and the public.
  3. No primary access road shall be cut off from vehicular traffic for a period exceeding four (4) hours unless special arrangements have been made. Constraints to complete work in the Plant Access Road are specified in Section 01030.
  4. Maintain in continuous service all existing pipelines, cables, storm drains, process drains, sewers, poles and overhead power, and all other utilities encountered along the line of Work, unless other satisfactory arrangements have been made.
  5. Where completion of Work requires temporary or permanent removal and/or relocation of an existing utility, coordinate all activities with owner of said utility and perform all work to their satisfaction.
  6. Protect, shore, brace, support, and maintain underground pipes, conduits, drains, and other underground utility construction uncovered or otherwise affected by construction operations.

7. Keep fire hydrants and water control valves free from obstruction and available for use at all times.
8. In areas where CONTRACTOR's operations are adjacent to or near pipelines, cables, storm drains, sewers, process drains, and such operations may cause damage or inconvenience, suspend operations until arrangements necessary for protection thereof have been made by CONTRACTOR.
9. Notify all affected parties other than OWNER, which may be affected by any construction operations, five (5) days in advance. Thereafter, provide written notice at least two (2) days in advance.
10. Do not impair operation of existing sewer systems. Prevent construction material, pavement, concrete, earth, volatile and corrosive wastes, and other debris from entering sewers, pump stations, or other sewer structures. Maintain original site drainage wherever possible.

B. Site Security:

1. Security Fence: Provide and maintain additional temporary security fences as necessary to protect the Work and CONTRACTOR's equipment, stored material, etc.

C. Barricades and Lights:

1. Provide as necessary to prevent unauthorized entry to construction areas and affected roads, streets, and alleyways, inside and outside of fenced area, and as required to ensure public safety and the safety of OWNER's, CONTRACTOR's employees, other employer's employees, and others who may be affected by the Work.
2. Provide to protect existing facilities and adjacent properties from potential damage.
3. Locate to enable access by facility operators and property owners.

D. Signs and Equipment:

1. Conform to requirements of Caltrans Standard Specifications.
2. Barricades: Provide in sufficient quantity to safeguard public and Work.
3. Traffic Cones: Provide to delineate traffic lanes to guide and separate traffic movements.
4. Provide at obstructions, such as material piles and equipment.
5. Illuminate barricades and obstructions with warning lights from sunset to sunrise.
6. Use to alert general public of construction hazards, which would include surface irregularities, unramped walkways, grade changes, and trenches or excavations in roadways and in other public access areas.
7. No Parking signs shall be posted at least forty-eight (48) hours prior to start of Work in affected area. No Parking signs shall be posted on barricades and not on existing trees or poles.

- E. Existing Structures: Where CONTRACTOR contemplates removal of small structures such as signposts and culverts that interfere with CONTRACTOR's operations, obtain OWNER's prior approval. Replace those removed in a condition equal to or better than original.
- F. Finished Construction: Protect finished floors and concrete floors exposed as well as those covered with composition tile or other applied surfacing.
- G. Waterways: Keep ditches, culverts, existing swales, and natural drainages continuously free of construction materials and debris.
- H. Dewatering: Construct, maintain, and operate channels, flume drains, sumps, pumps, or other temporary diversion and protection works. Furnish materials required, install, maintain, and operate necessary pumping and other equipment for the environmentally safe removal and disposal of water from the various parts of the Work. Maintain the foundations and parts of the Work free from water.

### 3.04 TEMPORARY CONTROLS

- A. Water Pollution Control:
  - 1. Prior to commencing excavation and construction, obtain OWNER's agreement with detailed plans showing procedures intended to handle and dispose of sewage, groundwater, and stormwater flow, including dewatering pump discharges.
  - 2. Do not dispose of volatile wastes such as mineral spirits, oil, chemicals, or paint thinner in storm drains or sanitary sewers. Disposal of wastes into streams or waterways is prohibited. Provide acceptable containers for collection and disposal of waste materials, debris, and rubbish.
- B. Erosion, Sediment, Runoff, and Flood Control:
  - 1. Provide, maintain, and operate temporary facilities to control erosion and sediment releases, prevent runoff of recycled water, and to protect Work and existing facilities from flooding during construction period.
  - 2. Obtain and comply with the General NPDES Permit for Storm Water Discharges associated with Construction Activity.

### 3.05 STAGING AREA

- A. The CONTRACTOR's staging area shall be coordinated with the Owner.
- B. Temporary Storage Area: Construct temporary storage area for storage of products that are not subject to damage by weather conditions.
- C. Temporary Storage Buildings:
  - 1. Provide environmental control systems that meet recommendations of manufacturers of equipment and materials stored.
  - 2. Arrange or partition to provide security of contents and ready access for inspection and inventory.

3. Store combustible materials (paints, solvents, fuels, etc.) in a well-ventilated and remote building meeting safety standards.

#### 3.06 ACCESS ROADS AND DETOURS

- A. No road detours are anticipated for the Work.
- B. Maintain drainage ways.
- C. Where required, or as directed by OWNER's Representative, provide gravel, crushed rock, or other stabilization material to permit access by all motor vehicles at all times.
- D. Maintain road grade and crown to eliminate potholes, rutting, and other irregularities that restrict access.
- E. Where construction affects existing fences, install and maintain gates. Temporary fencing will be adequate to perform the function of the permanent fencing it will replace on a short term basis. Refer also to any permit requirements in Section 01040, COORDINATION.
- F. Upon completion of construction, leave roads and fences in same or better condition as prior to start of construction activities, and suitable for future use by OWNER.

#### 3.07 PARKING AREAS

- A. Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, OWNER's operations, or construction operations.
- B. Provide parking facilities for personnel working on the Project in CONTRACTOR's staging area. No employee or equipment parking will be permitted on OWNER's existing paved areas.

#### 3.08 CLEANING DURING CONSTRUCTION

- A. General:
  1. In accordance with the General Conditions, as may be specified in specific Specification sections, and as required herein.
  2. Wet down exterior surfaces prior to sweeping to prevent blowing of dust and debris.
  3. Provide approved containers for collection and disposal of waste materials, debris, and rubbish. At least at weekly intervals, dispose of such waste materials, debris, and rubbish offsite.
  4. At least weekly, brush sweep the entry drive and roadways, and all other streets and walkways affected by Work and where adjacent to Work.

#### 3.09 REMOVAL OF TEMPORARY FACILITIES AND UTILITIES

- A. At such time or times any temporary construction facilities and utilities are no longer required for the Work, CONTRACTOR shall notify OWNER of his intent and schedule for removal of the temporary facilities and utilities, and obtain OWNER's approval before removing the same. As approved, CONTRACTOR shall remove the temporary facilities and utilities from the site as his

property and leave the site in such condition as specified, as directed by OWNER, and/or as shown on the Drawings.

- B. After completion of the project, all temporary utility services shall be disconnected or removed and all affected improvements shall be restored to their original condition by the CONTRACTOR at no cost to the OWNER.
- C. The condition of the site shall be left in a condition that will restore original drainage, evenly graded, seeded or planted as necessary, and left with an appearance equal to, or better than original.

END OF SECTION 01500

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SECTION 01600  
DELIVERY, STORAGE AND HANDLING

PART 1            GENERAL  
1.01        SCOPE OF WORK

- A. This Section specifies the general requirements for the delivery handling, storage and protection for all items required in the construction of the work. Specific requirements, if any, are specified with the related item.

1.02        TRANSPORTATION AND DELIVERY

- A. Transport and handle items in accordance with manufacturer's instructions.
- B. Schedule delivery to reduce long term on-site storage prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the Owner's Representative.
- C. Coordinate delivery with installation to ensure minimum holding time for items that are hazardous, flammable, easily damaged or sensitive to deterioration.
- D. Deliver products to the site in manufacturer's original sealed containers or other packing systems, complete with instructions for handling, storing, unpacking, protecting and installing.
- E. All items delivered to the site shall be unloaded and placed in a manner which will not hamper the Contractor's normal construction operation or those of subcontractors and other contractors and will not interfere with the flow of necessary traffic.
- F. Provide necessary equipment and personnel to unload all items delivered to the site.
- G. Promptly inspect shipment to assure that products comply with requirements, quantities are correct and items are undamaged. For items furnished by others (i.e. Owner, other Contractors), perform inspection in the presence of the Owner's Representative. Notify Owner's Representative verbally, and in writing, of any problems.

1.03        STORAGE AND PROTECTION

- A. Store and protect products in accordance with the manufacturer's instructions, with seals and labels intact and legible. Storage instruction shall be studied by the Contractor and reviewed with the Owner's Representative by him/her. Instruction shall be carefully followed and a written record of this kept by the Contractor. Arrange storage to permit access for inspection.
- B. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- C. Cement and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All structural, miscellaneous and reinforcing steel shall be stored off the ground or otherwise to prevent accumulations of dirt or grease and in a position to prevent accumulations of standing water and to minimize rusting. Beams shall be stored with the webs vertical. Precast concrete shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping or cracking. Brick, block and similar masonry products shall be handled and stored in a manner to reduce breakage, cracking and spalling to a minimum.



- D. All mechanical and electrical equipment and instruments subject to corrosive damage by the atmosphere if stored outdoors (even though covered by canvas) shall be stored in a weathertight building to prevent injury. The building may be a temporary structure on the site or elsewhere, but it must be satisfactory to the Owner's Representative. Building shall be provided with adequate ventilation to prevent condensation. Maintain temperature and humidity within range required by manufacturer.
1. All equipment shall be stored fully lubricated with oil, grease and other lubricants unless otherwise instructed by the manufacturer.
  2. Moving parts shall be rotated a minimum of once weekly to ensure proper lubrication and to avoid metal-to-metal "welding". Upon installation of the equipment, the Contractor shall start the equipment, at least half load, once weekly for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.
  3. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. New lubricants shall be put into the equipment at the time of acceptance.
  4. Prior to acceptance of the equipment, the Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guaranty the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the Contractor's expense.

END OF SECTION

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## SECTION 01650

### FACILITY STARTUP

#### PART 1 GENERAL

##### 1.01 DEFINITIONS

- A. Facility Startup: Includes putting Project in operating order, cleaning, adjusting and balancing equipment, initial operation (startup) of equipment item, operating equipment, starting systems, operation of systems, testing of equipment and systems, and demonstration and verification of the completed facility as a unit.
- B. Functional Test: A test or tests in the presence of the Owner's Representative to demonstrate that the installed equipment or system meets manufacturer's installation and performance requirements and other requirements specified including, but not limited to, pressure testing, leak testing, vibration testing, and proper mechanical connections and operability for all valves and appurtenances.
- C. Operation Period: The operation period begins when the facility has been successfully started up as defined under Paragraph Startup Test Period and has met all Substantial Completion requirements.
- D. Performance Test: A test performed in the presence of the Owner and after any required functional test specified, to demonstrate and confirm that the equipment and/or system meets the specified performance requirements.
- E. Significant Interruption: May include any of the following events:
  - 1. Failure of Contractor to maintain qualified onsite startup personnel as scheduled
  - 2. Failure to meet specified performance for more than 2 consecutive hours.
  - 3. Failure of any critical equipment unit, system, or subsystem that is not satisfactorily corrected within 5 hours after failure.
  - 4. Failure of noncritical unit, system, or subsystem that is not satisfactorily corrected within 8 hours after failure.
  - 5. As may be determined by Owner.
- F. Startup Test Period:
  - 1. Startup of the entire facility or any portion thereof includes coordinated operation of the facilities by the Contractor, Subcontractors, Owner operating personnel, and Supplier or manufacturer's representatives for equipment items and systems after all required functional tests have been completed and those performance tests deemed necessary for the safe operation of the entire facility have been completed.
  - 2. Startup of the entire facility or any portion thereof shall be considered complete when, in the opinion of the Owner, the facility or designated portion has operated in the manner intended for fourteen (14) continuous days without significant interruption. This period is in addition to any training, functional, or performance test periods specified elsewhere. A significant interruption will require the startup then in progress to be stopped and restarted after corrections are made.

- G. System: The overall process, or a portion thereof, that performs a specific function. A system may consist of two or more subsystems as well as two or more types of equipment.

## 1.02 SUBMITTALS

### A. Administrative Submittals:

1. Functional and performance test schedules and plan for equipment, units, and systems at least fourteen (14) days prior to start of related testing. Include test plan and procedures.
2. Schedule and plan of facility startup activities at least fourteen (14) days prior to commencement.

### B. Quality Control Submittals:

1. Manufacturer's Certificate of Proper Installation as required.
2. Test Reports: Functional and performance testing, in format acceptable to Owner and certification of functional and performance test for each piece of equipment or system specified.
3. Operation and maintenance data as required.
4. Certifications of Calibration: Testing equipment including vibration test equipment.

## 1.03 FACILITY STARTUP; CONTRACTOR RESPONSIBILITIES

### A. General:

1. Perform Work for tests specified, including items furnished by Owner.
2. Demonstrate proper installation, adjustment, function, performance, and operation of equipment, systems, control devices, and required interfaces individually and in conjunction with existing system.
3. Provide water, power, chemicals, and other items as required for testing, unless otherwise indicated.

## 1.04 FACILITY STARTUP; OWNER'S RESPONSIBILITIES

### A. General:

1. Review Contractor's test plan and schedule.
2. Witness each functional or performance test.
3. Coordinate other plant operations, if necessary, to facilitate Contractor's tests.
4. Provide reclaimed water, as available.

### B. Startup Test Period: Operate process units and devices, with support of Contractor.

## PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION  
3.01 TESTING PREPARATION

A. General:

1. Complete Work associated with the unit and related processes before testing, including related manufacturer's representative services.
2. Provide related operating and maintenance manuals, and spare parts and special tools as specified before testing any unit or system. **These manuals shall be provided two weeks in advance of any on site testing.**
3. Furnish qualified manufacturer's representatives when required to assist in testing.
4. Schedule and attend pretest (functional and performance) meetings related to test schedule; plan of test; materials, chemicals, and liquids required; facilities' operations interface; and Owner involvement.
5. Designate and provide one or more persons to be responsible for coordinating and expediting Contractor's facility startup duties. The person or persons shall be present during facility startup meetings and shall be available at all times during the facility startup period.
6. Provide temporary valves, gauges, piping, test equipment and other materials and equipment required to conduct testing.

B. Cleaning and Checking: Prior to starting functional testing:

1. Calibrate testing equipment for accurate results.
2. Inspect and clean equipment, devices, connected piping, and structures so they are free of foreign material.
3. Lubricate equipment in accordance with manufacturer's instructions.
4. Turn rotating equipment by hand and check motor-driven equipment for correct rotation.
5. Open and close switches by hand and operate other devices to check for binding, interference, or improper functioning.
6. Check power supply to electric-powered equipment for correct voltage.
7. Adjust clearances and torques.
8. Test piping for leaks.

C. Ready-to-test determination will be by Owner, based at least on the following:

1. Notification by Contractor of equipment and system readiness for testing.
2. Acceptable testing plan.
3. Acceptable operation and maintenance manuals incorporating review comments.
4. Adequate completion of Work adjacent to, or interfacing with, equipment to be tested, including items to be furnished by Owner.
5. Availability and acceptability of supplier or manufacturer's representative, when specified, to assist in testing of respective equipment, and satisfactory fulfillment of other specified manufacturers' responsibilities.
6. All spare parts and special tools delivered to Owner.

3.02 FUNCTIONAL TESTING

A. General:

1. Begin testing at a time mutually agreed upon by the Owner, Supplier, manufacturer's representative(s), and Contractor.
2. Notify in writing Owner, and Supplier or manufacturer's representative at least five (5) working days prior to scheduled date of functional tests.
3. Separate items of equipment demonstrated to function properly during subsystem testing may require no further functional test if documentation of subsystem testing is acceptable to Owner.
4. Conduct functional test until each individual component item or system has achieved three (3) continuous hours of satisfactory operation. Demonstrate all operational features and controls function during this period while in automatic modes.
5. If, in Owner's opinion, each system meets the functional requirements specified, such system will be accepted as conforming for purposes of advancing to performance testing phase, if required. If, in Owner's opinion, functional test results do not meet requirements specified, the systems will be considered as nonconforming.
6. Performance testing shall not commence until the equipment or system meets functional tests specified.

### 3.03 PERFORMANCE TESTING

#### A. General:

1. Begin testing at time mutually agreed upon by the Owner, Supplier, manufacturers' representative(s), and Contractor, as appropriate.
  - a. Owner will be present during test.
  - b. Notify Owner at least five (5) working days prior to scheduled date of test.
2. Follow approved testing plan and detailed procedures specified.
3. Source and type of fluid, gas, or solid for testing shall be as specified.
4. Unless otherwise indicated, provide all labor, materials, and supplies for conducting the test and taking all samples and performance measurements.
5. Prepare performance test report summarizing test method. Include test logs, pertinent calculations, and certification of performance.

### 3.04 STARTUP TEST PERIOD

#### A. Test Reports: As applicable to the equipment furnished, certify in writing that:

1. Tanks, pumps, piping systems, and valves have been successfully tested and are fully operational.
2. Equipment systems and subsystems have been checked for proper installation, started, and successfully tested to indicate that they are operational and can perform their intended function.
3. Systems and subsystems are capable of performing their intended functions.
4. Facilities are ready for final testing and their intended operation.

#### B. Attend planning meetings and arrange for attendants by key major equipment supplier or manufacturer representatives and required, or as required by the Contract Documents.

- C. Designate and provide one or more persons to be responsible for coordinating and expediting Contractor's facility startup duties.
- D. When facility startup has commenced, schedule remaining Work so as not to interfere with or delay the completion of facility startup. Support the facility startup activities with adequate staff to prevent delays and process upsets. This staff shall include, but not be limited to, major equipment and system manufacturers' representatives, Subcontractors, electricians, instrumentation personnel, millwrights, pipefitters and plumbers.
- E. Supply and coordinate specified manufacturer's facility startup services, as applicable.
- F. Make adjustments, repairs, and corrections necessary to complete facility startup.
- G. After the facility is operating, complete the testing of those items of equipment, systems, and subsystems which could not be or were not adequately or successfully tested prior to startup test period.

### 3.05 PARTIAL UTILIZATION

- A. After successful performance testing of a particular equipment type or system, Owner may elect to start up a portion of the equipment or system for continuous operation in accordance with Paragraph 10 of the General Conditions. Such operation will not interfere with testing of other equipment and systems that may still be underway, and shall not preclude the need to startup that portion operated in combination with the rest of the facility when testing is completed.

### 3.06 CONTINUOUS OPERATIONS

- A. Owner will accept equipment and systems as substantially complete and ready for continuous operation only after successful facility startup is completed and documented, and reports submitted, and manufacturers' services completed for training of Owner's personnel.

END OF SECTION 01650

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## SECTION 01700

### CONTRACT CLOSEOUT

#### PART 1 GENERAL

##### 1.01 CONTRACT CLOSEOUT SUBMITTALS

- A. Reference: Paragraph 10, General Conditions and as otherwise required in the Contract Documents.
- B. Record Documents: As required in Section 01720, Record Documents.
- C. Approved Shop Drawings and Samples: As required in Section 01300, Submittals, of the specifications.
- C. Operations and Maintenance Manuals: Provide as required; or in accordance with the individual Specification sections.
- E. Certificates of Testing and Inspection: As required in Paragraph 3.3 of the General Conditions and the individual Specification sections.
- F. Certificate of Substantial Completion as required in Paragraph 10 of the General Conditions.
- G. Special Bonds, Special Warranties, and Service Agreements:
  - 1. Form of Submittals:
    - a. Bind in commercial quality, 8-1/2 by 11-inch three-ring side binders with hardback, clear, plastic covers. Label cover of each binder with typed or printed title 'WARRANTIES AND BONDS,' with title of Project; name, address, and telephone number of Contractor and equipment Supplier; and name of responsible principal.
    - b. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the Specification section in which specified, and the name of the product or Work item.
    - c. Separate each warranty of Bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, Supplier, and manufacturer, with name, address, and telephone number of responsible principal.
  - 2. Preparation for Submission: Obtain notarized warranties and bonds, executed in duplicate by responsible Subcontractors, Suppliers, and manufacturers, within ten (10) days after completion of the applicable item or Work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the date of Substantial Completion is determined. Retain warranties, Bonds, service agreements until time specified for submission.
  - 3. Time of Submission:

- a. For equipment or component parts of equipment put into service during construction to be utilized by Owner in accordance with Paragraph 9.2 of the General Conditions, submit documents within ten (10) days after the date of Substantial Completion for that part of the work.
- b. Submit other Submittals within twenty (20) days after the date of Substantial Completion and prior to submission of final Application for Payment.
- c. For item of Work, when acceptance is delayed beyond date of Substantial Completion, submit within 10 days after Owner's written acceptance, listing the date of acceptance as the beginning of the warranty period.

G. Certificates of Evidence of Insurance: As required in Paragraph 8.8, General Conditions.

H. Consent of Surety to Final Payment: As required in Paragraph 9.2.5, General Conditions.

I. Releases or Waivers of Liens and Claims: As required in Paragraph 9.2, General Conditions.

J. Spare parts and special tools.

K. Other Required Submittals: In accordance with the Contract Documents.

1.02 FINAL APPLICATION FOR PAYMENT. Submit final Application for Payment in accordance with procedures and requirements of Article 9, General Conditions; Section 01025, Measurement and Payment; and as may otherwise be specified herein.

1.03 FINAL INSPECTION. Reference Paragraph 10.2, General Conditions. Also, all applicable permitting agencies.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.01 FINAL CLEANING

- A. At completion of Work or of a part thereof and immediately prior to Contractor's request for certificate of Substantial Completion; or if no certificate is issued, immediately prior to Contractor's notice of completion, clean entire site or parts thereof, as applicable.
  - 1. Leave the Work and adjacent areas affected in a clean condition satisfactory to Owner.
  - 2. Remove grease, dirt, dust, paint or plaster splatter, stains, labels, fingerprints, and other foreign materials from exposed surfaces. Broom clean exterior paved driveways and parking areas. Hose clean sidewalks, loading areas, and others contiguous with principal structures.
  - 3. Repair, patch, touch up marred surfaces to specified finish and match adjacent surfaces.



4. Rake clean all other surfaces.
  5. Leave water courses, gutters, and ditches open and in condition satisfactory to Owner.
- B. Use only cleaning materials recommended by manufacturer of surfaces to be cleaned.

END OF SECTION 01700

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## SECTION 01720

### RECORD DOCUMENTS

#### PART 1 GENERAL

##### 1.01 SUBMITTALS

- A. Quality Control Submittals: Written procedures for maintaining and markup of record documents.
- B. Contract Closeout Submittal: Submit Record Documents in accordance with the requirements of this section. Submit prior to application for final payment.

##### 1.02 QUALITY ASSURANCE

- A. Furnish qualified and experienced person, whose duty and responsibility shall be to maintain record documents.
- B. Accuracy of Records:
  - 1. Coordinate changes within record documents, making legible and accurate entries on each page of Specifications and each sheet of Drawings and other documents where such entry is required to show change.
  - 2. Purpose of Project record documents is to provide factual information regarding aspects of Work, both concealed and visible, to enable future modification of Work to proceed without lengthy and expensive site measurement, investigation, and examination.
- C. Make entries within 24 hours after receipt of information that a change in Work has occurred.
- D. Prior to submitting each request for progress payment, request Owner's review and approval of current status of record documents. Failure to properly maintain, update, and submit record documents may result in return of Contractor's Application for Progress Payment by Owner as provided in Paragraph 9.2 of the General Conditions.

##### 1.03 DELIVERY, STORAGE, AND HANDLING

- A. Maintain record documents completely protected from deterioration, loss, and damage until completion of Work.
- B. In event of loss of recorded data, use means necessary to again secure data to Owner's acceptance.
  - 1. Such means shall include, if necessary in Owner's opinion, removal and reconstruction of covering materials, at no cost to Owner.

#### PART 2 PRODUCTS

##### 2.01 RECORD DOCUMENTS

- A. Promptly following commencement of Contract Times, secure from Owner at no cost to Contractor, one complete set of Contract Documents. Drawings will be half size, 11 by 17 inches.

## PART 3 EXECUTION

### 3.01 MAINTENANCE OF RECORD DOCUMENTS

#### A. General:

- 1. Label or stamp each record document with title, "RECORD DOCUMENTS," in neat large printed letters.
- 2. Record information concurrently with construction progress and within 24 hours after receipt of information that change has occurred. Do not cover or conceal Work until required information is recorded.

#### B. Preservation

- 1. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- 2. Make documents and Samples available at all times for observation by Owner.

#### C. Making Entries on Drawings

- 1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe change by graphic line and note as required.
  - a. Color Coding:
    - i. Green when showing information deleted from Drawings.
    - ii. Red when showing information added to Drawings.
    - iii. Blue and circled in blue to show notes.
- 2. Date entries
- 3. Call attention to entry by "cloud" drawn around area or areas affected.
- 4. Legibly mark to record actual changes made during construction, including, but not limited to:
  - a. Depths of various elements of foundation in relation to finished first floor data if not shown or where depth differs from that shown.
  - b. Horizontal and vertical locations of existing and new Underground Facilities and appurtenances, and other underground structures, equipment or Work. Reference to at least two measurements of permanent surface improvements.
  - c. Location of internal utilities and appurtenances concealed in the construction referenced to visible and accessible features of the structure.

- d. Locate existing facilities, piping, equipment, and items critical to the interface between existing physical conditions or construction and new construction.
  - e. Changes made by Addenda and Field Orders, Work Change Directive, Change Order, Written Amendment, and Owner's written interpretation and clarification using consistent symbols for each and showing appropriate document tracking number.
- 5. Dimensions on Schematic Layouts: Show on record drawings, by dimension, the centerline of each run of items such as are described in previous subparagraph above.
  - a. Clearly identify the item by accurate note such as "cast iron drain," galv. Water," and the like.
  - b. Show, by symbol or note, vertical location of item ("under slab," "in ceiling plenum, " "exposed," and the like).
  - c. Make identification so descriptive that it may be related reliably to Specifications.
- D. Make entries in other pertinent documents as accepted by Owner.
- E. If documents are not accepted by Owner, secure a new copy of that document from Owner at Owner's usual charge for reproduction and handling, and carefully transfer change data to new copy to acceptance of Owner.

END OF SECTION 01720

\* \* \* \* \*

**SECTION 01730**  
**OPERATING AND MAINTENANCE DATA**

**PART 1        GENERAL**

**1.01    SCOPE OF WORK**

- A. Compile, organize, submit, and revise, as directed by the Engineer an Operation and Maintenance Manual for each piece of equipment furnished, as required by the Specifications.
- B. Compile, organize, submit, and revise, as required, the attached Equipment Manufacturer's Certificate of Installation Testing and Instruction for acknowledgement by the Owner.
- C. Compile, submit, and revise as directed by the Engineer, the following attached Computerized Maintenance Management System (CMMS) datasheets for each piece of equipment furnished on this project:
  - 1. CMMS Information Worksheet
  - 2. Spare Parts List
  - 3. PM Program Worksheet
  - 4. Equipment Nameplate data Record

**1.02    CONTENT OF MANUAL**

- A. Each manual shall be specific to this Contract. All non-applicable information shall be crossed out, and the applicable information shall be highlighted or otherwise indicated in a manner to prevent confusion of those utilizing the manuals.
- B. Each manual shall contain the following information:
  - 1. Neatly typewritten Title Page/Cover Sheet to include:
    - a. Identification of equipment covered by the manual by providing the process name and equipment tag numbers.
    - b. Name of responsible principal, address, telephone number and area of responsibility of:
      - (1) Contractor.
      - (2) Subcontractor or installer.
      - (3) Product manufacturer.
      - (4) Nearest service center or maintenance contract or, as appropriate.
      - (5) Nearest source of supply for parts, materials, supplies or replacement products.
  - 2. Neatly typewritten Table of Contents sheet to include the following manual section headings:

- a. CMMS Data Sheets
  - b. System and Component Description
  - c. Maintenance Schedule
  - d. Installation Instructions
  - e. Operation Procedures
  - f. Maintenance Instructions
  - g. Troubleshooting Guide
  - h. Drawings and Spare Parts Lists
  - i. Technical Data
  - j. Other Components
  - k. Warranties, Bonds and Service Contracts
3. Manual sections shall be manufacturer's original printed information or neatly typewritten pages. Each section shall be tabbed in consecutive order such that the first tab will be Table of Contents.

#### 1.03 MANUALS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT

- A. In addition to the required content as listed in Paragraph 1.02, manuals for electric and electronic equipment shall include:
  1. Circuit directories of panelboards.
    - a. Electrical service.
    - b. Controls and control loops.
    - c. Communications.
  2. As-installed color coded wiring diagrams.
  3. Refer to Division 16 for further requirements.

#### 1.04 MANUALS FOR MATERIALS AND FINISHES

- A. Submit two copies of complete manuals for applied materials, finishes, moisture protection and weather-exposed products in final form only.
- B. Content
  1. Manufacturer's data, giving full information on product.

2. Instructions for care and maintenance.
3. Additional pertinent information as required by the respective Specification sections for the products.

#### 1.05 SUBMITTAL SCHEDULE

- A. Manuals shall be submitted according to the following schedule:
1. Submit three preliminary copies of manuals to the Owner prior to equipment delivery and no later than 30 days following approval of the shop drawings for each piece of equipment. Engineer will review and return one copy with comments.
  2. Submit three revised copies of manuals to the Owner, incorporating comments and revisions required by the Owner and/or Engineer 30 days after initial receipt of the reviewed preliminary manuals and comments from the Engineer. When manufacturer training is required for the subject equipment/system, the training shall not occur until after the revised copies have been approved by the Engineer. These revised copies shall be the source document for such training.
  3. Submit seven final copies of the manuals to the Owner, identical to the revised copies as approved by the Engineer, within 60 days of initial receipt of the approved revised copies from the Engineer, or prior to issuance of a certificate of substantial completion, whichever is earlier. The seven final copies shall be submitted in binders, as detailed in Paragraph 1.06.

#### 1.06 FORM OF MANUAL SUBMITTALS

- A. Format
1. Printed and typewritten sheets shall be standard 8-1/2 inch X 11 inch size.
  2. Paper shall be 20 pound minimum, white, with standard three hole punch pattern, with punched edges of each sheet of final submittals reinforced with plastic, cloth or metal.
  3. All text shall be manufacturer's original printed sheets or neatly typewritten pages.
  4. Sections shall be separated with tabbed index sheets to correlate with the Table of Contents of the manual.
  5. Drawings that are standard 8-1/2 inch x 11 inch size shall also have standard three hole punch pattern with punched edges of each sheet of final submittals reinforced with plastic, cloth or metal. Drawings larger than standard 8-1/2 inch X 11 inch size shall be folded and inserted into standard three hole punch pattern, 8-1/2 inch X 11 inch size, 0.0035 gauge standard pocket plastic sheet protectors.
  6. All diagrams, drawings and illustrations shall be of original quality, reproducible by the dry copy method.

B. Binding:

1. Preliminary and revised manual submittals.
  - a. Commercial quality three ring binders.
    - (1) Cleanable, oil, moisture and wear resistant, vinyl sealed stiff board covers with full size clear plastic/vinyl pockets on front and spine.
    - (2) Ring size to suit thickness of manual content.
2. Final manual submittals.
  - a. Four copies shall be bound in uniform three ring binders as detailed in Paragraph 1.06.B. 1.
  - b. Submit an electronic version of the entire O&M manual on CDs using PDF format, with bookmarks for each piece of equipment included.

1.07 INSTRUCTION OF OWNER PERSONNEL

- A. Before final inspection, instruct Owner's designated personnel in operation, adjustment and maintenance of products, equipment and systems, at agreed upon times.
- B. Use operation and maintenance manuals as basis for instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.
- C. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.

1.08 SERVICES OF MANUFACTURER'S REPRESENTATIVE

- A. Equipment furnished under Divisions 11, 13, 15 and 16 shall include the cost of a competent representative of the manufacturers of all equipment to supervise the installation, adjustment and testing of the equipment and to instruct the Owner's operating personnel on operation and maintenance. This supervision may be divided into two or more time periods as required by the installation program or as directed by the Engineer.
- B. See the detailed specifications for additional requirements for furnishing the services of manufacturer's representatives.
- C. A certificate in the form attached to this Section, from the manufacturer and signed by Owner's representative stating that the installation of the equipment is satisfactory, that the unit has been satisfactorily tested, is ready for operation and that the operating personnel have been suitably instructed in the operation, lubrication and care of the unit shall be submitted for each piece of equipment furnished on the project.



EQUIPMENT MANUFACTURER'S CERTIFICATE OF INSTALLATION TESTING  
AND INSTRUCTION

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

Project: \_\_\_\_\_

Contract No. \_\_\_\_\_

EQUIPMENT SPECIFICATION SECTION \_\_\_\_\_

EQUIPMENT DESCRIPTION \_\_\_\_\_

I \_\_\_\_\_, Authorized representative of  
(Print Name)

\_\_\_\_\_ (Print Manufacturer's Name)  
hereby CERTIFY that \_\_\_\_\_  
(Print equipment name and model with serial No.)

installed for the subject project [has] [have] been installed in a satisfactory manner, [has] [have] been satisfactorily tested, [is] [are] ready for operation, and that Owner assigned operating personnel have been suitably instructed in the operation, lubrication, and care of the unit[s] on Date: \_\_\_\_\_ Time: \_\_\_\_\_.

CERTIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
(Signature of Manufacturer's Representative)

OWNER'S ACKNOWLEDGMENT OF MANUFACTURER'S INSTRUCTION

[I] [We] the undersigned, authorized representatives of the \_\_\_\_\_ and/or Plant Operating Personnel have received classroom and hands on instruction on the operation, lubrication, and maintenance of the subject equipment and [am] [are] prepared to assume normal operational responsibility for the equipment:

\_\_\_\_\_ DATE: \_\_\_\_\_

\_\_\_\_\_ DATE: \_\_\_\_\_

\_\_\_\_\_ DATE: \_\_\_\_\_



## Spare Parts List

[illegible]



Form Completed By: \_\_\_\_\_

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

EQUIPMENT NAMEPLATE DATA RECORD	
Asset No.:	Location:
Asset Name:	Description:
Supplier Name:	Address/Phone/Contact:
<b>PUMP</b>	
Manufacturer Name:	Address/Phone/Contact:
Description:	
Output:	TDH:                      Model No.:                      Serial No.:
Size:	RPM:                      Type:
Installed Date:	Impeller Data:
Project No.:	Purchase Cost:                      Vendor:
Remarks:	
<b>MOTOR</b>	
Manufacturer Name:	Address/Phone/Contact
Model No.:	Serial No.:
RPM:                      Volts:	H.P.:                      Ph:
Amps:                      Hz:	EFF/SF:                      Code:
Frame:                      Type:	Insul Class:
Design:	Duty:
Remarks:	
<b>COMPONENT</b>	
Manufacturer Name:	Address/Phone/Contact
Model No.:	Serial No.:
Remarks/Specifications:	
<b>GENERIC</b>	
Manufacturer Name:	Address/Phone/Contact:
Remarks/Specifications:	

## SECTION 01740 WARRANTIES

### PART 1 GENERAL

#### 1.01 SCOPE OF WORK

- A. Preparation and submittal of warranties.
- C. Time and schedule of submittals.

#### 1.02 RELATED SECTIONS

- A. Section 00700 - General Conditions: Warranties and correction of work.
- B. Section 01700 - Contract Closeout: Contract closeout procedures.
- C. Section 01730 - Operation and Maintenance Data.
- D. Individual Specifications Sections: Warranties required for specific Products or Work.

#### 1.03 FORM OF SUBMITTALS

- A. Bind in commercial quality 8-1/2 x 11 binders with durable plastic covers.
- B. Cover: Identify each binder with typed or printed title WARRANTIES with title of Project; name, address and telephone number of Contractor [and equipment supplier]; and name of responsible company principal.
- C. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of Product or work item.
- D. Separate each warranty with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

#### 1.04 PREPARATION OF SUBMITTALS

- A. Obtain warranties executed by responsible Subcontractors, suppliers, and manufacturers, within 15 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties until time specified for submittal.

#### 1.05 TIME OF SUBMITTALS

- A. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
- B. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
- C. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

END OF SECTION

\* \* \* \* \*

## SECTION 03310

### CAST-IN-PLACE CONCRETE

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION

###### A. SCOPE OF WORK

The work included under this section consists of furnishing all labor, tools, equipment and materials necessary for the installation of all concrete, reinforced concrete, reinforcing steel, grout and mortar, as shown on the plans and specified herein. Concrete for concrete pavement shall conform to these specifications.

##### 1.02 QUALITY ASSURANCE, MATERIALS AND CONSTRUCTION

###### A. GENERAL

All concrete materials and construction shall comply with the requirements, and be in accordance with the American Concrete Institute Standard 301-89, "Specifications for Structural Concrete for Buildings," except as supplemented and modified as follows (all references to "Architect/Engineer" in the ACI Standard shall be interpreted as referring to the Engineer).

Additional workmanship and materials requirements shall conform to ACI 350R-89, "Environmental Engineering Concrete Structures." The Engineer shall interpret the applicability and intent of this section.

###### B. STRENGTH

1. The concrete for all structures shall have a minimum compressive strength of five thousand (5,000) pounds per square inch twenty-eight (28) days after placement.
2. All concrete shall contain a minimum of six-hundred-fifty-eight pounds (seven sacks) of Portland cement per cubic yard.

##### 1.03 SUBMITTALS

Per these specifications, the Contractor shall submit to the Engineer for favorable review the following, even though items proposed to be furnished conform to the exact description stated in this section or as shown on the Contract Drawings:

1. A notarized statement stating that the cement conforms to ASTM C-150.
2. Shop Drawings of all reinforcing details and layout.
3. Concrete mix design and strength data.



#### 1.04 PAYMENT

The cost of all cast-in-place concrete, including all materials, reinforcing, form work, finishing grout and epoxies shall be included in the bid price for the construction work and no additional compensation will be allowed.

### PART 2 - PRODUCTS

#### 2.01 GENERAL

All materials shall be furnished by an established and experienced manufacturer or supplier. All materials shall be new, shall be of first-class ingredients, and shall be guaranteed to perform the service required. If accelerated admixture (listed below) is used, there shall be a minimum three (3) day cure time before any anchor points are added, with District Engineer's prior approval.

#### 2.02 CONCRETE MATERIALS

##### A. CEMENT

All cement for all structures shall be Type II or Type V, ASTM C-150.

##### B. ADMIXTURES

1. An approved water-reducing admixture conforming to ASTM C-494 shall be added.
2. An approved air-entraining admixture conforming to ASTM C-260 shall be added. Total air content shall be between 2.5 and 3.5% as measured by ASTM C-173.
3. Other admixtures designed and manufactured for the express purpose of (1) preventing segregation of the mix and/or (2) improving the workability of the concrete will be permitted subject to written approval by the Engineer both for quality and proportions. Admixtures shall not be used to replace cement.
4. Corrosion-Inhibiting Admixture MasterLife CI-30 or equal may be requested by the Engineer. Admixtures shall not be used to replace cement. All costs shall be included in concrete items with no additional payment.
5. Unless specifically provided for in these Specifications, no other admixtures will be permitted.

##### C. AGGREGATES

1. All aggregates shall conform to "Specifications for Concrete Aggregates" (ASTM C-33). All aggregates shall have a minimum C.V. (cleanliness value) and S.E. (sand equivalent) of not less than 75. Three (3) samples shall be tested in each case and shall be taken from the weight hopper. The average of the results of the individual tests will be the accepted value in each case. These values shall be maintained throughout the course of the work, and any indicated deviation therefrom will be cause for rejection of such material, pending additional tests. Tests shall conform to Test Method No. Calif. 227 for Cleanliness Value for Coarse

Aggregate and Test Method No. Calif. 217 for Sand Equivalent (California Transportation Laboratory, California Test Methods).

2. The nominal maximum size of aggregates shall be 1/2"; gradation shall be based on a 1/2" nominal maximum size aggregate. In thin section (6" or less in thickness), a 3/4" nominal maximum size aggregate may be used if expressly approved in writing by the Engineer.

#### D. SELECTION OF PROPORTIONS

The Contractor shall have his/her mix designed and shall submit the proposed proportions to the Engineer for review and approval prior to the preparation of the trial batch. The cement content shall be not less than SEVEN (7) sacks of cement (94 lbs per sack) per cubic yard of concrete, and the water-cement ratio shall not exceed 0.45 or a total of 5.0 gallons of water per 94-lb sack of cement.

#### E. CHLORIDE LIMITATION

The maximum water soluble chloride ion content expressed as a percent of the cement contributed from all ingredients of the concrete mix, including water aggregates, cementitious material and admixtures, shall not exceed 0.10%.

#### 2.03 REINFORCING STEEL

Reinforcing steel shall conform to ASTM A-615, Grade 60.

#### 2.04 GROUT

Grout shall have a minimum cement content of 7 sacks per cubic yard, plus a water reducing agent.

### PART 3 - EXECUTION

#### 3.01 FORMWORK

Lumber and plywood shall conform to the dimensions of the concrete surfaces shown on the Plans, shall be sufficiently tight to prevent leakage, and shall be sufficiently strong and braced to maintain their proper shape and alignment.

Earth cuts shall not be used as forms for vertical surfaces other than foundations below grade. Where permitted, the cut shall be neat, straight and must stand vertical.

#### 3.02 REINFORCING

Reinforcing bars shall be tied and supported so as to maintain their exact shape and alignment during concrete placement. Lap bars 50 diameters at splices where permitted and not otherwise noted on the plans.

### 3.03 CONCRETE PLACEMENT

The Contractor shall notify the Engineer at least seventy-two (72) hours before concrete is placed. No concrete shall be placed until all excavations, forms, reinforcing and inserts have been constructed and observed by the Engineer.

All concrete shall be thoroughly vibrated during the pouring operation by a mechanical vibrator.

### 3.04 FINISHES ON CONCRETE

All surfaces shall be finished to flat true planes or smooth surfaces. Edges shall be straight or uniformly curved. Flat surfaces shall be accurate to within 1/8 inch in 10 feet. Unless otherwise designated on the plans, concrete finishes shall be as follows:

All surfaces - Trowel smooth.

Exposed unpainted vertical surfaces - Smooth form finish plus sacking.

All tie holes and bug holes shall be filled with non-metallic, non-shrink grout per ACI 350R-89.

### 3.05 DRYPACK AND SPECIAL HIGH-STRENGTH NON-SHRINK MORTAR

Where "drypack" is called for on the Plans, a mixture containing one (1) part cement to three (3) parts clean sand shall be used. The moisture content shall be such that the mixture will ball when formed by hand, but will crumble when struck. The mixture shall be confined in the opening to be filled and driven home in small amounts, using a hammer and a stick or blunt metal tool in such a manner that a very dense mortar is obtained. Should the resulting joint leak, the material shall be chipped out and the opening refilled until a watertight joint is obtained.

Mortar used shall be non-shrinking, level-fill grout, water and oil resistant, developing a compressive strength of at least 7,500 psi in seven (7) days, non-metallic and bond to metal. Mortar shall be used in accordance with the recommendations of the manufacturer.

### 3.06 ALTERATIONS TO CONCRETE STRUCTURES

#### A. GENERAL

1. All alterations, chipping, drilling or cutting of concrete shall be approved by the Engineer.
2. Where the Contractor is required to cut openings through existing concrete or masonry walls, the hole shall be pre-cut with a proper masonry saw on both sides of the wall. After removal of the concrete, all rough surfaces of the wall shall be ground smooth and patched with cement mortar.
3. Openings for installation of pipes up to twelve (12) inches diameter shall be machine cored. For larger pipes, openings shall be made by drilling small holes around the periphery prior to chipping out the concrete. After the pipe has been installed, the opening shall be grouted and made completely watertight.

## B. GROUT FOR ANCHOR BOLTS, MANHOLE STEPS AND OTHER EMBEDMENTS

Anchor bolts, manhole steps and other embedments shall be set in non-sag epoxy grout suitable for submerged service.

## C. CONCRETE SURFACE REPAIRS

All honeycombed, spalled, cracked, pitted or crazed concrete surfaces shall be chipped out and repaired using Camp Latex Concrete Repair and Topping as manufactured by the Camp Company, Inc, Chicago, IL, or "Sikadur Lo-Mod Mortar" as manufactured by Sika Corp, Santa Fe Springs, CA, or equal. The repairs shall be made in strict conformance with the manufacturer's recommendations. For smoothing or repairing large areas that require more than 3-inch thickness, special instructions on the use of the material shall be obtained from the manufacturer.

Where leaks occur in concrete walls, the concrete shall be chipped around the leak and sealed with cement grout above specified, in strict accordance with the manufacturer's instructions.

## D. BONDING NEW CONCRETE TO OLD

Where it is required to apply new concrete over old surfaces or to bond precast concrete sections or other types of material to concrete, the Contractor shall first apply a brush-on epoxy resin concrete adhesive equivalent to Concrevice #1 as manufactured by Adhesive Engineering, 1411 Industrial Road, San Carlos, CA, or "Sikadur Hi-Mod" as manufactured by Sika Corp, Santa Fe Springs, CA. The old surface shall be cleaned by sandblasting or chipping and the adhesive applied in strict accordance with the recommendations of the manufacturer.

### 3.07 TESTS OF CONCRETE

Slump tests shall be performed by the District at the beginning of each day's pour and at such additional times as required by the Engineer or his/her representative. Slump tests shall be made in accordance with current ASTM Designation C-143.

The amount of water used in the mixture shall be the amount required to produce concrete with a 4" maximum slump. When the slump of the concrete is found to exceed the nominal slump, the mixture shall be adjusted as directed by the Engineer to reduce the slump to a value within the nominal range shown.

Where there are adverse or difficult conditions which affect the placing of concrete, the Contractor may request permission of the Engineer to increase the slump by increasing both the water and cement content. The cost of additional water and cement shall be at the Contractor's expense.

### 3.08 INSPECTION

The District shall inspect and approve formwork and reinforcing steel placement prior to concrete pours. The Contractor shall provide at least twenty-four (24) hours notice that inspections are required.

END OF SECTION

## SECTION 11760

### RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTION EQUIPMENT

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. Contractor shall provide all labor, materials, equipment, installation and assembly, hardware, supports and appurtenances required to furnish, install and place in satisfactory operation the chain and flight system for the rectangular clarifiers as shown on the Drawings and as specified herein.
- B. Scope of supply shall consist of two (2) tank(s), with each tank containing:
  - 1. One (per tank) Longitudinal Collector mechanism(s) approximately eighty eight (88) FT Long, twenty (20) FT Wide, and fourteen (14) FT A.W.D., 4-shaft (pivot) system.
  - 2. The drive shaft shall be non-metallic, fiberglass shaft, wall to wall; the other three idler shafts shall be “stub shaft” pedestal mounts for the sprockets what are shaft-less in the middle of the tank.
  - 3. The Collector mechanism shall have an alignment alarm that can detect miss alignment of the Collector flights every three (3) inches (or less) of chain movement of the collector chain mechanism and with minimum of ten (10) sensors per wheel to measure rotation and comparative rotation of second wheel.
  - 4. All switches and sensors inside the tank shall be factory made, with cables and wires sealed and potted wire connections with a home-run cable length to the control panel or junction box outside the tank.
  - 5. Sprocket sizes are to be increased/changed and locations are to be adjusted as described on the plans to improve chain wrap and reduced stress on components.
  - 6. Chain and flight Collector system shall operate at the speed of two (2) feet per minute.
  - 7. Each tank shall have its own 316L Stainless Steel Control Panel with a “Smart Guard” controller (or equal) to monitor rotation and skew of mechanism and have exterior visible alarm lights and lock-out tag out disconnect. Alarm conditions of the East tank mechanism shall be displayed on the West tank control panel. All run and alarm conditions shall be signaled into the main control room. All run and alarm signals are to be connected to District SCADA by District forces.
  - 8. Separate motor stop switch with a lock-out tag-out shall be pedestal mounted next to the motor drive.

## 1.02 QUALITY ASSURANCE

### A. MANUFACTURER'S EXPERIENCE

1. All equipment shall be furnished by manufacturers with at least fifteen (15) years experience in the manufacture and design of chain and flight rectangular clarifier systems and components as specified.
2. Manufacture shall have at least twenty five (25) successfully operating installations in actual service for a period of not less than ten (10) years. A list of successful projects must be submitted with the Bid. Engineer may require evidence of this data.
3. Manufacturer shall be ISO 9001 certified.

### B. COLLECTOR CHAIN REQUIREMENTS

1. The manufacturer shall submit certified documentation proving that the collector chain has been endurance tested on a four-square endurance testing apparatus at a minimum load of 1,000 lbs and that the attachment link has been tested to a minimum of 8 degrees of twist.
2. Endurance testing:
  - a. NCS720S collector chain has been endurance-tested on a Four-Square endurance testing apparatus, submerged in clean water and subjected to a minimum of 240,000 chain/sprocket articulations under a load of 1,000 lbs at 20 ft/min.
  - b. The testing apparatus shall consist of two parallel shafts at approximately 47.5 inch centers containing two (2) sets of sprockets on each shaft. Two (2) strands of collector chain are tested simultaneously. 240,000 chain/sprocket articulations are equivalent to 20 year collector mechanism operation of a 175-foot long, 13-foot deep, four-shaft system running at TWO (2) feet per minute.
  - c. The test demonstrates no galling of barrel interiors, no chain sidebar failure, no pin failure, average barrel outside diameter wear not exceeding 0.0035 inch per year, and average pin wear not exceeding 0.004 inch per year for an equivalent collector of similar dimensions running at the above speed.
3. Attachment link twist testing:
  - a. Attachment link shall be tested by wrapping collector chain around a horizontally anchored sprocket with the attachment link placed at the middle of the chain test strand. The chain shall be tensioned and fastened off for safety. A lever arm shall be fastened to the attachment link in a vertical plane. A pull line is set up to pull the lever arm at a tangent to the pitch line arc and 90 degrees to the lever arm.

- b. At a point 36 inches from the connection at the attachment link, twist across its face is at a minimum of 8 degrees. The test shall confirm that no breakage has occurred and that the attachment link returns to its original position with no permanent deformation. This test is equivalent to a maximum flight bow of 11.4 inches at the center of a 20 ft long flight span between attachment links with a flight having an E x I value of  $5.35 \times 10^6$  lbs-in<sup>2</sup>.

## PART 2 - PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS

- A. Polychem Systems, Division of Brentwood Industries, Inc., of Reading, PA.
- B. Or Engineer approved Equal. Engineer approved "Or Equals" shall be considered only if materials and performance of construction meet or exceed specification requirements.

### 2.02 EQUIPMENT

#### A. COLLECTOR CHAIN

1. The collector chain shall be non-metallic, NCS-720-S, having a 6" pitch links with a minimum weight of 1.5 lbs/ft.
2. The chain shall have a published working load not less than 3100 lbs and a minimum ultimate tensile strength of 7000 lbs.
3. The chain shall be manufactured of reinforced thermoplastic polyester resin and shall be molded with the barrel and side bars as an integral assembly to assure squareness and strength of the links. Chains molded from acetal resins which stretch more than 1% at published working load shall not be acceptable. Chains which have both its links and pins molded from glass reinforced nylon shall not be acceptable.
4. The chain shall be assembled with pins of a minimum 0.861" diameter, manufactured of reinforced nylon resin or acetal resin.
5. The pins shall have a molded T-head, which shall seat and lock inside the chain link to prevent rotation, and shall not require special tools for installation.
6. Pins shall be inserted into the sidebar by hand, rotated 90 degrees, and held in place with an acetal retaining clip.

#### B. CHAIN TO FLIGHT ATTACHMENT LINKS



1. Rigid chain to flight attachment links shall be similar construction to the plain chain links and be manufactured of the same material as the chain link, with an attachment hole spacing to match industry standard.
2. The attachment link shall accommodate four (4) 3/8" diameter Type 316 Stainless Steel flight attachment bolts.
3. Attachment links shall be F-22-8 or F-22-6 to suit the flight height.
4. Pins to connect attachment links to collector chain shall be as described above.
5. Attachment links shall be capable of twisting a minimum of 8 degrees without failure.

#### C. FLIGHTS

1. The scraper flights shall be 3" x 8" nominal size C-channel specifically designed for sludge collector service and proven in collectors of similar width and length.
2. The member shall have a minimum product of the moment of inertia about its minor axis ( $I_{yy}$ ) and its modulus of elasticity (E) - ( $E \times I$ ) of  $5.35 \times 10^6$  lb-in<sup>2</sup>.
3. The flight shall be constructed of pultruded fiberglass reinforced plastic, from isophthalic polyester resin.
4. Flight shall have a minimum of 55% fiberglass content having continuous fiberglass filaments in addition to a fiberglass mat running the full length of the member.
5. Maximum water absorption of 0.6% measured in accordance with ASTM D-570, at 24 hour exposure at 73 degrees F.
6. A scraper lip shall be provided on the leading edge of the scraper flight to ensure cleaning of the tank floor.
7. Polypropylene filler blocks shall be furnished for bolting the chain attachment links to the scraper flight.
8. Scraper flights shall be spaced at 10 foot spacing for Longitudinal Collector(s).
9. Flights shall be properly drilled and notched at the factory prior to shipment
10. All attachment hardware shall be 316 Stainless Steel.

#### D. WEAR SHOES



1. Each scraper flight shall be provided with two (2) ½” thick wear shoes to run on floor rails and two (2) ½” thick wear shoes to run on return rails.
2. Shoes shall be molded from Nylon 6-6.
3. Wearing shoes shall have a minimum Rockwell Hardness of R116 when measured at time of manufacture.
4. Shoes shall have a minimum tensile strength of 12,000 psi.
5. Carrying wear shoes shall run on floor rails and shall be located central to the chain attachment link to avoid additional drilling of scraper flights.
6. Return wear shoes shall run on return tracks and be lugged to ensure proper flight tracking.
7. Wear shoes shall be reversible providing two (2) usable wearing surfaces.
8. The leading edge of all wear shoes shall be rounded for smooth transition between wear strips.

#### E. COLLECTOR CHAIN SPROCKETS

1. Sprockets shall be 100% molded from Cast Nylon-6 with a minimum tensile strength of 10,000 psi and a minimum Rockwell Hardness R115 when measured at time of manufacture.
2. Maximum water absorption of 1.3% measured in accordance with ASTM D-570, at 24 hour exposure at 73 degrees F.
3. Sprockets shall have a “hunting tooth” profile, an odd number of teeth, be reversible, and shall be compatible with NCS-720-S non-metallic chain.
4. Head shaft sprockets shall be split and sprocket halves shall be secured together and assembled on shafting with 316 Stainless Steel through bolt hardware. Wedge dogs are not an acceptable method for securing sprocket halves together.
5. Collector sprockets shall have integrally molded chain saver rims.
6. Head shaft sprockets shall have a keyway machined and (2) setscrews to restrict lateral movement.
7. Head shaft sprockets shall have a minimum of 23 teeth and a minimum pitch diameter of 22.24”.
8. Idler sprockets shall be solid one piece construction for ease of installation on to stub shafts.

9. Mount and secure idler sprockets on stub shafts with Polycarbonate retainer plates and ½” diameter 316 Stainless Steel hardware.
10. Idler stub shaft sprockets shall have a minimum of 17 teeth and a minimum pitch diameter of 16.61”.
11. Sprockets shall have a 5.25”, minimum, length through bore.

#### F. HEAD SHAFT

1. Head shafts shall be three-piece, overlapping, non-metallic telescoping tubes mounted to non-metallic or 316 stainless steel wall mounted head shaft spindles and pedestals.
2. For cross collectors and narrower widths, head shafts shall consist of a one-piece non-metallic Mono tube mounted to head shaft spindles.
3. Head shaft shall have keyways and keys sized to transmit the power required and fit the non-metallic sprockets.
4. Head shaft tubes shall be manufactured from high strength glass fiber reinforced epoxy resin, bi-axially wrapped at 45 degrees. End tubes and Mono tubes shall be 5-3/4” outer diameter while center tubes shall be 5-1/4” outer diameter.
5. After the telescoping tubular assembly or Mono tube is installed over the head shaft spindles, tubes shall be secured in place with glass reinforced Nylon 6-6 keys, interlocks, Cast Nylon-6 collars, and stainless steel hardware as required.
6. The tubes which mount to the spindles shall include internal one-piece slip fitting UHMW-PE tubular bearings, machined with keyways.

#### G. HEAD SHAFT SPINDLES

1. Head shaft spindles shall be Cast Nylon-6 with two (2) anchor holes. Spindle journal to accommodate slip fit bearing in End Tubes or Mono tube, or 316L stainless steel with four (4) anchor holes.
2. Spindle shall have a minimum tensile strength of 10,000 psi and a Rockwell Hardness of R115, when measured at time of manufacture.

#### H. IDLER STUB SHAFTS

1. Idler Stub Shafts shall be Cast Nylon-6 with two (2) anchor holes, or 316L stainless steel with four (4) anchor holes.

2. Stub shafts shall have a minimum tensile strength of 10,000 psi and a Rockwell Hardness of R115, when measured at time of manufacture.

I. SET COLLARS

1. Shafting set collars shall be Cast Nylon-6 and furnished with a 316 Stainless Steel clamping band.
2. Collars shall be split and contain shoulders to contain the clamping band.

J. IDLER SHAFT BEARINGS

1. Stub Shaft bearings shall be virgin UHMW-PE, 5.35" long, and thermally integrated with the idler stub shaft.
2. Bearings shall be removable and replaceable.

K. RETURN TRACK RAIL **(NOT INCLUDED)** (Retain existing Return Track Rails [8 total] to be relocated along with new 316 stainless steel hardware, as necessary, and re-used.)

L. RETURN TRACK SUPPORT WALL BRACKET ASSEMBLIES **(NOT INCLUDED)** (Retain existing Return Track Rails to be relocated along with new 316 stainless steel hardware, as necessary, and re-used.)

M. DEFLECTOR RAILS **(NOT INCLUDED)** (Retain existing Return Track Rails to be relocated along with new 316 stainless steel hardware, as necessary, and re-used.)

N. WEAR STRIPS

1. Wear strips shall be virgin Ultra High Molecular Weight Polyethylene (UHMW-PE) and be mounted to tank floor, return rails, and deflector rails (if required).
2. Wear strips shall come in 10 ft sections and measure a minimum 2-5/8" wide x 3/8" thick.
3. Contractor shall cut and fit wear strips in field as necessary.
4. Provide strips with square butt joint splices with a 3/8" expansion gap between wear strips.
5. Each section shall have one countersunk hole and three countersunk slotted holes to allow for, and control the direction of thermal expansion.
6. The tank floor shall have two (2) lines of wear strips to support the flight as it pushes sludge.

7. Floor wear strips shall be mounted directly to concrete floors and shall be attached with plastic drop-in anchors, conical spacer washers and #14 , 316 stainless steel, slotted Phillips or Cross head screws.

#### O. DRIVE CHAIN

1. Drive chains shall be non-metallic NH-78 having 2.609" pitch.
2. Links shall be manufactured from reinforced nylon with 303 Stainless Steel pins
3. Published working load of not less than 1740 lbs.
4. Minimum ultimate strength of 4000 lbs.
5. Pins shall be 3/8" diameter knurled end design.
6. Chain shall weigh approximately 1.25 lbs/ft.

#### P. DRIVE SPROCKET ASSEMBLY AND TORQUE OVERLOAD PROTECTION

1. Provide H78 series drive sprockets to match drive chain.
2. Drive sprocket shall be molded from Cast Nylon 6 with a bronze bushing.
3. Drive sprockets shall have 11 teeth of not less than 9.26" pitch diameter and be mounted to a 304 Stainless Steel hub, and secured in place with a 316 Stainless Steel retainer ring.
4. Drive sprocket hub shall have a keyway and setscrews for attachment of the assembly to the reducer shaft.
5. Drive sprocket assemblies shall be designed to protect the drive equipment and be furnished with a suitably sized aluminum necked down shear pin to transmit torque from the driving hub to the sprocket.
6. In the event of a high load or over torque condition, the shear pin shall break and disengage the drive sprocket from the hub.
7. The drive sprocket hub shall be equipped with a trip pin or lug that, upon breaking the shear pin, shall extend out from the hub and make contact with an limit switch actuator arm, which shall signal the shut down the motor and an alarm circuit.
8. The double throw limit switch shall be provided with a NEMA 4 enclosure and a support bracket for positioning the limit switch adjacent to the torque device.

9. For drive units which operate two or more chain and flight collectors, drive sprockets shall be furnished with a jawclutch and handwheel to allow for disengagement of one system while the other continues to operate.

#### Q. DRIVE UNIT

1. Each collector mechanism shall be operated by its own drive unit located at the top deck of the tank. The drive, gearbox ratio and sprocket assembly shall provide a final flight Collector speed of two (2) feet per minute without the use of a VFD.
2. The motor shall be totally enclosed, and fan cooled (TEFC), and sized to provide ample power to start and continuously operate the mechanism under normal operating conditions without overloading.
3. The motor shall be directly connected to the speed reducer and mounted as a common unit.
4. The motor shall conform to NEMA or IEC standards, exterior sever-duty.
5. The motor shall operate on 230/460 volt, 3 phase, and 60-Hertz power supply.
6. The reducer shall be a helical gear or helical bevel design.
7. The unit shall be fully housed, shall run in oil, and shall be equipped with anti-friction bearings throughout.
8. Manufacturer shall assemble the drive unit and ship it to site as a complete assembly.
9. Drive unit shall be mounted on a 304 Stainless Steel base.

#### R. DRIVEN SPROCKET

1. The driven sprocket shall be molded from the same material as the collector sprockets and have a dished body with an offset so that flights may pass over the head shaft without interference from the driven sprocket or modifications to the flight.
2. Sprocket teeth shall be integral to the hub. Bolted on segmental teeth shall not be allowed.
3. Sprockets shall have 40 teeth with a pitch diameter not less than 33.25".

4. Sprocket hubs shall be split and contain a keyway and setscrews for mounting to the head shaft.

4. All sprocket hardware shall be 316 Stainless Steel.

#### S. DRIVE CHAIN TIGHTENER (TENSIONER)

1. The drive chain arrangement shall be provided with a chain tightener to take-up the excessive slack in the drive chain.
2. The tightener assembly shall include a Cast Nylon 6 slide base and an FRP or 316 stainless steel mounting bracket anchored to the top of the deck.
3. The idler sprocket shall be reinforced Nylon 6-6 and have 7 teeth.

#### T. CHAIN GUARD

1. The drive chain and sprockets located above the deck shall be covered with a removable chain guard.
2. The chain guard shall be 316L Stainless Steel or non-metallic, or combinations of these materials.

#### U. ANCHORS AND FASTENERS

1. All anchor bolts, nuts and washers shall be Type 316 Stainless Steel furnished by the Manufacturer.
2. Chemical adhesives for fixing anchor bolts into walls shall be of approved manufacturer and installed in accordance with manufacturer's printed instructions.
3. All fasteners, brackets, uni-strut supports, and conduits shall be Type 316 Stainless Steel unless otherwise specified.

### 2.03 SPARE PARTS

- A. Spare parts shall be packaged and labeled separately.
- B. The following spare parts shall be furnished at a minimum.
  1. Twenty (20) feet of drive chain.
  2. Ten percent of all collector chain furnished.

3. Ten percent of all chain attachment links furnished. Furnish one (1) pin and clip for each attachment link furnished as spares.
4. Five (5) longitudinal flights, complete with wear shoes, fillerblocks, and hardware.
5. One (1) replacement drive sprocket, to fit furnished shear pin drive sprocket assemblies.
6. Twelve (12) shear pins for every drive sprocket assembly furnished.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

- A. Install all equipment in accordance with the manufacturer's instructions, recommendations, and approved shop drawings.

### 3.02 MANUFACTURER'S SERVICES

- A. Furnish the services of a qualified manufacturer's representative to inspect the complete installation, make any necessary adjustments, participate in the startup and field testing of equipment, and place into trouble-free operation.
- B. Furnish the services of a qualified manufacturer's representative to instruct plant personnel in the operation and maintenance of equipment.
- C. The following manufacturer's service shall be provided.
  1. One (1) trip for two (2) eight hour days for set-up and start-up each tank equipment.
  2. One (1) trip for one (1) eight hour day for operator training in operation and maintenance of the electrical control systems.

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

## SECTION 15051

### SLUICE GATES

#### PART ONE – GENERAL

##### 1.01 DESCRIPTION

###### A. SCOPE

This section covers stainless steel and composite construction isolation sluice gates (also called slide gates) and operators. All materials shall be stainless steel shall be Type 316L or a Non-Metallic/Metallic composite or approved equal, as specified.

Contractor shall furnish and install the following sluice gates :

<u>Gate</u>	<u>No</u>	<u>Size</u>	<u>Type</u>	<u>Operator</u>	<u>Stem</u>	<u>Location</u>	<u>Material</u>
A-1	1	30"x30"	Wedging Sluicegate	Pedestal	Rising	Sed. Tank 1	Stainless Steel
A-2	1	30"x30"	Wedging Sluicegate	Pedestal	Rising	Sed. Tank 2	Stainless Steel
B	1	20"x20"	Wedging Sluicegate	Yoke	Rising	Outflow to Sand Filters	Stainless Steel OR Composite

###### B. RELATED WORK SPECIFIED ELSEWHERE

1. Concrete Work: Section 03310

##### 1.02 QUALITY ASSURANCE

###### A. GENERAL

1. The equipment provided under this section shall be fabricated, assembled, erected, and placed in proper operating condition in full conformity with the drawings, specifications, engineering data, contractors field verification of all dimensions, instructions and recommendations of the equipment manufacturer unless exceptions are noted by the engineer.
2. Gates and operators shall be supplied with all the necessary parts and accessories indicated on the drawings, specified, or otherwise required for a complete, properly operating installation and shall be the latest standard product of a manufacturer regularly engaged in the production of fabricated gates.



## B. GOVERNING STANDARDS

Except as noted or supplemented herein, all gates and operators shall conform to the applicable requirements of AWWA C561 (Sluice), C513 (Weir and Channel Gates), latest edition.

## C. QUALITY ASSURANCE

1. The manufacturer shall have experience in the production of substantially similar equipment, and shall show evidence of satisfactory operation in at least 5 installations. The manufacturer's shop welds, welding procedures and welders shall be qualified and certified in accordance with the requirements of the latest edition of ASME, Section IX.
2. The fully assembled gates shall be shop inspected, tested for operation and leakage and adjusted before shipping. There shall be no assembling or adjusting on job sites other than for the lifting mechanism.
3. The gate's sealing system shall have been tested through a cycle test in an abrasive environment and shall show that the leakage requirements are still obtained after 25,000 cycles with a minimum deterioration.
4. The manufacturer shall be ISO 9001 certified.

## 1.03 SUBMITTALS

### A. SHOP DRAWINGS

The Contractor shall submit shop drawings for favorable review by the Engineer in accordance with these specifications, and related contract documents. Sufficient data shall be included to show that equipment conforms to specification requirements to the satisfaction of the Engineer.

### B. MANUALS

The Contractor shall furnish manufacturer's detailed operating and maintenance data, including installation, lubrication and maintenance manuals, bulletins and spare parts lists in accordance with these specifications, and related contract documents.

### C. AFFIDAVITS

The Contractor shall furnish affidavits from the manufacturer stating that the pumps and appurtenances have been properly installed and tested and each is ready for operation.

### D. SERVICE

The manufacturer shall certify that he/she has an authorized dealer housing spare parts and a service facility in the area.

## 1.04 PAYMENT

The cost of all sluice gates and appurtenances shall be included in the bid prices for the construction work and no additional compensation will be allowed.

## PART TWO – PRODUCTS

### 2.01 PRODUCTS GENERAL

#### A. GENERAL

Sluice gates shall be Type 316L stainless steel consisting of a frame on which are mounted the rails and a movable slide and a rising stem. Wedging action upon closure is obtained by constructing the seating surface at an angle to the vertical mounting of the gate. Sluice gates shall be Fontaine Series 10, equivalent Whipps, or equal.

#### B. DESIGN HEAD

The sluice gates shall be designed to withstand a seating and unseating head of 30 feet.

#### C. LEAKAGE

Sluice gates shall be substantially watertight under the design head conditions. Leakage shall not exceed 0.001 gallon per minute per foot of periphery under the design seating head of 15 feet, and 0.002 gallon per minute per foot of periphery for an unseating head of 20 feet.

#### D. FRAME

The gate frame shall be made of structural members of formed plate welded to form a rigid one-piece frame. The frame shall be of the flange back design and allow mounting directly on the existing concrete wall. The seating face of the frame shall be machined at an angle to the plane of the mounting flange.

#### E. SLIDE

The slide shall consist of a flat plate reinforced with formed plates or structural members to limit its deflection to 1/720 of the span of the gate under the design head. The door shall be machined to match the frame.

#### F. GUIDES AND SEALS

The guide slot shall be UHMWPE (ultra high molecular weight polyethylene), attached to the slide by means of studs, and shall be of such length as to retain and support at least two thirds (2/3) of the vertical height of the slide in the fully open position. The guide slot may be adjusted by means of adjusting bolts.

## G. STEM AND COUPLINGS

1. The operating stem shall be of Type 316 stainless steel designed to transmit in compression at least 2 times the rated output of the operating manual mechanism with a 40 lb (178 N) effort on the crank or handwheel.
2. The stem shall have a slenderness ration ( $L/r$ ) less than 200. The threaded portion of the stem shall have machined cut threads of the Acme type.
3. The stem design force shall not be less than 1.25 times the output thrust of the hydraulic or pneumatic cylinder with a pressure equal to the maximum working pressure of the supply, or 1.25 times the output thrust of the electric motor in the stalled condition. Minimum stem diameter shall be 2".
4. For stems in more than one piece and with a diameter of 1¾ inches (45 mm) and larger, the different section shall be joined together by solid couplings. Stems with a diameter smaller than 1¾ inches (45 mm) shall be pinned to an extension tube.
5. The couplings shall be grooved and keyed and shall be of greater strength than the stem.

## H. STEM GUIDES

Stem guides shall be fabricated from Type 316L stainless steel. The guide shall be equipped with an UHMWPE bushing. Guides shall be adjustable and spaced in accordance with the manufacturer's recommendation. The  $L/r$  ratio shall not be greater than 200.

## I. STEM COVER

Rising stem gates shall be provided with a clear polycarbonate stem cover. The stem cover shall have a cap and condensation vents and a clear Mylar position indicating tape. The tape shall be field applied to the stem cover after the gate has been installed and positioned.

## 2.02 HEAVY DUTY COMPOSITE SLUICE GATES

- A. SUMMARY: This Section includes all Sluice Gates required for the project.
- B. REFERENCES Design, fabricate and test Gates and materials in accordance with manufacturer's recommended procedures and the following codes and standards:

1.	ASTM A193	Stainless Steel Anchor Bolts
2.	ASTM A276	Stainless Steel Bars
3.	ASTM B584	Alloy 865 Manganese Bronze
4.	ASTM D256	Izod Impact Strength
5.	ASTM D570	Water Absorption Rate
6.	ASTM D638	Tensile Strength
7.	ASTM D695	Compressive Properties of Rigid Plastic
8.	ASTM D696	Coefficient of Linear Expansion
9.	ASTM D790	Flexural Properties
10.	ASTM D792	Density and Specific Gravity at 230 C
11.	ASTM D1056	Polymer Grade
12.	ASTM D2563-0	Visual Defects
13.	ASTM D2583	Indentation Hardness
14.	ASTM D2584	Resin, Glass & Filler Content
15.	AWWA C-563	Fabricated Composite Slide Gates
16.	AWWA C-540	Power Actuating Devices - Sluice Gates

C. Manufacturer shall be experienced in the design and manufacture of specific gates and accessories for a minimum period of 20 years.

D. Manufacturer must provide warranty for 25 years against failure due to corrosion.

E. SUBMITTALS: Submit the following for acceptance:

1. Approval Drawings
  - a. Showing all critical dimensions.
  - b. Showing principal parts and materials.
2. Spare parts list (when applicable).

F. DELIVERY, STORAGE AND HANDLING

1. Ship all gates with suitable packaging to protect products from damage.
2. Protect threads, flanges, stems and operators from damage.

G. PRODUCTS MATERIALS: Gate body shall be:

1. Engineered composite fiberglass reinforced plastic (FRP) completely encapsulating an internal steel reinforcing structure.
  - a. Infusion molded to create a seamless corrosion barrier impervious to moisture.
  - b. FRP resin shall be manufactured of blue-green fiber glass reinforced polyester resin laminate material containing ultra-violet radiation deterioration and weathering inhibitors.
  - c. Internal Steel Reinforcing: Carbon Steel as needed for deflection requirements.

- d. Internal Core Foam: 2lb (0.9kg) polyisocyanurate closed cell rigid foam.
- H. Guide Frame
  - 1. Guide Frame Rails: 316 stainless steel
  - 2. Operator Support Yoke: 316 stainless steel
- I. Stems and Gate Hardware
  - 1. Stem: 316 stainless steel
  - 2. Gate Hardware: 316 stainless steel
- J. Seals
  - 1. Side, Top and Flush Bottom Seals: Hollow Bulb J Seal molded of extruded neoprene
- K. J-Seal Clamping Bar and Fasteners
  - 1. Clamping Bar: 316 stainless steel
  - 2. Fasteners: 316 stainless steel
- L. Lift Nuts and Thrust Nuts
  - 1. Manganese Bronze, ASTM B-584, Alloy 865.
- M. Hand wheel
  - 1. Cast Iron, ASTM A-126, Class B.
- N. Anchor Bolts
  - 1. 316 stainless steel
- O. Stem Cover
  - 1. Butyrate (manual hand wheel).
  - 2. Clear PVC (Electric Motor Operators).
- P. Stem Guides (When applicable)
  - 1. UHMW

## 2.03 COMPOSITE SLUICE GATES

- A. Acceptable Manufacturers:
  - 1. Plasti-Fab, Inc.
  - 2. Or approved equal. Pre-approved by Engineer at least 10 business days prior to bid date.
    - a. Manufacturer must have a qualified Engineer on staff with at least 5 years experience with hydraulic control gates.
- B. Gates shall meet AWWA C-563 Requirements:
  - 1. Leakage:
    - a. Gates shall have a maximum leakage rate of 0.05 GPM per foot (1.24 LPM/m) of wetted perimeter under seating and unseating head pressures under full design head.

Sluice gate shall be wedging and have adjusting bolts.

## 2.04 DESIGN CRITERIA

- A. Composition of the sluice gate laminate shall be in accordance with the recommendations shown in the Quality Assurance Report for Reinforced Thermostat Plastic (RTP) Corrosion Resistant Equipment prepared under the sponsorship the Society of the Plastics Industry, Inc. (SPI) and the Material Technology Institute of the Chemical Process Industries, Inc. (MTI) for "Hand Lay-up Laminates" and shall meet the specifications for Type 1, Grade 10 laminates shown in Appendix M-1 of said report.
  - 1. Visual inspection for defects shall be made without the aid of magnification and defects shall be classified as shown in Table 1 Level II of ANSI/ASTM D2563-0, approved 1977, (or any subsequent revision).
- B. Deflection
  - 1. Deflection across the gate width shall be limited to:  $L/360$  or  $\frac{1}{4}$ " (6mm), whichever is less, at the maximum operating head.
- C. Head Pressure

Gate shall be designed for a maximum head pressure as shown in gate schedule.
- D. Gate Size as shown on the contact drawings and/or gate schedule.
- E. Surface Conditions
  - 1. All sluice gates shall be flat and level.
  - 2. Warpage throughout the entire gate shall not produce a crown of more than  $\frac{1}{16}$ " (1.6mm) in any direction.
  - 3. Gates having reinforcing members bolted or bonded to flat sheet stock will not be acceptable.
- F. Sealed Area
  - 1. Sluice gate shall seal on all four sides.

## 2.05 CONSTRUCTION

### A. Gate Body

- 1. Sluice gate body shall be manufactured of fiberglass reinforced polyester totally encapsulating an internal reinforcing structure.
- 2. Each gate shall be infusion molded individually to the exact dimensions specified. Seams and joints in and on the body are not acceptable.
- 3. Sluice gates shall be manufactured of reinforced thermoset plastic.
- 4. Gate body shall have UV Stabilizing pigment in the Resin to provide long-term protection from UV.
- 5. The surface shall be resin rich to a depth of .010 inches to .020 inches (.25 - .51mm) and reinforced with C-glass and/or polymeric fiber surfacing material.
- 6. The surface shall be free of exposed reinforcing fibers.

7. The composition of these layers shall be approximately 95% (by weight) resin. The remaining laminate shall be made up of copolymer composite and reinforcing fibers in a form, orientation and position to meet the mechanical requirements.
8. Structural reinforcing shall be utilized to attain the necessary stiffness to meet deflection requirements, and shall be well encapsulated with a laminate not less than 1/4" (6mm) thick on each side to ensure against any permeation by water to the core areas.
9. 316 stainless steel stem mounting bracket shall fasten to the gate with through bolts. The through holes shall not pass through or be in contact with the internal mild steel reinforcing.
10. Core material must be 100% resistant to decay and attack by fungus and bacteria and be resistant to hydrocarbons.
11. Gate body shall be manufactured using advanced technology vacuum infusion resin transfer processes. The closed mold vacuum process must completely evacuate all air from the mold prior to infusing the mold with premium quality resin as specified. The vacuum infusion process must eliminate the potential of air entrapment and/or voids in the matrix of the gate body thus producing a finished product that is one-piece, seamless and uniformly impenetrable by fluids eliminating interior corrosion. Manufacturing techniques that employ adhesives or mechanical fasteners to attach individual panels to a pre-fabricated framework results in seams along vertical and horizontal axes of the gate body which create stress-potential areas, portals for fluid infiltration, subsequent de-lamination and product failure due to corrosion.

#### B. Seals

1. The gate shall be equipped with elastomeric seals to reduce leakage.
2. Elastomeric J-seals shall be made of extruded neoprene having a hardness range of 55 to 65 shore A durometer and conforming to ASTM spec. D-2000 having a maximum compression set of 25%, and low temperature brittleness to meet suffix F-17 (-400).
3. Seals, including bottom seals, shall be mounted on gate covers with 316 stainless steel cap screws and 316 stainless steel clamping bars thus providing a means of repair, and replacement without dewatering the channel.
4. HDTs gates shall be designed and manufactured with the seals mechanically affixed to the gate body NOT the guide frames. When replacement of seals eventually becomes necessary (variables such as frequency of open-close cycles, chemical composition and abrasiveness of the fluid will ultimately determine the effective life of the seals) the HDTs gate shall be removable from the guide frame without dewatering the channel and, in a suitable work area, easily and economically refitted with a new seals. Gates designed with seals integral to the guide frames, which require channel de-watering, scaffolding/lifts/ladders and time-consuming "non workshop" conditions shall not be permitted.

#### C. Frames and Guides

1. Guides shall be fabricated from 316 stainless steel and shall have a slot suitable for mating with the gate body.

2. Where self-contained guides are extended above the operating floor level to form the bench stand upon which the lift mechanism is fastened, they must be suitably strong and rigid without the use of additional stiffening members.
3. The head rail shall be affixed so as to allow the gate to be removed from the guide without disassembly.
4. The head rail shall have a maximum deflection of 1/4" (6mm) when subjected to a horizontal force of four times the 40 lb. (2.8 ksc) maximum hand wheel pull.
5. Where a wall mounted guide frame extends above a concrete wall the top anchor bolt shall be not more than 6" (152mm) below the top of the wall.
6. Gate inverts shall be flush with the channel bottom.
7. If the Gate width is greater than 4' (1.2m) wide and 2x the gate height, a tandem stem shall be used.
8. Guides to be bolted to the head wall shall be equipped with heavy duty mounting angle for ease of mounting to the channel wall by means of 316 stainless steel anchor bolts.
9. No wall thimbles shall be required for installation.

#### D. Adjustable Wedging Device

1. Gates shall be fitted with an adjustable wedging assembly comprised of a 316 stainless steel wedging bar and silicon bronze adjusting bolts with locking nuts. The adjusting bolts shall be non-galling for long-term easy adjustment. Gate wedging assembly shall be initially adjusted at the factory; however, they shall be easily adjusted to achieve the specified leakage rate. HDTS gates utilizing the Plasti-Fab wedging device shall be provided for ease of reliable manipulation, accessibility and adjustment if required

#### E. Lifts & Operators

1. Operators shall be sized to start the gate moving under a maximum head pressure with a pull of not more than 40 lbs (2.8 ksc).
2. A manual hand wheel or crank shall be supplied that is compatible with the lift.

#### F. Electric, pneumatic or hydraulic Operators (OPTIONAL)

1. Gate Manufacturer shall provide actuators per Electric Motor Operator Manufacturer's recommended sizes based on Operating Forces and design requirements and shall be for open/close or modulating service as shown in the gate schedule.

#### G. Operating Stems

1. Each HDTS gate shall be equipped with a rising or non-rising operating stem. The stem shall be rising .
2. The stem will have Acme threads and shall be provided with adjustable stop collars to limit upward and downward travel.
3. Stems shall have a maximum L/R of 200.
4. Stem guides with UHMW bushings shall be used to maintain an L/R of 200.



#### H. Stem Covers

1. Transparent plastic stem covers shall be provided with vent holes to minimize condensation.
2. The stem covers shall be marked with 'Open' and 'Closed' position indicators.

#### I. Pedestals

1. For non-self-contained guide frames a pedestal shall be furnished for mounting the operator.
2. Pedestal material shall be 316 stainless steel.

### 2.06 PHYSICAL PROPERTIES

- A. Structural characteristics for a 1/8" (3mm) glass mat laminate shall meet the following minimum physical properties:

Tensile strength	15,000 psi (1034 ksc)
Flexural Modulus	1,000,000 psi (70307 ksc)
Flexural Strength	20,000 psi (1406 ksc)
Compressive Strength	22,000 psi (1547 ksc)
Impact Strength	9.0 ft-lbs/in. (1.24 kgf.m/25mm)
Water absorption	0.13% (in 24 hours)

- B. Seals: Extruded Virgin Neoprene Seals shall have the following physical characteristics:

Specific Gravity	1.25
Hardness	55 – 65 Shore A Durometer
Tensile Strength	1500 psi min. (0.07ksc)
Elongation	300%
Low temperature brittleness	- 40°

C. Wear Strips UHMW Polyethylene:

Tensile Strength	5,600 psi (0.7kg/cm2)
Flexural Modulus @ 730F (230C)	130,000 – 140,000 psi (9140 – 9843kg/cm2)
Coefficient of Friction	0.15
Water Absorption	0.01% in 24 hours

2.07 STAINLESS STEEL SLUICE GATES

A. STAINLESS SLUCE GATES GENERAL

Sluice gates shall be from one manufacturer with similar sizes identical and parts interchangeable. Gates shall be manufactured by Fontaine Gates, Golden Harvest, inc., golden gates or engineer pre-approved equal.

B. GUIDES:

Guides shall be of stainless steel and designed for maximum rigidity. The weldment shall contain a neoprene seat and allow for a flush seal. Guide frames shall be provided with ultra high molecular weight polyethylene seats on both sides of the slide. Where the guides extend above the operating floor, they shall be sufficiently strong so that no further reinforcing shall be required. The yoke, to support the operating bench stand, shall be formed by two structural members welded at the top of the guides to provide a one piece rigid frame. The yoke shall be designed to allow for slide removal without removing the yoke. Guide frame shall weigh not less than 13 lbs. Per foot

C. SLIDE:

Gate slide shall be stainless steel plate adequately reinforced for the head requirements specified. The head guide angles shall be attached to slide in such a way to place the slide in an angle corresponding to the seating surface of the spigot.

D. SEALS:

Neoprene d-seal seal with stainless steel retainer bar. Bars held in place in the guide with stainless steel fasteners. The neoprene shall not be solely relied upon for the contact seal.

D-seals shall be field replaceable without removing gate from concrete or wall thimble. Seals in contact with slide shall have a minimum face width of 1 inch. J-bulb, self-adjusting compression cord seals, or winged uhmw seals will not be allowed.

E: WEDGES:

Sluice gates shall have top wedges. Wedges shall be stainless steel with ultra high molecular weight polyethylene faces and be fully adjustable.

F. OPERATOR:

Manually operated lifting mechanisms shall be of the hand wheel or crank operated fully enclosed geared type as indicated on the drawings and schedule. The hand wheel type shall be without gear reduction. The crank operated type shall have either a single or double gear reduction depending upon the lifting capacity required. Operator housing shall be cast steel or cast iron. Each type shall be furnished with a threaded bronze lift nut to engage the threaded portion of the stem. The lift nut shall be flanged and supported on roller bearings to take the thrust developed during opening and closing of the gates. Anti-friction thrust washers or bearing plates will not be permitted. Gears, where required, shall be provided with machine cut teeth designed for smooth operation. The bearings and lift nut shall be mounted in a housing, which in turn

shall be supported by a pedestal or mounted on the yoke of the gate. Lubrication fittings shall be provided in the gear housing to permit lubrication of all gears and bearings. Mechanical seals shall be provided around lift nut and pinion shaft. Operators shall be provided with a vented clear butyrate stem cover having a transparent mylar scale calibrated in feet and inches to show gate position. Adjustable bronze stop collars shall be provided to limit both upward and downward travel. The distance between the hand wheel and the operating floor shall be approximately 36". An arrow shall be cast on the gear housing or the hand wheel to indicate the direction of rotation to open the gate. A maximum effort of 40 pounds shall be required to operate the gate after it is unseated.

G. STEM:

The operating stem shall be type 304 or 316 stainless steel of suitable length and ample strength for the intended service. The stem diameter shall be capable of withstanding twice the rated output of the operator at 40 pounds pull and shall be supported such that the l/r ratio for the unsupported part of the stem does not exceed 200. The threaded portion of the stem shall have acme type cold rolled threads with a maximum surface roughness of 16 micro-inches. Machine cut threads will not be permitted.

#### H. STEM GUIDES:

Stem guides (when required) shall be supplied to support the stem. Stem guides shall be of stainless steel with ultra high molecular weight polymer bushings having a minimum thickness of 3/4". Bushings shall be machined to a size 1/16" over stem diameter. Bushings shall be attached to support member with stainless steel bolts and be adjustable in two directions.

#### I. WALL BRACKETS AND PEDESTALS:

Wall brackets shall be stainless steel. Pedestals shall be of fabricated steel and shall be shop painted as specified in the general equipment stipulations.

#### J. WALL THIMBLES:

Wall thimbles shall be stainless steel, suitable for mounting the sluice gate and of the size and type shown on the drawings.

#### K. LEAKAGE:

Leakage as specified above.

#### L. MATERIALS:

<u>Components</u>	<u>Material</u>
Slide, spigot, frame, stiffeners, yoke, guide angles	stainless steel type 316, ASTM a-276
Stems	stainless steel type 316, ASTM a-276
Fasteners and anchor bolts	stainless steel type 316
Seal	neoprene, ASTM d-2000
Bearing bars	ultra high molecular weight polyethylene ASTM d4020

## 2.08 MANUAL PEDESTAL OPERATORS

### A. GENERAL

Manual pedestal operators with cranks shall be furnished by the gate manufacturer as listed in the sluice gate schedule, paragraph 1.01.A. The manual pedestal operators shall be from the gate supplier or approved operator manufacturer, constructed from 316L stainless steel with a position indicator.

### B. BEARINGS AND GEARS

All bearings and gears shall be totally enclosed in a weather tight housing. The pinion shaft of crank-operated mechanisms shall be constructed of stainless steel and supported by roller or needle bearings.

### C. DESIGN

Each manual operator shall be designed to operate the gate under the maximum specified seating and unseating heads by using a maximum effort of 40 lbs (178 N) on the crank or handwheel and shall be able to withstand, without damage, an effort of 80 lbs (356 N).

### D. CRANKS

Cranks shall be removable and fitted with a corrosion resistant rotating handle. The maximum crank radius shall be 15 inches (381 mm) and the maximum handwheel diameter shall be 24 inches (610 mm).

## 2.84 DOWNWARD OPENING WEIR GATE (NOT USED)

## 2.09 STOP LOGS (NOT USED)

## PART THREE – GENERAL EXECUTION

### 3.01 INSTALLATION

All sluice gates shall be handled and installed in accordance with the manufacturer's instructions.

A. Thoroughly clean and remove all shipping materials prior to setting.

B. Install Gates per Manufacturer's recommendations.

C. Operate all gates from fully opened to totally closed.

### 3.02 SHOP TESTS

The gate shall be adjusted so that the seats are slightly compressed and there is no clearance at any point between frame and cover seating surfaces.

### 3.03 FIELD TESTS

Following the completion of each gate installation, the gates shall be operated through at least two complete open/close cycles. If an electric or hydraulic operator is used, limit switches shall be adjusted following the manufacturer's instructions.

- A. Qualified Factory representative shall provide (8) hours of training for facility employees. (REQUIRED)
- B. Representative shall complete a Certification of Proper Installation and provide copies to the Owner, Engineer, Contractor and Manufacturing Facility. (REQUIRED)

Gates shall be checked for leakage by the contractor in the presence of a District representative.

END OF SECTION



# SMARTGUARD®



## Ultimate Protection

The SmartGuard Collector Monitoring System identifies flight misalignment and sprocket motion loss to prevent system damage.



## Advantages:



### Prevents system failure

Protects against costly system failures that can be caused by irregular sludge loadings, flight misalignment, concrete movement, and foreign objects dropped into the clarifier.



### Early detection

Identifies system overloads that cannot be detected by traditional shear-pin or torque monitoring devices.



### Strategic placement

Precise positioning, at the head shaft for flight misalignment and at the lower-rear idlers for motion monitoring, provides system protection against equipment damage.

 **BRENTWOOD®**



## SmartGuard® Collector Monitoring System

The SmartGuard Collector Monitoring System for rectangular clarifiers identifies collector system overloads that cannot be detected by traditional shear-pin or torque monitoring devices. SmartGuard's strategic placement allows it to monitor regular motion, warn of potential danger, and shut down the system before damage can occur. This cost-effective, early detection approach helps water and wastewater plants to avoid costly system failures by controlling up to four mechanisms, including longitudinal collectors, cross collectors, scum pipes, and screw conveyors.



### FLIGHT MONITORING

As flights pass over the head shaft, cams are tripped, sending signals to the control panel for data monitoring.



### SPROCKET MOTION MONITORING

Sensors placed at the lower-rear idlers monitor sprocket motion and automatically shut down the system if motion loss occurs.

### CONTROL PANEL

Monitor up to four mechanisms with the optional control panel that works as a total control solution.



## Why Brentwood?

At Brentwood, it's our job to make sure that you get maximum treatment performance out of the fully integrated clarification systems we supply. With a comprehensive knowledge of water and wastewater treatment processes and an in-depth understanding of diverse applications, Brentwood's process engineers are capable of evaluating your plant's current process, effluent limits, and site-specific goals to provide products and solutions for efficient clarification.



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## THE HISTORY OF FLIGHT MONITORING SYSTEMS

### Introduction

Polychem Systems has over 20,000 non-metallic chain and flight collectors in operation throughout the world and the vast majority of these do not have any form of monitoring system installed to monitor operation. Traditional safety devices consist of a shear pin sprocket device, with a limit switch, that is designed to protect the drive system in the event that when a load or torque is seen that exceeds the working load of the drive chain, the shear pin will break, the limit switch will be activated and the drive motor is shut down. This process will typically protect the drive chain and drive motor from failure. In the event that the shear pin breaks, the clarifier is drained, the cause of the overload is established and corrected, a new shear pin is installed and the collector is placed back in operation.

Alternate mechanical or electrical torque monitoring systems can be supplied at additional cost that, in the event of an overload, can be re-set after correcting the cause of the overload. These systems do not require replacement of the shear pin but are typically not cost effective.

### Collector Failure without Shear Pin Failure

There are rare occasions when a collector failure occurs and the shear pin does not break or breaks only after the collector has "crashed" – typically resulting in breaking of collector chain attachment links. This is usually the result of the collector flights getting caught up on the non-drive side of the clarifier and the torque overload not being immediately presented to the shear pin or other torque monitoring device. Foreign objects dropped into the clarifier, concrete movement, irregular sludge loading or excessive flight misalignment can all be potential causes of flights getting caught up. Other causes of the shear pin not failing even if the torque overload is presented at the shear pin are incorrect sizing or incorrect installation of the shear pin.

### Traditional Flight Monitoring Systems

In an attempt to eliminate collector systems "crashes", a number of different systems have been tried to monitor that flights are traveling parallel and to shut down the collector system if the collector flight is misaligned, or no flight is seen after a certain time limit. More recently one system has been introduced to shut down the collector system if the "notched" collector chain tries to jump a sprocket tooth. These systems have usually been disconnected due to nuisance failures caused by: sensor failure or limited sensor range; target failure or corrosion; field installation or monitoring location errors and excessive tooth jumping of "notched" collector chain.

Where flight monitoring is used to shut down the collector system, if a flight is not seen within a set time period, considerable time can elapse and considerable failure can occur before this situation is monitored, taking into consideration wide flight spacing and slow collector speed. In addition, if flights are not evenly spaced, nuisance shut downs can occur.



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## INTRODUCING SMARTGUARD™ COLLECTOR MONITORING SYSTEM

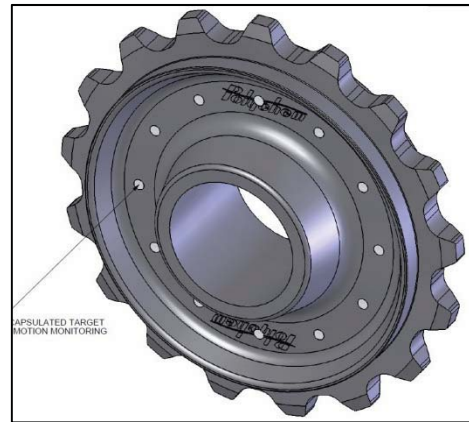
### SMARTGUARD™ Sprocket Motion Monitoring and Flight Misalignment Monitoring Systems



Polychem Systems has used its over 30 years of experience with chain and flight collectors to provide monitoring systems that reduce potential system “crashes”, nuisance failures and offer Customers a phased, cost effective approach that can be installed both in new installations and also as a retrofit to existing installations. Customers may select our **Sprocket Motion Monitoring (SMM)** System, our **Flight Misalignment Monitoring (FMM)** System, or both systems, providing two separate and distinct monitoring zones for full system protection.

### SMARTGUARD™ Sprocket Motion Monitoring Systems

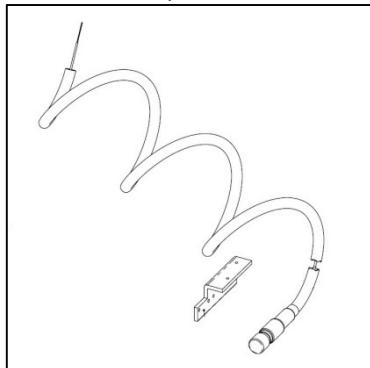
In order to detect flights being caught up by obstructions and not being detected as a torque overload by the shear pin or torque monitoring device,



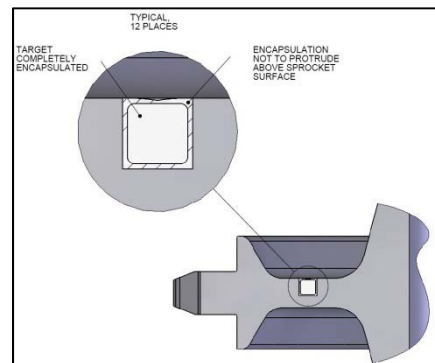
Idler Sprocket with imbedded magnets

Polychem Systems can provide an SMM system to check regular motion of both of the lower, rear idler sprockets.

The SMM only system consists of: two (2) Cast Nylon-6 rear idler sprockets with a series of magnets embedded in the outer web of the sprocket; two (2) factory assembled, potted and sealed magnetic sensors, suitable for continuous submersion at depths up to forty (40) feet (12m); fifty (50) feet (15m) of cable and watertight conduit; stainless steel or fiberglass mounting brackets and hardware per sensor to mount the sensors to Cast Nylon-6 stub shafts. Additional cable and conduit to complete the wiring run to the add-on control panel can be provided if required. For retro-fit installations, new rear idler sprockets with embedded magnets will be supplied and existing rear idler sprockets will be removed and remain the property of the Customer.



SMM Sensor with conduit & bracket



Close Up of Imbedded Magnet



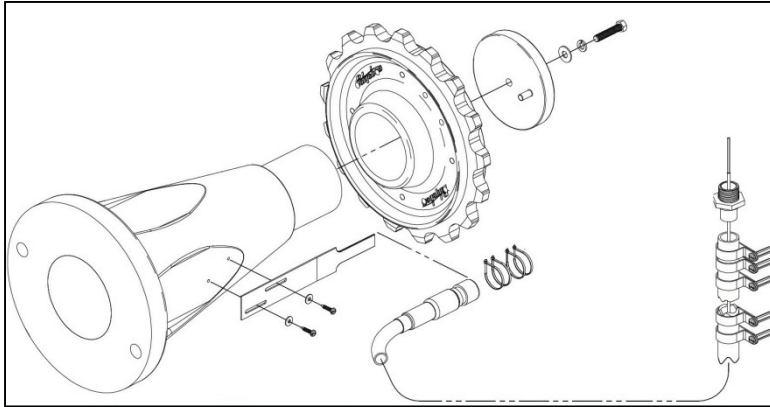
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SMM Assembly with Sprocket, Sensor, Stub Shaft and Mounting Bracket

As each lower rear idler rotates (caused by chain movement), the sensor detects the motion of the magnets as they pass the sensor, sending a signal to the control panel where the data is monitored by a PLC. If the timing between each magnet passing the sensor, on either side of the collector, is within preset time limits, the sprocket will be deemed in motion and the system will continue to run. If the time differential is beyond the preset time limit, the sprocket will be deemed not in motion, the collector system will shut down and the control panel will show that no motion has occurred.

Monitoring of sprocket motion is made at the lower rear idlers as, at this point, the collector chain is in tension and, under normal operation, sprocket motion will be uniform, providing defined, repeatable monitoring locations that eliminate nuisance failures caused by measuring motion along the upper return rail or other non-fixed monitoring locations.



The PLC is programmed to indicate that sprocket no motion has occurred equivalent to 60mm of chain travel. This sensitivity will allow the collector system to shut down prior to chain breakage, attachment link breakage or flight breakage.





## SMARTGUARD™ Sprocket Motion Monitoring Add On Control Panel (SMM only)



Simple SMM Add On Panel

Various add-on control panels can be supplied to interface with the Customer's existing local collector control panel capable of controlling up to five (5) separate mechanisms (for Sprocket Motion Monitoring Only). Operating multiple collectors with one (1) control panel reduces the average cost per system. The following describes a basic, add-on control panel to control one (1) single system:

- FRP or stainless steel lockable control box;
- power on/off switch
- loss of motion indicator light
- general fault indicator light
- control power supply;
- circuit breaker for 120V to 220V incoming power (120V to 220V supply by others);
- relay and PLC.

In addition, we will supply wiring, conduit and conduit seal from the control box to the adjacent local control panel and relay to be installed (by others) in the local control panel. Intrinsic Safety Barriers can be supplied, if required for additional cost.

Excluded from the scope of supply are: brackets or pedestals to support the control box, openings in the local control panel and all installation.



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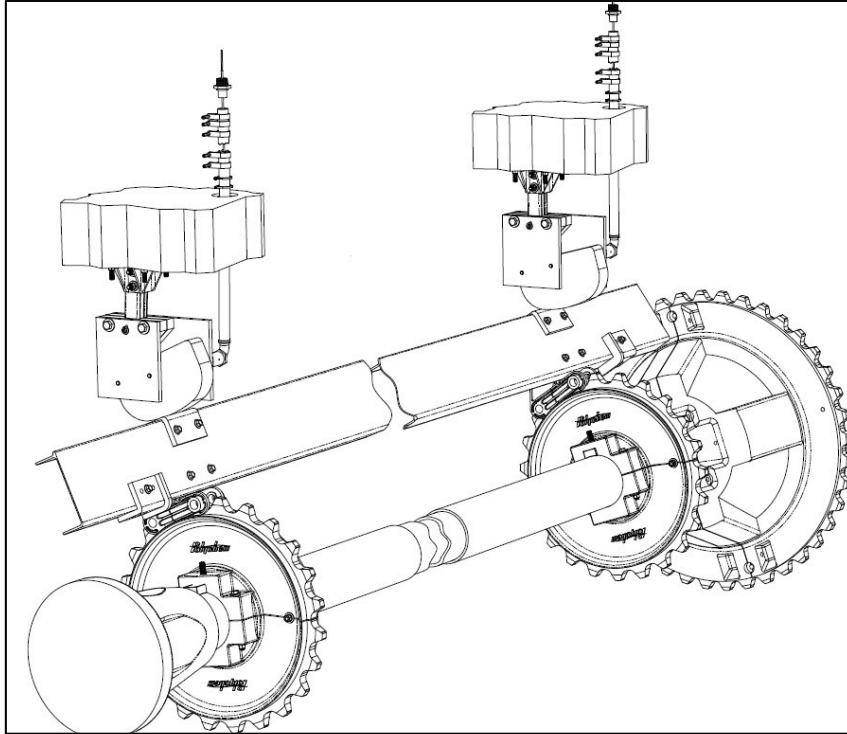
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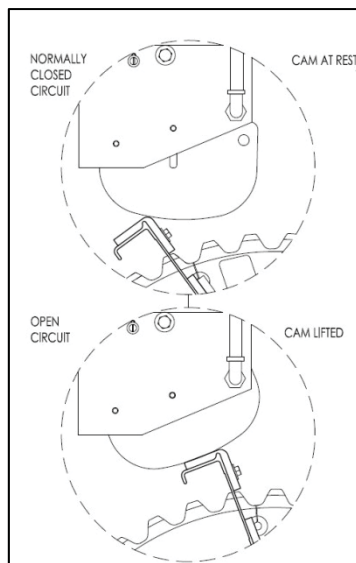


## SMARTGUARD™ Flight Misalignment Monitoring System



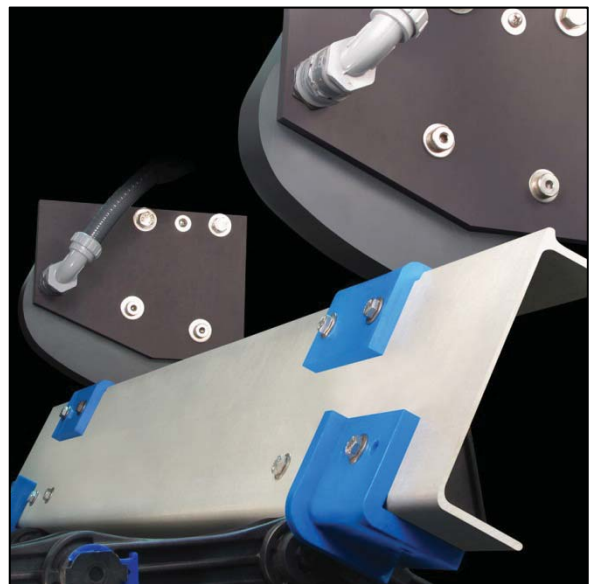
In order to detect flights being out of alignment which, if left uncorrected, can lead to a system malfunction and possible “crash”, Polychem Systems can provide a flight misalignment monitoring system to check that flights are aligned as they pass the head shaft sprocket location.

The FMM system consists of: two (2) Cast Nylon-6 cam block assemblies with encapsulated steel targets in the cam block; two (2) factory assembled, potted and sealed inductive sensors, suitable for continuous submersion at depths up to forty (40) feet (12m); fifteen (15) feet (5m) of cable and watertight conduit; non-metallic support legs and brackets with stainless steel hardware to mount the cam blocks to the underside



of the concrete deck. Where no concrete mounting deck is available, FRP channel support beam, end brackets and anchors can be supplied to fix to concrete walls as a base to mount support legs and brackets. Additional cable and conduit to complete the wiring run to the add-on control panel can be provided if required.

Measurement of flight alignment is made at



the head shaft sprocket location as at this point, the flight is engaged on a sprocket tooth, on both sides of the head shaft, providing a defined, repeatable, monitoring location that eliminates nuisance failures caused by measuring alignment along the upper return rail or other non-fixed flight locations. In addition, the use of a centralized non-metallic cam and sensor assembly that is pre-assembled and tested in the factory, eliminates the



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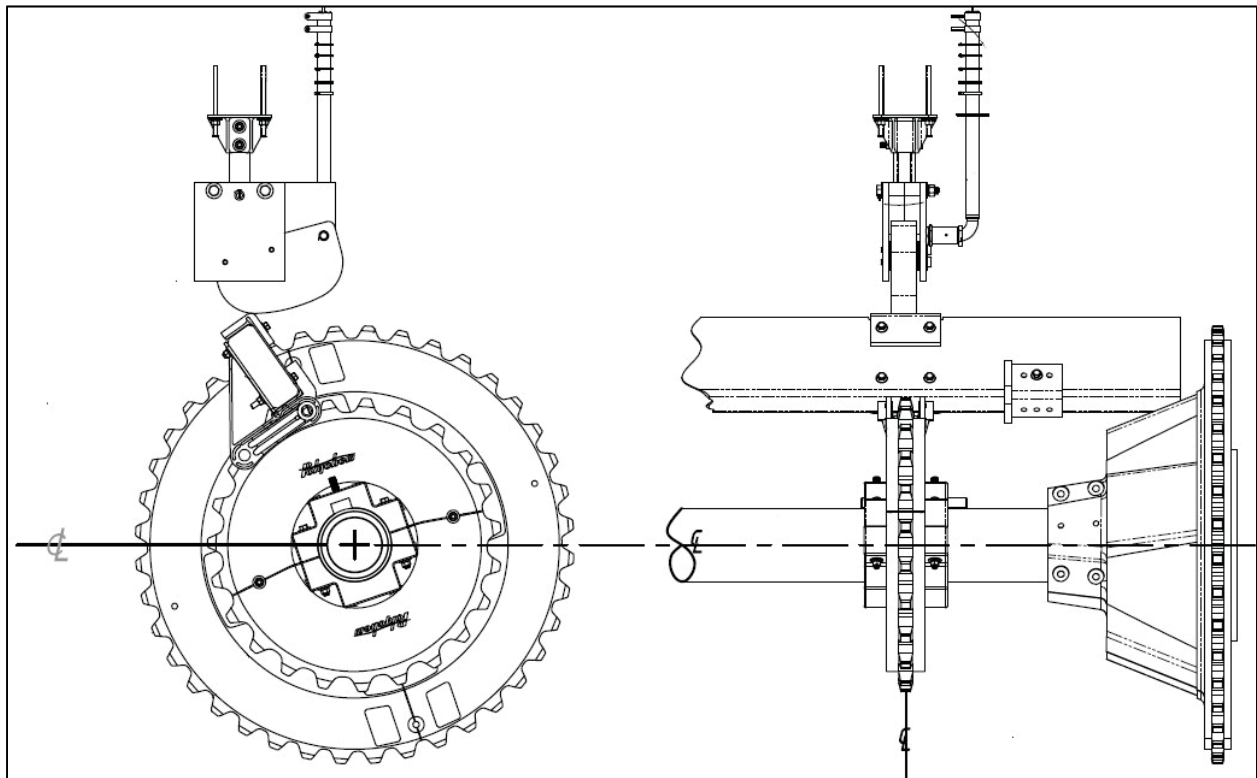


need for metallic flight mounted targets that are subject to corrosion, wear, debris collection and field installation errors that can reduce sensing range and again cause nuisance failures.

As each flight passes over the head shaft the non-metallic cam assemblies are tripped and the encapsulated target passes a sensor. The sensor detects the motion of the target and sends a signal to the control panel where the data is monitored by a PLC. If the timing is the same for both cams or is within a preset time limit, the flight will be deemed to be aligned and the system will continue to run. If the time differential is beyond the preset time limit, the flights will be deemed not aligned, the collector system will shut down and the control panel will show that misalignment has occurred.

The PLC is programmed to compensate for field installation discrepancies and will indicate that a flight is misaligned when compensated misalignment is measured greater than three (3) inches (75mm) of chain travel. In addition the PLC self-calibrates for flight speed and can be programmed to shut down the system if no flight is seen within a pre-determined time limit.

For submerged head shaft assemblies, weighted cam block assemblies can be supplied.



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### Flight Misalignment Monitoring Only Add On Control Panel

Various add-on control panels can be supplied to interface with the Customer's existing local collector control panel capable of controlling up to six (6) separate systems. Operating multiple collectors with one (1) control panel reduces the average cost per system. The following describes a basic, add-on control panel to control one (1) single system.



- FRP or stainless steel lockable control box
- power on/off switch
- misalignment indicator light
- general fault indicator light
- flight calibration button
- control power supply
- circuit breaker for 120V to 220V incoming power (120V to 220V supply by others);
- relay and PLC.

In addition, we will supply wiring, conduit and conduit seal from the control box to the adjacent local control panel and relay to be installed (by others) in the local control panel.

Intrinsic Safety Barriers can be supplied, if required for additional cost.

Excluded from the scope of supply are: brackets or pedestals to support the control box, openings in the local control panel and all installation.

### Sprocket Motion Monitoring and Flight Monitoring Control Panel (Add On and Full Control)

Where sprocket motion monitoring and flight monitoring are provided, one add-on control panel can be supplied to monitor both functions.

Various add-on control panels can be supplied to interface with the Customer's existing local collector control panel capable of controlling up to four (4) separate systems. Operating multiple collectors with one (1) control panel reduces the average cost per system. The following describes a basic, add-on control panel to control one (1) single system.



- FRP or stainless steel lockable control box
- power on/off switch
- misalignment indicator light
- loss of motion indicator light
- general fault indicator light
- flight calibration button
- control power supply
- circuit breaker for 120V to 220V incoming power (120V to 220V supply by others);
- relay and PLC.

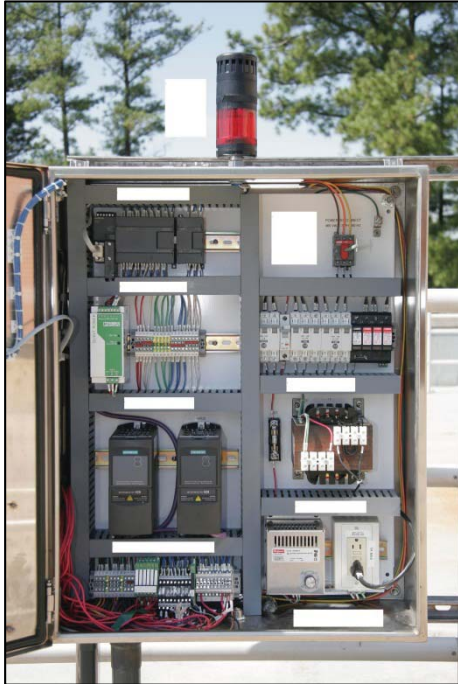
In addition, we will supply wiring, conduit and conduit seal from the control box to the adjacent local control panel and relay to be installed (by others) in the local control panel.

Intrinsic Safety Barriers can be supplied, if required for additional cost. HMI also available for an additional cost.

Excluded from the scope of supply are: brackets or pedestals to support the control box, openings in the local control panel and all installation.



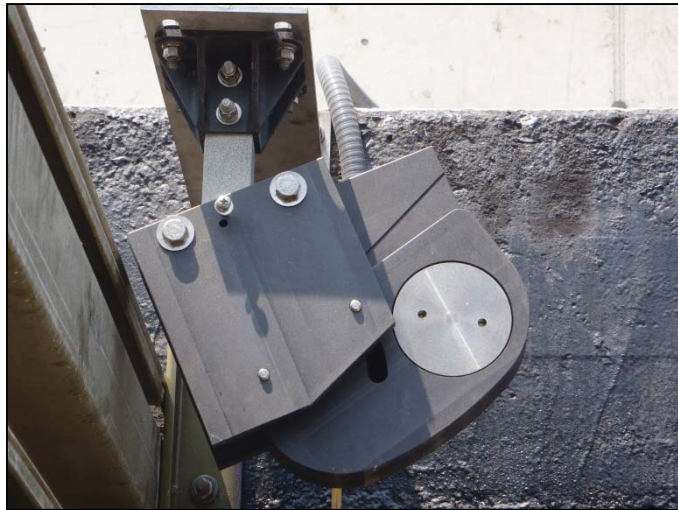
**Functional Description for Polychem SmartGuard Collector Monitoring Systems**  
**Flight Misalignment Monitoring System (FMM)**



**The flight misalignment assembly consists of the following:**

- 1) Mechanical assembly that contains a cam with an embedded target
- 2) NAMUR Style sensor in compliance with DIN 19234
- 3) A customer supplied NAMUR compliant sensor barrier

The cam is actuated by the flight wear shoe as the flight passes over the head shaft. The cam rests in the downward position and, when contacted by the flight wear shoe, is displaced upwards. When the cam is displaced by at least 0.25 inches (6mm), the embedded target goes out of the sensor's view and the signal state changes. The control system compares the timing of these state changes from two sensor assemblies placed appropriately over the head shaft to determine misalignment.



**The FMM when coupled with a control program design minimally takes into account the following considerations.**

- Incorporates collector system speed for flight misalignment calculations
- Compensates for changes in collector system speed for flight misalignment calculations
- Allows for variation in flight spacing
- Compensates for mechanical installation mounting variances on both flight misalignment cam assemblies
- Accounts for different flight positions based upon system startup and system shutdown
- Compensates for system harmonics or vibrations
- Provides noise isolation for sensor signals
- Provides a flight misalignment shutdown if there is more than 2 inches (50mm) of chain travel difference between the flight position as measured by the misalignment sensor assemblies

**Functional Description for Polychem SmartGuard Collector Monitoring Systems**  
**Sprocket Motion Monitoring System (SMM)**



The sprocket motion monitoring system consists of the following:

- 1) Sprocket that contains 12 equally spaced magnets
- 2) NAMUR Style sensor in compliance with DIN 19234
- 3) A customer supplied NAMUR compliant sensor barrier

As each sprocket rotates, an embedded sprocket magnet is detected as it passes the NAMUR sensor. During this rotation the embedded magnet in the sprocket passes the sensor field creating a signal state change. The control system compares the timing of these state changes to determine a change in speed.

The SMM when coupled with a control program design minimally takes into account the following considerations.

- Is able to be used with VFD (if required) or non VFD speed controlled collector systems
- Incorporates collector system speed for sprocket motion calculations
- Compensates for changes in collector system speed for sprocket motion calculations
- Allows for variation in system speed
- Compensates for multiple signals during starting and stopping transitions
- Compensates for system harmonics or vibrations
- Provides noise isolation for sensor signals
- Provides a motion monitoring fault should no sensor signal be received beyond 5 inches (125mm) of chain travel



# SAUSALITO-MARIN CITY SANITARY DISTRICT

## SECONDARY SEDIMENTATION TANKS IMPROVEMENTS PROJECT

### Addendum No. 1

The following shall modify the Contract Documents. The work shall be accomplished in accordance with such modifications. It is required that this addendum be attached to the Specifications. This addendum contains 2 pages, with no attachments.

**IMPORTANT: Receipt of this Addendum must be acknowledged in the space provided on the Bid Form when your bid is submitted. Failure to acknowledge receipt of this addendum may constitute grounds for rejection of the bid.**

#### Addendum Items:

- 1.1 Drawing 3:** The East side Disconnect is NEW, not (E). In addition, both East and West Disconnects shall be Stainless Steel and accommodate lock-out/tag-out.
- 1.2 Drawing 3:** Replace the conduit routing note at the top left ("75 LF To Control Room...") with;  
  
"Aprox 75 LF to Control Room. Mount (N) conduit on (E) unistrut where available. Core through wall (not shown) and route approx. 25' of run above suspended ceiling to electric gutter. See Sheet 12, SCADA Wiring."
- 1.3 Drawing 3:** Replace the note near center of Fixed Film Reactor No. 2 ("Extend (E) Wires and Install...") with;  
  
"Remove (E) Roof Toggle Switches, wires and conduit (Typ.of 4). Replace with (N) skew switches, wires and conduit (Typ.of 4) as specified."
- 1.4 Drawing 6, "Demolish (E) Steel Guide Rail" Detail:**
  - a)** Delete note to "Cut web of (E) Steel as Required". The entire train rail shall be removed.
  - b)** Revise depth of cut to be "2-5/8 Inch Min". The train rail is anticipated to be a 20 lb/yd ASCE Rail with a height of 2-5/8". Do not cut rebar located below the rail.

- 1.5 Drawing 6, "Patch Cut Out" Detail:** Revise rebar embedment note to be "2 Inch Min". The train rail is anticipated to be a 20 lb/yd ASCE Rail with a height of 2-5/8".
- 1.6 Drawing 6, Launderers:** In addition to adjustment slots located on the tank wall as shown in the center photo, adjustment slots are located near the tank ceiling on each vertical support as shown in the bottom photo (typical of 3 launderers per tank).
- 1.7 Drawing 9, "Signal Wire Conduit Layout - Schematic" Detail:** Clarification: Sensor wiring is limited to 50' which will not reach the control panels. Consequently junction boxes will be required where conduit runs to the control panel exceed 50'. Junction boxes must be located outside of the tank (not shown on schematic). Junction boxes may be eliminated if longer wiring can be custom ordered. Pricing for this potential change shall be addressed in a contract change order.
- 1.8 Drawing 9, "(E) End Fillet" Detail:** Correct this detail reference to be "1-9" to match the drawing sheet number.
- 1.9 Drawing 9, "(E) Side Curb" Detail:** Correct this detail reference to be "2-9" to match the drawing sheet number.
- 1.10 Drawing 10, Slide Gate Material:** Slide Gates shall be provided as follows in accordance with Section 15051:
- |         |                              |
|---------|------------------------------|
| Gate A1 | Stainless Steel              |
| Gate A2 | Stainless Steel              |
| Gate B  | Stainless Steel OR Composite |

**This Addendum No. 1 shall become part of the Contract and all provisions of the Contract shall apply thereto.**