

**Meeting Date:** 4/26/2016

**Report Type:** Consent

**Report ID:** 2016-00405

**Title: Contract: Sewer Sump Flow Meters Project**

**Location:** Districts 2, 3, 4, 5, 6 and 7

**Recommendation:** Pass a Resolution 1) approving the contract plans and specifications for the Sewer Sump Flow Meters project; 2) awarding the contract to Caggiano General Engineering, Inc., for an amount not-to-exceed \$417,500; and 3) authorizing the City Manager or the City Manager's designee to transfer funds for this project.

**Contact:** Dan Sherry, Engineering & Water Resources Manager, (916) 808-1419; Brett Grant, Supervising Engineer, (916) 808-1413; James Yorita, Project Manager, (916) 808-1911, Department of Utilities

**Presenter:** None

**Department:** Department Of Utilities

**Division:** Cip Engineering

**Dept ID:** 14001321

**Attachments:**

1-Description/Analysis

2-Background

3-Location Map

4-Agreement

5-Resolution

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### **City Attorney Review**

Approved as to Form

Joe Robinson

4/15/2016 5:16:40 PM

### **Approvals/Acknowledgements**

Department Director or Designee: Bill Busath - 4/6/2016 4:09:24 PM

## Description/Analysis

**Issue Detail:** Staff recommends Council award a contract to Caggiano General Engineering, Inc., to install flow meters at Sewer Sumps 3, 29, 32, 48, 53, 81, 84, 120, 122, 126, 127, and 131. The flow meters will enable the Department of Utilities (DOU) to collect accurate flow data and determine the efficiency of pumps.

**Policy Considerations:** This action is in conformance with City Code Chapter 3.60 Articles I and III, which provide that City Council may award competitively bid contracts to the lowest responsible bidder. This work is consistent with the criteria set forth in the DOU's Capital Improvement Programming Guide.

**Economic Impacts:** This project is expected to create 1.67 total jobs (0.96 direct jobs and 0.71 jobs through indirect and induced activities) and create \$257,779 in total economic output (\$162,480 of direct output and another \$95,299 of output through indirect and induced activities).

*The indicated economic impacts are estimates calculated using a calculation tool developed by the Center for Strategic Economic Research (CSER). CSER utilized the IMPLAN input-output model (2009 coefficients) to quantify the economic impacts of a hypothetical \$1 million of spending in various construction categories within the City of Sacramento in an average one-year period. Actual impacts could differ significantly from the estimates and neither the City of Sacramento nor CSER shall be held responsible for consequences resulting from such differences.*

**Environmental Considerations:** The Community Development Department, Environmental Planning Services Division reviewed the proposed project and determined that it is exempt from review under the California Environmental Quality Act (CEQA) under Section 15301 of the CEQA Guidelines. The project consists of the operation, maintenance, and minor alteration of existing utility systems (sewer sumps) and mechanical equipment involving negligible or no expansion of use by installing sewer sump flow meters at existing sump locations. The project will not result in a significant environmental impact.

**Sustainability:** The project is consistent with the City's Sustainability Master Plan and sustainability targets as it will measure flows in order to help master planning to reduce inflow and infiltration into the sewer system.

**Commission/Committee Action:** Not Applicable.

**Rationale for Recommendation:** The project was formally advertised on February 26, 2016 to solicit public bids. On March 23, 2016, the City Clerk opened 8 bids. Staff recommends award of the contract to Caggiano General Engineering, Inc., the lowest responsive and responsible bidder.

The bids are summarized below:

<b>Contractor</b>	<b>Bid Amount</b>
Caggiano General Engineering, Inc.	\$417,500.00
Clyde G. Steagall, Inc.	\$445,439.00
RTC Construction Management, Inc.	\$480,153.90
Richard A Soraco Jr.	\$551,289.00
American Construction Engineers	\$600,000.00
Division 5-15, A California Corporation	\$630,515.00
Koch & Koch, Inc.	\$702,200.00
Navajo Pipelines	\$728,050.00

The engineer's construction estimate was \$450,000.

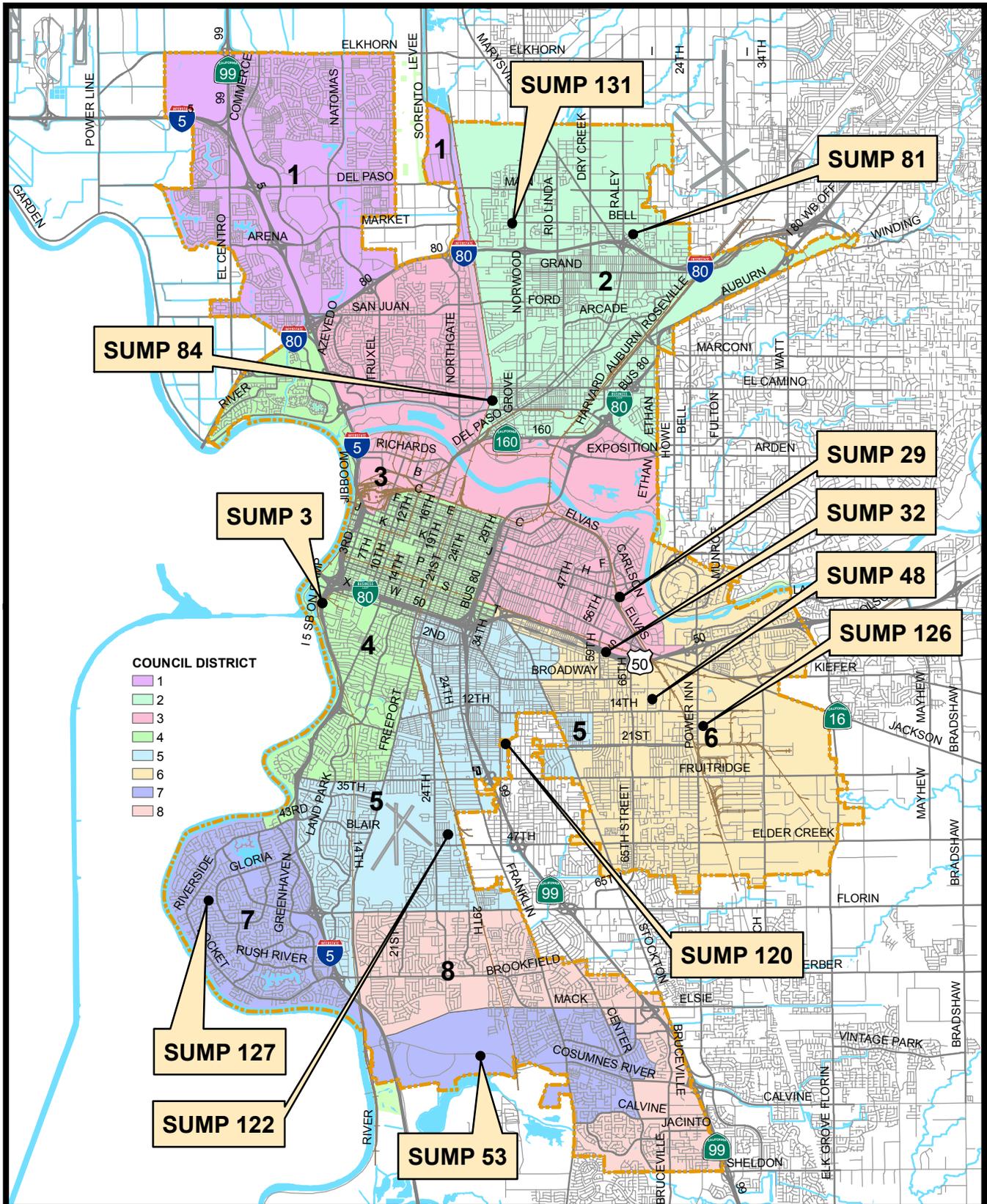
**Financial Considerations:** The total estimated project cost to complete the Sewer Sump Flow Meter project (X14130400) is \$548,000. To date \$60,119 has been expended, and the project has a \$416,872 available budget. Another \$71,009 is needed to complete the project. Staff recommends a transfer of \$71,009 from the Base CIP Contingency Wastewater Program, Project No.X14000500 (Wastewater Fund, Fund 6006). Sufficient funds exist in the Base CIP Contingency Wastewater Program to support this recommended transfer.

**Local Business Enterprise (LBE):** Caggiano General Engineering, Inc. is not an LBE, but has partnered with two LBE's (HD Supply Waterworks Ltd., GR Trucking/Crete Crush) to meet the minimum LBE participation requirement for this contract.

## **Background**

This project consists of installing 12 sewer sump flow meters, 8 of them will be installed into new manholes/vaults and the remaining 4 will be installed into existing pits/vaults. The meters will allow the City to collect accurate data on pump efficiency and flow rates. The data will help master planning to reduce the amount of inflow and infiltration into the sewer system. The City will be able to monitor the efficiency of the pumps and determine if they require maintenance or need to be replaced. The City does not currently have any means to accurately measure sewer flows.

# City of Sacramento Sewer Sump Flowmeter (X14130401)



ENGINEERING SERVICES DIVISION

CONTRACT DOCUMENTS  
FOR  
**SEWER SUMP FLOW METERS**

PN: X14130401

B16141321020

Engineer's Estimate: \$450,000

Non-Mandatory Pre-Bid Site Visit: Friday, March 4<sup>th</sup> @ 9:00 AM  
Starting Location: Sump 32, 6201 S Street & 61<sup>st</sup> Street - NW Corner, Sacramento  
95817 (Google GPS Coordinates 38.552777,-121.433774)

For Pre-Bid Information Call:

No Separate Plans

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Bill Miller  
Senior Engineer  
(916) 808-1705

Bids to be received before 2:00 PM  
**March 16, 2016**  
City Hall, Office of the City Clerk  
915 I Street, 5<sup>th</sup> Floor, Public Counter  
Sacramento, CA 95814

**LBE PROGRAM PARTICIPATION**

This public project has a required minimum LBE participation level of 5.0 percent. For information on meeting the City of Sacramento's Local Business Enterprise (LBE) project goals, please contact City Procurement at (916) 808-6240, or visit the City of Sacramento's web site at:

<http://www.cityofsacramento.org/Economic-Development/Grow-Here/Small-Business/LBE>

# SEWER SUMP FLOW METERS

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# NOTICE TO CONTRACTORS

## CITY OF SACRAMENTO

Sealed Proposals will be received by the City Clerk of the City of Sacramento at the Office of the City Clerk, City Hall, located at 915 I Street, 5th Floor, Public Counter, up to the hour of 2:00 p.m. on February 10, 2016. Proposals will then be opened and read as soon thereafter as business allows, in the Hearing Room, 2nd Floor Room, in Historic City Hall, for:

### **SEWER SUMP FLOW METERS (PN: X14130401) (B16141321020)**

Construction involves installation of magnetic flowmeters at 12 existing City sewage lift station (Sumps). Install the flowmeters in new meter vault manholes installed this contract or in existing vaults where applicable. Work included, but not limited to, temporary bypass pumping, pipe modification, installation of electrical conduit and wiring (meter/remote transmitter and 24vdc power with din rail mounted fuse to match City standard), mount the remote transmitter in the control cabinet or building where applicable and energizing the meters. Subsequent to this contract, City staff will connect the flow meter output signal wires to the City's SCADA system.

The project requires at least 5.0 percent participation by Local Business Enterprise (LBE) firms.

Contract Documents are available for download from PlanetBids via the following website address:

<http://www.planetbids.com/portal/portal.cfm?CompanyID=15300#>

**On Friday, January 22nd, non-mandatory pre-bid site visit** will occur at 9:00 AM at **Sump 32** (61<sup>st</sup> Street and S Street Sacramento). City staff will be available for questions and to open gates, manholes, and electrical cabinets for interested potential bidders. It will depend upon interest and the number of questions received, but the duration at each site is anticipated to be no more than a half-hour. Attendees must provide their own transportation.

Signed proposals shall be submitted on the contract document proposal form in a sealed envelope marked:

### **PROPOSAL FOR SEWER SUMP FLOW METERS (PN: X14130401) (B16141321020)**

Proposals received and work performed thereunder shall comply with the requirements of Chapter 3.60 of the Sacramento City Code. Each Bid Proposal shall be accompanied by bid security of at least 10% of the sum the Bid Proposal. The City reserves the right to reject proposals or to waive any error or omission in any Bid Proposal received.

The contractor and all subcontractors shall comply with the rates of wages currently established by the Director of Industrial Relations under provisions of Sections 1773 of the Labor Code of the State of California, a copy of which is on file in the office of the City Clerk and available to any interested party upon request.

The City of Sacramento has a Labor Compliance Program, and **electronic submission of Labor Compliance Reports is required**. The contractor and every lower-tier subcontractor shall submit certified payrolls and labor compliance documentation electronically in the manner prescribed by the City of Sacramento. Each contractor and subcontractor shall receive a unique Log-On identification and password to access the City's reporting system. Use of the City's system may entail additional contractor time for data entry of weekly payroll information including employee identification, labor classification, total hours worked, hours worked on this project, and wage and benefit rates paid, etc. All questions regarding the City's Labor Compliance Program should be directed to the Department's contracts staff or the Labor Compliance Officer at (916) 808-4011.

### **Department of Industrial Relations Registration and Reporting Requirements (SB 854)**

Labor Code Section 1725.5 (enacted by SB 854) requires all contractors bidding on this contract, all subcontractors listed in a bid for this contract, and any contractor or subcontractor performing any work under this contract, to be currently registered with the California Department of Industrial Relations (DIR), as specified in Labor Code Section 1725.5. Labor Code Section 1771.1 (enacted by SB 854) provides that a contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal (subject to the requirements of Section 4104 of the Public Contract Code), or engage in the performance of any contract for public work, unless currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5. Every bidding contractor shall list the contractor's current DIR registration number, and the current DIR registration number of all listed subcontractors, on the Subcontractor and Local Business Enterprise (LBE) Participation Verification Form included in the contractor's bid.

Pursuant to Labor Code Section 1771.1(b): (1) any bid received from a contractor that is not currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5 **shall be rejected as non-responsive**;

## NOTICE TO CONTRACTORS

and (2) any bid listing one or more subcontractors on the bidder's Subcontractor and Local Business Enterprise (LBE) Participation Verification Form that are not currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5, **shall be rejected as non-responsive**, unless the listing was an inadvertent error and any of the conditions specified in Labor Code Section 1771.1(c) apply.

This contract is subject to compliance monitoring and enforcement by the DIR. Per California Labor Code Section 1771.4 (enacted by SB 854), the contractor and all subcontractors shall furnish electronic payroll records directly to the Labor Commissioner (in addition to submittals made to City staff via the City's electronic system).

A Fact Sheet summarizing the provisions of SB 854 is included in the Contract Documents following this Notice solely for informational purposes, and does not in any way affect the contractor's and subcontractors' obligations to comply in all respects with the provisions of SB 854, including the provisions referenced above, as well as all other applicable laws and regulations. The contractor shall disseminate these provisions to every lower-tier subcontractor and vendor required to provide labor compliance documentation.

Pursuant to Sacramento City Code Section 3.60.190, all contractors and subcontractors shall comply with Section 1777.5 et seq., of the California Labor Code governing the employment of apprentices.

Pursuant to Sacramento City Code Section 3.60.250 and Public Contract Code Section 22300, any contract awarded pursuant to this Notice to Contractors shall contain a provision permitting the substitution of securities for monies withheld to ensure performance under the contract, in accordance with the requirements and form specified by the City.

Bid protests must be filled and maintained in accordance with the provisions of Sections 3.60.460 through 3.60.560 of the Sacramento City Code. Bid protests that do not comply with Sections 3.60.460 through 3.60.560 of the Sacramento City Code shall be invalid and shall not be considered. A bid protest fee of \$750.00 is required at the time of filing. The term "bid protest" includes any bid protest that (1) claims that one or more bidders on this contract should be disqualified or rejected for any reason, (2) contests a City staff recommendation to award this contract to a particular bidder, or (3) contests a City staff recommendation to disqualify or reject one or more bidders on this contract. A copy of Sections 3.60.460 through 3.60.560 of the Sacramento City Code may be obtained from the Project Manager, or from the City Clerk, located at 915 I Street, 5<sup>th</sup> Floor, Sacramento, CA 95814.

Contact information for the City's manager of this project is:

Bill Miller, Department of Utilities, Engineering & Water Resource Division  
1395 35<sup>th</sup> Avenue, Sacramento, CA 95822  
Phone: (916) 808-1705 / Fax: (916) 808-1497/E-mail: [BMiller@cityofsacramento.org](mailto:BMiller@cityofsacramento.org)

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# NEW PUBLIC WORKS CONTRACTOR REGISTRATION LAW [SB 854]

## FACT SHEET

SB 854, a budget trailer bill that was signed into law on June 20, 2014, and became effective immediately, made several significant changes to laws pertaining to the administration and enforcement of prevailing wage requirements by the Department of Industrial Relations (DIR). Among other things, SB 854 established a new public works contractor registration program to replace prior Compliance Monitoring Unit (CMU) and Labor Compliance Program (LCP) requirements for bond-funded and other specified public works projects. The fees collected through this new program will be used to fund all of DIR's public works activities, including compliance monitoring and enforcement, the determination of prevailing wage rates, public works coverage determinations, and hearing enforcement appeals.

### Essentials of public works contractor registration program:

- Contractors will be subject to a registration and annual renewal fee that has been set initially at \$300. The fee is non-refundable and applies to all contractors and subcontractors who intend to bid or perform work on public works projects (as defined under the Labor Code).
- Contractors will apply and pay the fee online and must meet minimum qualifications to be registered as eligible to bid and work on public works projects:
  - Must have workers' compensation coverage for any employees and only use subcontractors who are registered public works contractors.
  - Must have Contractors State License Board license if applicable to trade.
  - Must have no delinquent unpaid wage or penalty assessments owed to any employee or enforcement agency.
  - Must not be under federal or state debarment.
  - Must not be in prior violation of this registration requirement once it becomes effective. However, for the first violation in a 12 month period, a contractor may still qualify for registration by paying an additional penalty.
- The registration fee is not related to any project. It is more like a license that enables the registrant to bid on and perform public works.

- DIR will post a list of registered contractors and subcontractors on its website so that awarding bodies and contractors will be able to comply with requirements to only use registered contractors and subcontractors.
- Various protections are built in so that
  - A contractor won't be in violation for working on a private job that is later determined to be public work;
  - The inadvertent listing of an unregistered subcontractor on a bid won't necessarily invalidate that bid;
  - A contract with an unregistered contractor or subcontractor is subject to cancellation but is not void as to past work;
  - An unregistered contractor or subcontractor can be replaced with one who is registered;
  - A contractor whose registration lapses will have a 90 day grace period within which to pay a late fee and renew.
- Registrations will begin after July 1, 2014, once the registration system is ready to go online. The preferred method of payment will be by credit card.
- The requirement to list only registered contractors and subcontractors on bids becomes effective on March 1, 2015. The requirement to only use registered contractors and subcontractors on public works projects applies to all projects awarded on or after April 1, 2015.

Essentials of Public Works Enforcement Fund:

All contractor registration fees will go into the State Public Works Enforcement Fund and be used to fund the following items --

- administration of contractor registration requirement
- all DIR costs for administering and enforcing public works laws
- Labor Commissioner's enforcement of other Labor Code violations on monitored public works projects.

DIR will no longer charge awarding bodies for prevailing wage compliance monitoring and enforcement by the CMU. (*Note: DIR will continue to bill and collect fees from awarding agencies for CMU services provided through June 20, 2014.*)

Related changes in DIR's administration and enforcement of public works requirements:

- Requirements to use CMU or specified alternative (labor compliance program or project labor agreement) for state bond-funded and other specified projects have been eliminated and replaced by requirements that apply to all public works projects (as defined under the Labor Code).
- Awarding bodies are *now* required to submit PWC-100 (contract award notice) for all public works projects. (*This requirement previously applied to about 90% of all projects.*)
- Contractors and subcontractors on *all* public works projects will be required to submit certified payroll records (CPRs) to the Labor Commissioner unless excused from this requirement.
  - This requirement will be phased in as follows:
    - Applies immediately to public works projects that have already been under CMU monitoring, *i.e.* contractors on ongoing projects that have been submitting CPRs to the CMU will continue doing so
    - Will apply to any new projects awarded on or after April 1, 2015
    - May apply to other projects as determined by Labor Commissioner
    - Will apply to all public works projects, new or ongoing, on and after January 1, 2016
  - The Labor Commissioner may make exception to this requirement for
    - Projects covered by qualifying project labor agreement
    - Projects undertaken by one of four remaining awarding bodies with legacy LCPs (Caltrans, City of Los Angeles, County of Sacramento, and Los Angeles Unified School District), so long as those LCPs remain approved by DIR
  - CPRs will be furnished online (as is done currently for CMU). DIR intends to continue making improvements to this process, including creating a means for general contractors to have online access to the CPRs submitted by their subcontractors.
- Requirements for awarding bodies to adopt and enforce a DIR-approved LCP are now limited to: (1) public works projects awarded prior to January 1, 2012 that were under a preexisting LCP requirement; and (2) projects funded in whole or in part by Proposition 84.

## LBE INFORMATION

The City of Sacramento's Local Business Development program establishes an annual local business enterprise (LBE) participation goal for City contracts, and authorizes City departments to require minimum LBE participation levels in individual contracts. Under City Code section 3.60.270, all bidding contractors must meet or exceed the minimum LBE participation requirement specified in the contract's bid specifications to qualify as a responsive bidder.

For information on meeting the City of Sacramento's Local Business Enterprise (LBE) project goals, please contact City Procurement at (916) 808-6240, or visit the City of Sacramento's web site at: <http://www.cityofsacramento.org/Economic-Development/Grow-Here/Small-Business/LBE>

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THE FOLLOWING DOCUMENTS  
ARE TO BE COMPLETED AND  
SUBMITTED WITH THE BID PACKAGE

Contractor's Name: Caggiano General Engineering, Inc.  
(Please print)

CITY OF SACRAMENTO  
SEALED PROPOSAL

Sealed Proposals will be received not later than 2:00 PM on **March 23, 2016**, at the Office of the City Clerk, New City Hall, at 915 I Street, 5<sup>th</sup> Floor, Public Counter, Sacramento, California 95814, and will be opened as soon thereafter as business allows. PROPOSALS MUST BE SIGNED BY BIDDERS IN ORDER TO BE RESPONSIVE.

TO THE HONORABLE CITY COUNCIL:

The undersigned hereby proposes and agrees to furnish any and all required labor, material, transportation, and services for the project named

**SEWER SUMP FLOW METERS**  
**(PN: X14130401) (B16141321020)**

in the City and County of Sacramento, California.

The work is to be performed in strict conformity with the Plans, the City of Sacramento Standard Specifications for Public Construction, and these Contract Documents, all as on file in the Office of the City Clerk, at the following unit prices:

Item No.	Description	Estimated Quantity	Unit	Unit Price
1	Sump 3	1	LS	\$ <u>35,000</u>
2	Sump 29	1	LS	\$ <u>30,000</u>
3	Sump 32	1	LS	\$ <u>40,000</u>
4	Sump 48	1	LS	\$ <u>29,500</u>
5	Sump 53	1	LS	\$ <u>38,000</u>
6	Sump 81	1	LS	\$ <u>32,000</u>
7	Sump 84	1	LS	\$ <u>33,000</u>
8	Sump 120	1	LS	\$ <u>38,000</u>
9	Sump 122	1	LS	\$ <u>38,000</u>
10	Sump 126	1	LS	\$ <u>36,000</u>
11	Sump 127	1	LS	\$ <u>35,000</u>
12	Sump 131	1	LS	\$ <u>33,000</u>

TOTAL BID: \$ 417,500

In determining the amount bid by each bidder, City shall disregard mathematical errors in addition, subtraction, multiplication and division that appear obvious on the face of the Proposal. When such a mathematical error appears on the Proposal, the City shall have the right to correct such error and to compute the total amount bid by said bidder on the basis of the corrected figure or figures. The sum of individual unit prices shall prevail over the total bid amount.

It is understood that this bid is based upon completion of the work within a period of **one hundred eighty (180) working days** commencing on the date specified in the Notice to Proceed. The amount of liquidated damages to be paid by the Contractor for failure to complete the work by the completion date (as extended, if applicable) shall be **Five hundred dollars (\$500.00) for each calendar day**, continuing to the time at which the work is completed. Such amount is the actual cash value agreed upon as the loss to the City resulting from the default of the Contractor.

This proposal shall not be withdrawn for the time periods specified in Section 3-2 of the City of Sacramento Standard Specifications for award of contract to respective low bidders. This proposal is submitted in accordance with Chapter 3.60 of the Sacramento City Code and Sections 1, 2, and 3 of the City of Sacramento Standard Specifications.

X14130401

Proposal, Page 1 of 2

(B)

# DRUG-FREE WORKPLACE POLICY AND AFFIDAVIT

BID MAY BE DECLARED NONRESPONSIVE IF THIS FORM (COMPLETED) IS NOT ATTACHED.  
Pursuant to City Council Resolution CC90-498 dated 6/26/90 the following is required.

The undersigned contractor certifies that it and all subcontractors performing under this contract will provide a drug-free workplace by:

1. Publishing a "Drug-Free Workplace" statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Establishing a Drug-Free Awareness Program to inform employees about:
  - a. The dangers of drug abuse in the workplace.
  - b. The contractor's policy of maintaining a drug-free workplace.
  - c. Any available drug counseling, rehabilitation, and employee assistance program.
  - d. The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.
3. Notify employees that as a condition of employment under this contract, employees will be expected to:
  - a. Abide by the terms of the statement.
  - b. Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace.
4. Making it a requirement that each employee to be engaged in the performance of the contract be given a copy on the "Drug-Free Workplace" statement.
5. Taking one of the following appropriate actions, within thirty (30) days of receiving notice from an employee or otherwise receiving such notice, that said employee has received a drug conviction for a violation occurring in the workplace:
  - a. Taking appropriate disciplinary action against such an employee, up to and including termination; or
  - b. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a federal, state, or local health, law enforcement or other appropriate agency.

\* I certify that no person employed by this company, corporation, or business has been convicted of any criminal drug statute violation on any job site or project where this company, corporation, or business was performing work within three years of the date of my signature below.

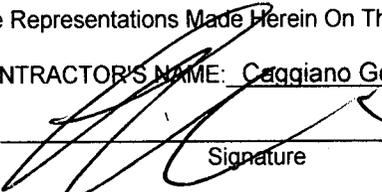
**EXCEPTION:**

Date	Violation Type If additional space is required use back of this form.	Place of Occurrence
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\*The above statement will also be incorporated as a part of each subcontract agreement for any and all subcontractors selected for performance on this project.

IN THE EVENT THIS COMPANY, CORPORATION, OR BUSINESS IS AWARDED THIS CONSTRUCTION CONTRACT, AS A RESULT OF THIS BID; THE CONTRACTOR WITH HIS/HER SIGNATURE REPRESENTS TO THE CITY THAT THE INFORMATION DISCLOSED IN THIS DOCUMENT IS COMPLETE AND ACCURATE. IT IS UNDERSTOOD AND AGREED THAT FALSE CERTIFICATION IS SUBJECT TO IMMEDIATE TERMINATION BY THE CITY.

The Representations Made Herein On This Document Are Made Under Penalty Of Perjury.

CONTRACTOR'S NAME: Caggiano General Engineering, Inc.  
BY:  \_\_\_\_\_ Date: 3-16-16  
Signature Title

**Effects of violations:** a. Suspension of payments under this contract. b. Suspension or termination of the contract. c. Suspension or debarment of the contractor from receiving any contract from the City of Sacramento for a period not to exceed five years.  
FM 681 7/10/9

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**City of SACRAMENTO**

**Subcontractor and Local Business Enterprise Participation Form  
For Public Projects over \$100,000 (use only base bid amount to estimate dollar value)  
THIS FORM MUST BE SUBMITTED WITH THE SEALED BID PROPOSAL**

To be eligible for award of this contract, the bidder shall list the business entities used to attain the 5% LBE requirement. Additionally, the bidder shall list all other subcontractors who perform work, render service, or provide materials in an amount in excess of one-half of 1 percent of the total bid amount. In the case of bids for the construction of streets and highways, including bridges, subcontractors whose subcontract value exceeds one-half of 1 percent of the total bid or ten thousand dollars (\$10,000), whichever is greater, shall be listed. Estimated dollar values shall be provided for all work / services listed. The failure to attain the 5% LBE participation or the inclusion of false information or the omission of required information will render the bid non-responsive.

Prime Contractor Name	Caggiano General Engineering, Inc.
Prime Contractor Address	3941 Park Drive, STE. 20-347 El Dorado Hills, CA 95762
(REQUIRED) Prime Contractor DIR Registration #	

Date	3/16/16
Bid Amount	\$ 417,500
Is Prime LBE?	Yes <input type="radio"/> No <input checked="" type="radio"/>

Business Name	Subcontractor DIR Registration # (subject to verification)	LBE?	Type of Work, Services, or Supplies to be provided to complete contract	Estimated Dollar Value of Work, Services or Supplies to be Performed of Provided
<b>Business Name:</b> HD Supply Waterworks Ltd. <b>License Number:</b> <b>Address:</b> 1122 Joellis Way <b>City, State, Zip:</b> Sacramento, CA 95815 <b>Contact Person:</b> Nancy Wunschel <b>Phone:</b> 916-564-3893		No	Construction Materials Supplier	\$ 173,000
<b>Business Name:</b> GR Trucking/Crete Crush <b>License Number:</b> CA 0317141 <b>Address:</b> 12584 White Rock Road <b>City, State, Zip:</b> Rancho Cordova, CA 95742 <b>Contact Person:</b> Danny Krpata <b>Phone:</b> 916-985-2700	1000008629	Yes	Trucking Service	\$ 20,500
<b>Business Name:</b> <b>License Number:</b> <b>Address:</b> <b>City, State, Zip:</b> <b>Contact Person:</b> <b>Phone:</b>		Yes		\$
<b>Business Name:</b> <b>License Number:</b> <b>Address:</b> <b>City, State, Zip:</b> <b>Contact Person:</b> <b>Phone:</b>		No		

**COPY AND ATTACH ADDITIONAL SHEETS AS NECESSARY.**  
 I hereby certify that each subcontractor listed on this Subcontractor and LBE Participation Form has been notified that it has been listed and has consented in writing to its name being submitted for this contract. The Prime Contractor also certifies that it will notify each subcontractor listed on this Form in writing if the contract award is made to the Prime Contractor, and will make all documentation relevant to the subcontractor and LBE participation available to City of Sacramento upon request. The Prime Contractor further certifies that all of the information contained in this Form is true and correct and acknowledges that the City will rely on the accuracy of this information in awarding the contract.

**PRINCIPAL OF FIRM:**

	President	3-16-16
Signature	Title	Date

Form Revison: 3/9/15

## MINIMUM QUALIFICATIONS QUESTIONNAIRE

Sacramento City Code Section 3.60.020 authorizes the Sacramento City Council to adopt standard minimum qualifications for bidders on competitively bid public works construction projects, and requires, among other provisions, that a bidder meet such minimum qualifications at the time of bid opening in order to bid. On July 31, 2007, the City Council adopted Resolution No. 2007-574 establishing these standard minimum qualifications. Pursuant to City Code section 3.60.020, a bidder failing to meet these minimum qualifications at the time of bid opening shall not be considered a responsible bidder for purposes of bidding on the subject project.

All bidders must demonstrate compliance with the minimum qualifications established by Resolution No. 2007-574 by completing all of the questions contained in this questionnaire. Bidder responses shall be limited to those operating business units, offices, branches and/or subsidiary divisions of the bidder that will be involved with the performance of any project work if awarded the contract. If a bidder answers "yes" to any single question, fails to submit a fully completed questionnaire, or submits false information, this will result in a determination that the minimum qualifications are not met, and the bidder shall not be considered a qualified bidder for purposes of bidding on this contract. If two or more entities submit a bid on a contract as a Joint Venture, each entity within the Joint Venture must separately meet these minimum qualifications for the Joint Venture to be considered a qualified bidder.

The City of Sacramento ("City") shall make its determination on the basis of the submitted questionnaire, as well as any relevant information that is obtained from others or as a result of investigation by the City. While it is the intent of this questionnaire to assist the City in determining whether bidders possess the minimum qualifications necessary to submit bids on the City's competitively bid public works construction contracts, the fact that a bidder submits a questionnaire demonstrating that it meets these minimum qualifications shall not in any way limit or affect the City's ability to: (1) review other information contained in the bid submitted by the bidder, and additional relevant information, and determine whether the contractor is a responsive and/or responsible bidder; or (2) establish pre-qualification requirements for a specific contract or contracts.

By submitting this questionnaire, the bidder consents to the disclosure of its questionnaire answers: (i) to third parties for purposes of verification and investigation; (ii) in connection with any protest, challenge or appeal of any action taken by the City; and (iii) as required by any law or regulation, including without limitation the California Public Records Act (Calif. Gov't Code sections 6250 et seq.). Each questionnaire must be signed under penalty of perjury in the manner designated at the end of the form, by an individual who has the legal authority to bind the bidder submitting the questionnaire. If any information provided by a bidder becomes inaccurate, the bidder shall immediately notify the City and provide updated accurate information in writing, under penalty of perjury.

**NOTICE: For firms that maintain other operating business units, offices, branches and/or subsidiary divisions that will not be involved with the performance of any project work if the firm is awarded the contract, references hereafter to "your firm" shall mean only those operating business units, offices, branches and/or subsidiary divisions that will be involved with the performance of any project work.**

**All of the following questions regarding "your firm" refer to the firm (corporation, partnership or sole proprietor) submitting this questionnaire, as well as any firm(s) with which any of your firm's owners, officers, or partners are or have been associated as an owner, officer, partner or similar position within the last five years**

**The firm submitting this questionnaire shall not be considered a responsible bidder if the answer to any of these questions is "yes", or if the firm submits a questionnaire that is not fully completed or contains false information.**

**NOTE: For Questions 6 thru 8, and Questions 10 thru 14, if there is a pending administrative or court action challenging the assessment of liquidated damages on a government contract within the last five years, you need not include that contract in responding to these questions.**

1. Classification & Expiration Date(s) of California Contractor's License Number(s) held by firm:  
Class A Expires 8/31/2016

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2. Has a contractor's license held by your firm and/or any owner, officer or partner of your firm been revoked at any time in the last five years?  
 Yes  No
3. Within the last five years, has a surety firm completed a contract on your firm's behalf, or paid for completion of a contract to which your firm was a party, because your firm was considered to be in default or was terminated for cause by the project owner?  
 Yes  No
4. At the time of submitting this minimum qualifications questionnaire, 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 California Labor Code section 1777.1 (prevailing wage violations) or Labor Code section 1777.7 (apprenticeship violations)?  
 Yes  No
5. At any time during the last five years, has your firm, or any of its owners, officers or partners been convicted of a crime involving the awarding of a contract for a government construction project, or the bidding or performance of a government contract?  
 Yes  No
6. Answer either subsection A or B, as applicable:
  - A. Your firm has completed three or more government construction contracts in Sacramento County within the last five years: Within those five years, has your firm been assessed liquidated damages on three or more government construction contracts in Sacramento County for failure to complete contract work on time?  
 Yes  No  Not applicable

**OR**

  - B. Your firm has not completed at least three government construction contracts in Sacramento County within the last five years: Within the last three years, has your firm been assessed liquidated damages on three or more government construction contracts for failure to complete contract work on time?  
 Yes  No  Not applicable
7. In the last three years has your firm been debarred from bidding on, or completing, any government agency or public works construction contract for any reason?  
 Yes  No
8. Has CAL OSHA assessed a total of three or more penalties against your firm for any "serious" or "willful" violation occurring on construction projects performed in Sacramento County at any time within the last three years?  
 Yes  No

9. Answer either subsection A or B, as preferred:

A. In the last three years has your firm had a three year average Workers' Compensation experience modification rate exceeding 1.1?

Yes  No

**OR**

B. In the last three years has your firm had a three-year average incident rate for total lost workday cases exceeding 10?

**NOTE: Incident rates represent the number of lost workday cases per 100 full-time workers and is to be calculated as:  $(N/EH) \times 200,000$ , where**

**N = number of lost workday cases (as defined by the U.S. Dept. of Labor, Bureau of Labor Statistics)**

**EH = total hours worked by all employees during the calendar year**

**200,000 = base for 100 equivalent full-time working (working 40 hours per week, 50 weeks per year)**

Yes  No

10. In the past three years, has the federal EPA, Region IX or a California Air Quality Management District or Regional Water Quality Control Board assessed penalties three or more times, either against your firm, or against the project owner for a violation resulting in whole or in part from any action or omission by your firm on a project on which your firm was a contractor in Sacramento County?

Yes  No

11. In the past three years, has the federal EPA, Region IX or a California Air Quality Management District or Regional Water Quality Control Board assessed a single penalty of \$100,000 or more, either against your firm, or against the project owner for a violation resulting in whole or in part from any action or omission by your firm on a project on which your firm was the contractor in Sacramento County?

Yes  No

12. In the past three years, have civil penalties been assessed against your firm pursuant to California Labor Code 1777.7 for violation of California public works apprenticeship requirements, three or more times?

Yes  No

13. In the past three years, has a public agency in California withheld contract payments or assessed penalties against your firm for violation of public works prevailing wage requirements, three or more times?

Yes  No

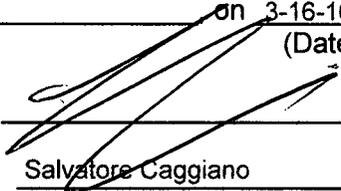
14. Has your firm been assessed penalties for violation of public works prevailing wage requirements in California, in an aggregate amount for the past three years of \$50,000 or more?

Yes  No

**VERIFICATION AND SIGNATURE**

I, the undersigned, certify and declare that I have read all the foregoing answers to this Minimum Qualifications Questionnaire, and know their contents. The matters stated in these Questionnaire answers are true of my own knowledge and belief, except as to those matters stated on information and belief, and as to those matters I believe them to be true. I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Signed at El Dorado Hills, CA on 3-16-16  
(Location) (Date)

Signature:  \_\_\_\_\_

Print name: Salvatore Caggiano

Title: President

NOTE: If two or more entities submit a bid on a contract as a Joint Venture, each entity in the Joint Venture must submit a separate Minimum Qualifications Questionnaire.

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## REQUIREMENTS OF THE NON-DISCRIMINATION IN EMPLOYEE BENEFITS CODE

### INTRODUCTION

The Sacramento Non-Discrimination In Employee Benefits Code (the "Ordinance"), codified as Sacramento City Code Chapter 3.54, prohibits City contractors from discriminating in the provision of employee benefits between employees with spouses and employees with domestic partners, and between the spouses and domestic partners of employees.

### APPLICATION

The provisions of the Ordinance apply to any contract or agreement (as defined below), between a Contractor and the City of Sacramento, in an amount exceeding \$100,000.00. The Ordinance applies to that portion of a contractor's operations that occur: (i) within the City of Sacramento; (ii) on real property outside the City of Sacramento if the property is owned by the City or if the City has a right to occupy the property; or (iii) at any location where a significant amount of work related to a City contract is being performed.

The Ordinance does not apply: to subcontractors or subcontracts of any Contractor or contractors; to transactions entered into pursuant to cooperative purchasing agreements approved by the Sacramento City Council; to legal contracts of other governmental jurisdictions or public agencies without separate competitive bidding by the City; where the requirements of the ordinance will violate or are inconsistent with the terms or conditions of a grant, subvention or agreement with a public agency or the instructions of an authorized representative of any such agency with respect to any such grant, subvention or agreement; to permits for excavation or street construction; or to agreements for the use of City right-of-way where a contracting utility has the power of eminent domain.

### DEFINITIONS

As set forth in the Ordinance, the following definitions apply:

"Contract" means an agreement for public works or improvements to be performed, or for goods or services to be purchased or grants to be provided, at the expense of the City or to be paid out of moneys deposited in the treasury or out of the trust money under the control or collected by the City. "Contract" also means a written agreement for the exclusive use ("exclusive use" means the right to use or occupy real property to the exclusion of others, other than the right reserved by the fee owner) or occupancy of real property for a term exceeding 29 days in any calendar year, whether by singular or cumulative instrument, (i) for the operation or use by others of real property owned or controlled by the City for the operation of a business, social, or other establishment or organization, including leases, concessions, franchises and easements, or (ii) for the City's use or occupancy of real property owned by others, including leases, concessions, franchises and easements.

"Contract" shall not include: a revocable at-will use or encroachment permit for the use of or encroachment on City property regardless of the ultimate duration of such permit; excavation, street construction or street use permits; agreements for the use of City right-of-way where a contracting utility has the power of eminent domain; or agreements governing the use of City property that constitute a public forum for activities that are primarily for the purpose of espousing or advocating causes or ideas and that are generally protected by the First Amendment to the United States Constitution or that are primarily recreational in nature.

"Contractor" means any person or persons, firm partnership or corporation, company, or combination thereof, that enters into a Contract with the City. "Contractor" does not include a public entity.

“Domestic Partner” means any person who has a currently registered domestic partnership with a governmental entity pursuant to state or local law authorizing the registration.

“Employee Benefits” means bereavement leave; disability, life, and other types of insurance; family medical leave; health benefits; membership or membership discounts; moving expenses; pension and retirement benefits; vacation; travel benefits; and any other benefit given to employees. “Employee benefits” shall not include benefits to the extent that the application of the requirements of this chapter to such benefits may be preempted by federal or state.

## **CONTRACTOR’S OBLIGATION TO PROVIDE THE CITY WITH DOCUMENTATION AND INFORMATION**

Contractor shall provide the City with documentation and information verifying its compliance with the requirements of the Ordinance within ten (10) days of receipt of a request from the City. Contractors shall keep accurate payroll records, showing, for each City Contract, the employee’s name, address, Social Security number, work classification, straight time pay rate, overtime pay rate, overtime hours worked, status and exemptions, and benefits for each day and pay period that the employee works on the City Contract. Each request for payroll records shall be accompanied by an affidavit to be completed and returned by the Contractor, as stated, attesting that the information contained in the payroll records is true and correct, and that the Contractor has complied with the requirements of the Ordinance. A violation of the Ordinance or noncompliance with the requirements of the Ordinance shall constitute a breach of contract.

## **EMPLOYER COMPLIANCE CERTIFICATE AND NOTICE REQUIREMENTS**

- (a) All contractors seeking a Contract subject to the Ordinance shall submit a completed Declaration of Compliance Form (attachment “A”), signed by an authorized representative, with each proposal, bid or application. The Declaration of Compliance shall be made a part of the executed contract, and will be made available for public inspection and copying during regular business hours.
- (b) The Contractor shall give each existing employee working directly on a City contract, and (at the time of hire), each new employee, a copy of the notification provided as attachment “B.”
- (c) Contractor shall post, in a place visible to all employees, a copy of the notice provided as attachment “C.”

\*\*\*\*\*

Attachment A  
**DECLARATION OF COMPLIANCE**  
**Equal Benefits Ordinance**

Caggiano General Engineering, Inc.

Name of Contractor

3941 Park Drive, STE. 20-347, El Dorado Hills, CA 95762

Address

The above named contractor ("Contractor") hereby declares and agrees as follows:

1. I have read and understand the Requirements of the Non-Discrimination In Employee Benefits Code (the "Requirements") provided to me by the City of Sacramento ("City") in connection with the City's request for proposals or other solicitations for the performance of services, or for the provision of commodities, under a City contract or agreement ("Contract").
2. As a condition of receiving the City Contract, I agree to fully comply with the Requirements, as well as any additional requirements that may be specified in the City's Non-Discrimination in Employee Benefits Code codified at Chapter 3.54 of the Sacramento City Code (the "Ordinance").
3. I understand, to the extent that such benefits are not preempted or prohibited by federal or state law, employee benefits covered by the Ordinance, are any of the following:
  - a. Bereavement Leave
  - b. Disability, life, and other types of insurance
  - c. Family medical leave
  - d. Health benefits
  - e. Membership or membership discounts
  - f. Moving expenses
  - g. Pension and retirement benefits
  - h. Vacation
  - i. Travel benefits
  - j. Any other benefit offered to employees

I agree that should I offer any of the above listed employee benefits, that I will offer those benefits, without discrimination between employees with spouses and employees with domestic partners, and without discrimination between the spouses and domestic partners of such employees.

4. I understand that I will not be considered to be discriminating in the provision or application of employee benefits under the following conditions or circumstances:
  - a. In the event that the actual cost of providing a benefit to a domestic partner or spouse, exceeds the cost of providing the same benefit to a spouse or domestic partner of an employee, I will not be required to provide the benefit, nor shall it be deemed discriminatory, if I require the employee to pay the monetary difference in order to provide the benefit to the domestic partner or to the spouse.
  - b. In the event I am unable to provide a certain benefit, despite taking reasonable measures to do so, if I provide the employee with a cash equivalent, I will not be deemed to be discriminating in the application of that benefit.
  - c. If I provide employee benefits neither to employee's spouses nor to employee's domestic partners.
  - d. If I provide employee benefits to employees on a basis unrelated to marital or domestic partner status.
  - e. If I submit, to the Program Coordinator, written evidence of making reasonable efforts to end discrimination in employee benefits by implementing policies which are to be enacted before the first effective date after the first open enrollment process following the date the Contract is executed with the City.  
  
I understand that any delay in the implementation of such policies may not exceed one (1) year from the date the Contract is executed with the City, and applies only to those employee benefits for which an open enrollment process is applicable.

- f. Until administrative steps can be taken to incorporate, in the infrastructure, nondiscrimination in employee benefits, the time allotted for these administrative steps will apply only to those employee benefits for which administrative steps are necessary and may not exceed three (3) months from the date the Contract is executed with the City.
- g. Until the expiration of a current collective bargaining agreement(s) where, in fact, employee benefits are governed by a collective bargaining agreement(s).
- h. I take all reasonable measures to end discrimination in employee benefits by either requesting the union(s) involved agree to reopen the agreement(s) in order for me to take whatever steps are necessary to end discrimination in employee benefits or by my ending discrimination in employee benefits without reopening the collective bargaining agreement(s).
- i. In the event I cannot end discrimination in employee benefits despite taking all reasonable measures to do so, I provide a cash equivalent to eligible employees for whom employee benefits (as listed previously), are not available.

Unless otherwise authorized in writing by the City Manager, I understand this cash equivalent must begin at the time the union(s) refuse to allow the collective bargaining agreement(s) to be reopened or no longer than three (3) months from the date the Contract is executed with the City.

- 5. I understand that failure to comply with the provisions of Section 4. (a) through 4. (i), above, will subject me to possible suspension and/or termination of this Contract for cause; repayment of any or all of the Contract amount disbursed by the City; debarment for future contracts until all penalties and restitution have been paid in full; deemed ineligible for future contracts for up to two (2) years; the imposition of a penalty, payable to the City, in the sum of \$50.00 for each employee, for each calendar day during which the employee was discriminated against in violation of the provisions of the Ordinance.
- 6. I understand and do hereby agree to provide each current employee and, within ten (10) days of hire, each new employee, of their rights under the Ordinance. I further agree to maintain a copy of each such letter provided, in an appropriate file for possible inspection by an authorized representative of the City. I also agree to prominently display a poster informing each employee of these rights.
- 7. I understand that I have the right to request an exemption to the benefit provisions of the Ordinance when such a request is submitted to the Procurement Services Division, in writing with sufficient justification for resolution, prior to contract award.

I further understand that the City may request a waiver or exemption to the provisions or requirements of the Ordinance, when only one contractor is available to enter into a contract or agreement to occupy and use City property on terms and conditions established by the City; when sole source conditions exist for goods, services, public project or improvements and related construction services; when there are no responsive bidders to the Ordinance requirements and the contract is for essential goods or services; when emergency conditions with public health and safety implications exist; or when the contract is for specialized legal services if in the best interest of the City.

- 8. In consideration of the foregoing, I shall defend, indemnify and hold harmless, the City, its officers and employees, against any claims, actions, damages, costs (including reasonable attorney fees), or other liabilities of any kind arising from any violation of the Requirements or of the Ordinance by me.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that I am authorized to bind the Contractor to the provisions of this Declaration.

	Salvatore Caggiano
Signature of Authorized Representative	Print Name
President	3-16-16
Title	Date

\*\*\*\*\*



YOUR RIGHTS UNDER THE CITY OF SACRAMENTO'S  
**NON-DISCRIMINATION IN EMPLOYEE BENEFITS BY CITY CONTRACTORS ORDINANCE**

On ..... (date), your employer (the "Employer") entered into a contract with the City of Sacramento (the "City") for ..... (contract details), and as a condition of that contract, agreed to abide by the requirements of the City's Non-Discrimination In Employee Benefits By City Contractors Ordinance (Sacramento City Code Section 3.54).

The Ordinance does not require the Employer to provide employee benefits. The Ordinance does require that if certain employee benefits are provided by the Employer, that those benefits be provided without discrimination between employees with spouses and employees with domestic partners, and without discrimination between the spouse or domestic partner of employees.

The Ordinance covers any employee working on the specific contract referenced above, but only for the period of time while those employees are actually working on this specific contract.

The included employee benefits are:

- Bereavement leave
- Disability, life and other types of insurance
- Family medical leave
- Health benefits
- Membership or membership discounts
- Moving expenses
- Pension and retirement benefits
- Vacation
- Travel benefits
- Any other benefits given to employees

(Employee Benefits does not include benefits that may be preempted by federal or state law.)

If you feel you have been discriminated or retaliated against by your employer in the terms and conditions of your application for employment, or in your employment, or in the application of these employee benefits, because of your status as an applicant or as an employee protected by the Ordinance, or because you reported a violation of the Ordinance, and after having exhausted all remedies with your employer,

**You May . . .**

- o Submit a written complaint to the City of Sacramento, Contract Services Unit, containing the details of the alleged violation. The address is:  
  
City of Sacramento, Contract Services Unit, 915 I St., 2nd Floor, Sacramento, CA 95814
- o Bring an action in the appropriate division of the Superior Court of the State of California against the Employer and obtain the following remedies:
  - Reinstatement, injunctive relief, compensatory damages and punitive damages
  - Reasonable attorney's fees and costs

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YOUR RIGHTS UNDER THE CITY OF SACRAMENTO'S

**NON-DISCRIMINATION IN EMPLOYEE BENEFITS BY CITY CONTRACTORS ORDINANCE**

If your employer provides employee benefits, they must be provided to those employees working on a City of Sacramento contract without discriminating between employees with spouses and employees with domestic partners.

The included employee benefits are:

- Bereavement leave
- Disability, life and other types of insurance
- Family medical leave
- Health benefits
- Membership or membership discounts
- Moving expenses
- Pension and retirement benefits
- Vacation
- Travel benefits
- Any other benefits given to employees

If you feel you have been discriminated against by your employer . . .

**You May . . .**

- o Submit a written complaint to the City of Sacramento, Contract Services Unit, containing the details of the alleged violation. The address is:  
  
City of Sacramento  
Contract Services Unit  
915 I St., 2nd Floor  
Sacramento, CA 95814
- o Bring an action in the appropriate division of the Superior Court of the State of California against the employer and obtain reinstatement, injunctive relief, compensatory damages, punitive damages and reasonable attorney's fees and costs.

**Discrimination and Retaliation Prohibited.**

If you feel you have been discriminated or retaliated against by your employer in the terms and conditions of your application for employment, or in your employment, because of your status as an applicant or as an employee protected by the Ordinance, or because you reported a violation of this Ordinance . . .

**You May Also . . .**

Submit a written complaint to the City of Sacramento, Contract Services Unit, at the same address, containing the details of the alleged violation.

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KNOW ALL MEN BY THESE PRESENTS,

That we, Caggiano General Engineering, Inc.

as Principal, and American Contractors Indemnity Company

a corporation duly organized under the laws of the State of California and duly licensed to become sole surety on bonds required or authorized by the State of California, as Surety, are held and firmly bound unto the City of Sacramento, hereinafter called the City, in the penal sum of ten percent (10%) of the (BASE OR LUMP SUM) Proposal of the Principal above named, or other amount as set forth in the Invitation to Bidders, submitted by said Principal to the City for the Work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH

That whereas the Principal has submitted the above mentioned proposal to the City, for which Proposals are to be opened by the Office of the City Clerk, Historic City Hall, Hearing Room, 2<sup>nd</sup> Floor, 915 I Street, Sacramento, California, on March 23, 2016 for the Work specifically described as follows:

Install Magnetic Flow Meters at 12 City Sewer Lift Station

(PN: X14010087 7 X14010081) (B16141321021)

NOW, THEREFORE, if the aforesaid Principal is award the Agreement and within the time and manner required under the Contract Documents, enters into a written Agreement, in the prescribed form, in accordance with the Proposal, and files two (2) bonds with the City, one to guarantee faithful performance and the other to guarantee payment for labor and materials, and files the required insurance policies with the City, all as required by the Contract Documents or by law, then the obligation shall be null and void; otherwise it shall be and remain in full force and effect.

In the event suit is brought upon this bond by the Obligee and judgment is recovered, the Surety shall pay all costs incurred by the Obligee in such suit, including a reasonable attorney's fee to be fixed by the court, which sums shall be additional to the principal amount of this bond.

IN WITNESS THEREOF, We have hereunto set our hands and seal this 15th day of March, 2016

Caggiano General Engineering, Inc.  
PRINCIPAL Seal  
By: \_\_\_\_\_  
Title

American Contractors Indemnity Company  
SURETY Seal  
By: Patricia Zenizo  
Patricia Zenizo, Attorney-in-Fact  
Title  
Preferred Bonding  
Agent Name and Address  
1800 McCollum St. Los Angeles, CA 90026  
(323) 663-7814  
Agent Phone #  
(310) 649-0990  
Surety Phone #  
OD69256  
California License #

**CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT**

**CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California )  
County of Los Angeles )

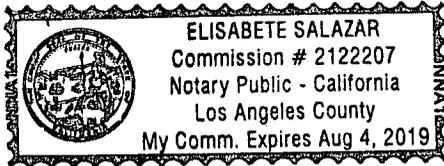
On MAR 15 2018 before me, Elisabete Salazar, Notary Public,  
*Date Here Insert Name and Title of the Officer*

personally appeared Patricia Zenizo  
*Name(s) of Signer(s)*

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

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature [Handwritten Signature]  
*Signature of Notary Public*

*Place Notary Seal Above*

**OPTIONAL**

*Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.*

**Description of Attached Document**

Title or Type of Document: \_\_\_\_\_ Document Date: \_\_\_\_\_  
Number of Pages: \_\_\_\_\_ Signer(s) Other Than Named Above: \_\_\_\_\_

**Capacity(ies) Claimed by Signer(s)**

Signer's Name: \_\_\_\_\_  
 Corporate Officer — Title(s): \_\_\_\_\_  
 Partner —  Limited  General  
 Individual  Attorney in Fact  
 Trustee  Guardian or Conservator  
 Other: \_\_\_\_\_  
Signer Is Representing: \_\_\_\_\_

Signer's Name: \_\_\_\_\_  
 Corporate Officer — Title(s): \_\_\_\_\_  
 Partner —  Limited  General  
 Individual  Attorney in Fact  
 Trustee  Guardian or Conservator  
 Other: \_\_\_\_\_  
Signer Is Representing: \_\_\_\_\_

# LOCAL BUSINESS ENTERPRISE (LBE) PARTICIPATION REQUIREMENTS

(For City Contracts without federal funds)

## I. LBE PARTICIPATION REQUIREMENT

On April 3, 2012, the Sacramento City Council adopted a Local Business Enterprise (LBE) Preference Program to provide enhanced opportunities for the participation of LBEs in the City's contracting and procurement activities. On November 19, 2013, City Council increased the LBE preference percentage from 2% to 5% and authorized City departments to require minimum LBE participation levels in specific contracts. Under City Code section 3.60.270, when the bid specifications for a City contract establish a minimum participation level for LBEs, no bidder on the contract shall be considered responsive unless its bid meets the minimum LBE participation level required by the bid specifications.

The City has established a **minimum 5% participation level for LBEs on certain contracts of \$100,000 or more as illustrated below.**

### When Does the LBE Program Apply?

	Contracts Under \$100,000			Contracts \$100,000 or More			
	Supplies / Non- Professional	Professional	Public Projects	Supplies	Non- Professional	Professional	Public Projects
5% LBE Preference Applies to Bid Evaluation?	Yes	Yes	Yes	No	No	Yes	No
5% Minimum Participation Requirement? *	No	No	No	No	Yes	Yes	Yes

\* Requirement may be waived by the City Manager or the City Manager's designee (e.g. Department Directors)

## II. LBE QUALIFICATION

- A. To meet the LBE participation requirement, bidders must meet the requirements for an LBE prior to the deadline for submission of bids.
- B. Local Business Enterprise means a business enterprise, including but not limited to, a sole proprietorship, partnership, limited liability company, corporation, or other business entity that has a legitimate business presence in the City or unincorporated areas of Sacramento County. Proof of legitimate business presence in the City or unincorporated areas of Sacramento County shall include:
  1. Be an established business entity operating in the City or unincorporated County of Sacramento for at least twelve (12) consecutive months prior to submission of bid; and

2. Having either :

- a. a principal business office or workspace; or
- b. regional, branch, or satellite office with at least one full-time employee located and operating legally in the city or unincorporated county of Sacramento.

III. LBE PARTICIPATION LEVEL REQUIREMENTS

- A. LBE Participation: The percentage of LBE participation is determined based on the dollar value of the work to be performed. LBE credit may be obtained by utilizing LBE qualified subcontractors or suppliers as outlined below.
- B. Participation Credit: To receive credit for participation: (1) an LBE subcontractor must be responsible for the execution of a distinct element of the work, must possess any license or certification required for the work, and must actually perform, manage, or supervise the work without subcontracting or otherwise shifting any portion of the work to another subcontractor; and (2) an LBE supplier must furnish materials or equipment that the supplier sells as a recurring, although not necessarily primary, part of its business, and that are necessary for performance of the work.
- C. Suppliers: Credit for an LBE supplier of materials or equipment is counted as 100% of the amount paid to the supplier for the materials or equipment. To receive this credit, LBE suppliers must be listed on the bidder's Subcontractor and LBE Participation Verification Form.
- D. Subcontractors (including truckers): To receive credit for an LBE subcontractor, the subcontractor must be listed on the bidder's Subcontractor and LBE Participation Verification Form.
  - Truckers: Credit for an LBE trucker is counted as 100% of the amount paid to the trucker for trucking services, not including any amount paid to the trucker for the cost of any materials or equipment being transported by the trucker.

IV. LBE REQUIREMENTS FOR CONTRACTOR

- A. LBE Records: The Contractor shall maintain records of all subcontracts with verified LBE subcontractors and records of materials purchased from verified LBE suppliers for one year after receiving final payment from the City. Such records shall show the name and business address of each LBE subcontractor or supplier and the total dollar amount actually paid to each LBE subcontractor or supplier.

No later than 30 days after completion of the work performed under the contract, a summary of these records shall be prepared, certified correct by the Contractor's authorized representative and furnished to the City. The Contractor shall provide such other information, records, reports, certifications or other documents as may be required by the City, to determine compliance with any provision of the LBE program or these specifications.

- B. Performance of LBE Subcontractors and Suppliers: The LBEs listed by the Contractor shall perform the work and supply the materials or equipment for which they are listed, unless the Contractor has received prior written authorization from the City to perform the work with other forces or to obtain the materials or equipment from other sources. Reasons for requesting such authorization would include:

1. The listed LBE fails to execute a written contract based upon the general terms, conditions, plans, and specifications for the project.
  2. The listed LBE becomes bankrupt or insolvent.
  3. The listed LBE subcontractor fails to meet the bond requirements of the Contractor.
  4. The work performed or the materials or equipment provided by the listed LBE are unsatisfactory or are not in accordance with the plans and specifications, or the listed LBE fails to perform its contractual obligations.
  5. It would be in the best interest of the City.
- C. Subcontractor Substitution: No substitution of an LBE subcontractor shall be made at any time without compliance with the Subletting and Subcontracting Fair Practices Act. If an LBE subcontractor is unable to perform successfully and is to be replaced, the Contractor shall make reasonable efforts to replace the original LBE subcontractor with another verified LBE subcontractor. The new LBE subcontractor must be verified at the time of substitution.
- D. Reporting and Utilization Requirements and Sanctions: Failure to provide specific information, records, reports, certifications, or any other documents required for compliance with these specifications, or failure to utilize one or more LBEs in substantial compliance with the LBE utilization indicated in the Contractor's bid (unless otherwise authorized by the City as provided herein, or when such failure results from changes to the work approved by the City), shall be considered a breach of the contract. A deduction may be made from the contract amount and the deduction shall be not more than 10% of the value of the work or materials or equipment that the subject LBE(s) were listed to perform or provide in the Contractor's bid, and shall also be deducted from any payment due to the Contractor. This is in addition to any deduction that may be made under any other provision of the contract, the Sacramento City Code, or State law.
- E. Hearing and Review of Division Manager Decision: Prior to making a deduction pursuant to Section IV (D), above, the City shall provide written notice of the proposed deduction to the Contractor. The Contractor may, no later than five working days after receiving such notice, provide a written request to the City for a hearing to contest the proposed deduction. Upon receipt of a timely written request from the Contractor, the City shall schedule a hearing before the Division Manager (as defined in the City's Standard Specifications for Public Construction), and written notice of the date, time and location of the hearing shall be provided to the Contractor not less than five working days prior to the date of the hearing. The hearing shall be conducted in the manner specified in Section 4-8 of the Standard Specifications, and the Division Manager shall prepare and forward to the Contractor a written decision as soon as practicable after the hearing. The Division Manager's decision shall be subject to review in accordance with the provisions of Section 4-9 of the Standard Specifications. Failure to request such review in compliance with the requirements set forth in Section 4-9 shall constitute acceptance of the Division Manager's decision by the Contractor.

The written notices and requests described above shall be provided by registered or certified mail (return receipt requested), by facsimile, by personal delivery, or by any other method that provides reliable evidence of the date of receipt. Written notice provided by facsimile shall be deemed received on the date that it is transmitted and transmission is confirmed by the transmitting machine. Written notice provided by personal delivery shall be deemed received on the date of delivery.

## V. DEFINITIONS

- A. Local Business Enterprise (LBE): A business enterprise, including but not limited to, a sole proprietorship, partnership, limited liability company, corporation, or any other business entity that has a legitimate business presence in the city or unincorporated county of Sacramento.
- B. Contractor: The sole proprietorship, partnership, limited liability company, corporation, or any other business entity entering into a contract with the City of Sacramento.
- C. Subcontractor: The sole proprietorship, partnership, limited liability company, corporation, or other business entity entering into a contract with the prime contractor to perform a portion of the work.
- D. Supplier: The sole proprietorship, partnership, limited liability company, corporation, or other business entity to provide materials, equipment, or supplies necessary for performance of the work.
- E. Proposal: Any response to a City solicitation for Proposals or Qualifications.
- F. Bid: Any response to a City solicitation for bids.
- G. Waiver: Request to department director to waive or reduce LBE participation requirement.

FOLLOWING FORMS TO BE FILLED OUT AND SIGNED

ONLY

IF AWARDED CONTRACT

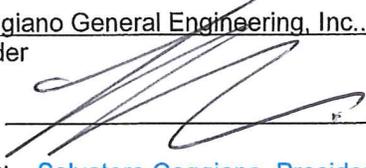


## WORKER'S COMPENSATION INSURANCE CERTIFICATION

TO THE CITY OF SACRAMENTO:

The undersigned does hereby certify that he is aware of the provisions of Section 3700 et seq. of the Labor Code which require every employer to be insured against liability for worker's compensation claims or to undertake self-insurance in accordance with the provisions of said Code, and that he/she will comply with such provisions before commencing the performance of the work on this contract.

Caggiano General Engineering, Inc.  
Bidder

By: 

Title: Salvatore Caggiano, President

Address: 2353 Dartmouth Place

El Dorado Hills, CA 95672

Date: 4-1-16

### PLEASE READ CAREFULLY BEFORE SIGNING

To be signed by authorized corporate officer or partner or individual submitting the bid. If bidder is: (example)

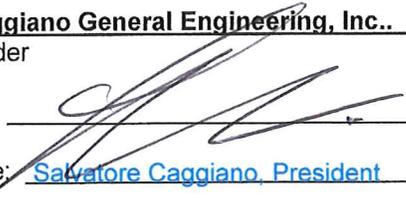
1. An individual using a firm name, sign: "John Doe, and individual doing business as Blank Company".
2. An individual doing business under his own name, sign: Your name only.
3. A co-partnership, sign: "John Doe and Richard Doe, co-partners doing business as Blank Company, by, John Doe, Co-Partner".
4. A corporation, sign: "Blank Company, by John Doe, Secretary". (Or other title)

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El Dorado Hills, CA 95672

Date: 4-1-16

### PLEASE READ CAREFULLY BEFORE SIGNING

To be signed by authorized corporate officer or partner or individual submitting the bid. If bidder is: (example)

1. An individual using a firm name, sign: "John Doe, and individual doing business as Blank Company".
2. An individual doing business under his own name, sign: Your name only.
3. A co-partnership, sign: "John Doe and Richard Doe, co-partners doing business as Blank Company, by, John Doe, Co-Partner".
4. A corporation, sign: "Blank Company, by John Doe, Secretary". (Or other title)

AGREEMENT  
(Construction Contract over \$25,000)

THIS AGREEMENT, dated for identification April 26, 2016 is made and entered into between the CITY OF SACRAMENTO, a municipal corporation ("City"), and **Caggiano General Engineering, Inc. 2353 Dartmouth Place, El Dorado Hills, CA 95672**("Contractor").

The City and Contractor hereby mutually agree as follows:

1. CONTRACT DOCUMENTS

The Contract Documents, sometimes also referred to as the "Contract," consist of the following items, which are hereby incorporated by reference as if set forth in full in this Agreement:

The Notice to Contractors  
The Proposal Form submitted by the Contractor  
The Instructions to Bidders  
The Local Business Enterprise (LBE) Requirements  
The Requirements for the Non-Discrimination in Employee Benefits by City Contractors Ordinance and the Declaration of Compliance  
The City's Reference Guide for Construction Contracts  
The Addenda, if any  
This Agreement  
The Standard Specifications  
The Special Provisions  
The Plans and Technical Specifications  
The drawings and other data and all developments thereof prepared by City pursuant to the Contract  
Any modifications of any of the foregoing made or approved by City, including but not limited to duly authorized change orders.

Unless specifically noted otherwise, references to the "Standard Specifications" shall mean and refer to the Standard Specifications for Public Construction of the City of Sacramento approved by the Sacramento City Council on June 4, 2007 (Resolution No. 2007-350), and any subsequent amendments thereto approved by the Sacramento City Council or the Sacramento City Manager. Work called for in any one Contract Document and not mentioned in another is to be performed and executed as if mentioned in all Contract Documents. The table of contents, titles and headings contained in the Contract Documents are provided solely to facilitate reference to various provisions of the Contract Documents and in no way affect or limit the interpretation of the provisions to which they refer.

2. DEFINITIONS

Unless otherwise specifically provided herein, all words and phrases defined in the Standard Specifications shall have the same meaning and intent in this Agreement.

3. AGREEMENT CONTROLS

In the event of a conflict between any of the terms and conditions set forth in this Agreement and the terms and conditions set forth in other Contract Documents, the terms and conditions set forth in this Agreement shall prevail, except that the provisions of any duly authorized change order shall prevail over any conflicting provisions of this Agreement.

## 5. CONTRACT AMOUNT AND PAYMENTS

City agrees to pay and Contractor agrees to accept, as complete payment for the above Work, in accordance with the schedule and procedures set forth in the Contract Documents and subject to deductions, withholdings and additions as specified in the Contract Documents, a total sum that shall not exceed the total bid amount set forth in Contractor's Proposal Form. In addition, subject to deductions, withholdings and additions as specified in the Contract Documents, payment for individual items of the Work shall be computed as follows:

- A. For items of the Work for which a lump sum price is specified in Contractor's Proposal Form, Contractor shall be paid the lump sum price(s) specified in Contractor's Proposal Form; and
- B. For items of the Work for which a unit price is specified in Contractor's Proposal Form, Contractor shall be paid the sum computed at such unit price, or computed at a different price if such different price is determined by City in accordance with the Standard Specifications, based on the actual amount of each such item performed and/or furnished and incorporated in the Work; provided that in no event shall the total sum for a unit price item exceed the total bid amount set forth for such item in the Contractor's Proposal Form, unless authorized by Change Order.

## 6. PROGRESS PAYMENTS

Subject to the terms and conditions of the Contract, City shall cause payments to be made upon demand of Contractor as follows:

- A. On or about the first of the month, the Engineer shall present to the Contractor a statement showing the amount of labor and materials incorporated in the Work through the twentieth (20) calendar day of the preceding month. After both Contractor and Engineer approve the statement in writing, and the City's labor compliance officer provides written approval, the City shall issue a certificate for ninety-five (95) percent of the amount it shall find to be due, subject to any deductions or withholdings authorized or required under the Contract or any applicable Laws or Regulations.
- B. No inaccuracy or error in said monthly estimates shall operate to release Contractor from damages arising from such Work or from enforcement of each and every provision of the Contract Documents, and City shall have the right subsequently to correct any error made in any estimate for payment.
- C. Contractor shall not be paid for any defective or improper Work.
- D. The remaining five (5) percent of the value of the Work performed under the Contract, if unencumbered and subject to any deductions or withholdings authorized or required under the Contract or any applicable Laws or Regulations, shall be released not later than sixty (60) days after completion and final acceptance of the Work by City. Acceptance by Contractor of the final payment shall constitute a waiver of all claims against the City arising under the Contract Documents, except for disputed claims in stated amounts that the Contractor specifically reserves in writing, but only to the extent that the Contractor has complied with all procedures and requirements applicable to the presentation and processing of such claim(s) under the Contract Documents. Contractor shall be entitled to substitute securities for retention or to direct that payments of retention be made into escrow, as provided in Public Contract Code Section 22300, upon execution of the City's Escrow Agreement for Security Deposits in Lieu of Retention.
- E. The parties agree that, for purposes of the timely progress payment requirements specified in Public Contract Code Section 20104.50, the date that the City receives a statement jointly approved by the Contractor and the Engineer as provided above shall be deemed to constitute the date that City receives an undisputed and properly submitted payment request from the Contractor. Progress payments not made within 30 days after this date may be subject to payment of interest as provided in Public Contract Code Section 20104.50.
- F. This Contract is subject to compliance monitoring and enforcement by the California Department of Industrial Relations, as specified in California Labor Code section 1771.4.

## 7. RETENTION OF SUMS CHARGED AGAINST CONTRACTOR

When, under the provisions of this Contract or any applicable Laws or Regulations, City is authorized or required to withhold, deduct or charge any sum of money against Contractor, City may deduct and retain the amount of

such charge from the amount of the next succeeding progress estimate(s), or from any other moneys due or that may become due Contractor from City. If, on completion or termination of the Contract, sums due Contractor are insufficient to pay City's charges, City shall have the right to recover the balance from Contractor or its Sureties.

#### 8. COMMENCEMENT AND PROSECUTION OF WORK

Contractor shall commence the Work not later than fifteen (15) working days after the date of the written Notice to Proceed from City to Contractor and shall diligently prosecute the Work to final completion. The phrase "commence the Work" means to engage in a continuous program on-site including, but not limited to, site clearance, grading, dredging, land filling and the fabrications, erection, or installation of the Work. The Notice to Proceed shall be issued within fifteen (15) calendar days following execution of the Agreement by the City and the filing by Contractor of the required Bonds and proof of insurance, provided that the Engineer may delay issuance of the Notice to Proceed if the Engineer determines in the Engineer's sole discretion that conditions on the site of the Work are unsuitable for commencement of the Work. After the Notice to Proceed is issued, the continuous prosecution of Work by Contractor shall be subject only to Excusable Delays as defined in this Agreement.

#### 9. TIME OF COMPLETION

The entire Work shall be brought to completion in the manner provided for in the Contract Documents on or before **one hundred eighty (180) working** days from the date of the Notice to Proceed (hereinafter called the "Completion Date") unless extensions of time are granted in accordance with the Contract Documents.

Failure to complete the entire Work by the Completion Date and in the manner provided for in the Contract Documents shall subject Contractor to liquidated damages as provided in this Agreement. Time is and shall be of the essence in the performance of the Contract and the Work.

#### 10. PAYMENTS DO NOT IMPLY ACCEPTANCE OF WORK

The payment of any progress payment, or the acceptance thereof by Contractor, shall not constitute acceptance of the Work or any portion thereof and shall in no way reduce the liability of Contractor to replace unsatisfactory work or material, whether or not the unsatisfactory character of such work or material was apparent or detected at the time such payment was made.

#### 11. ACCEPTANCE NOT RELEASE

Contractor shall correct immediately any defective or imperfect work or materials that may be discovered before final acceptance of the entire Work, whether or not such defect or imperfection was previously noticed or identified by the City. The inspection of the Work, or any part thereof, shall not relieve Contractor of any of its obligations to perform satisfactory work as herein specified.

Failure or neglect on the part of City or any of its officers, employees or authorized agents to discover, identify, condemn or reject defective or imperfect work or materials shall not be construed to imply an acceptance of such work or materials, if such defect or imperfection becomes evident at any time prior to final acceptance of the entire Work, nor shall such failure or neglect be construed as barring City from enforcing Contractor's warranty(ies) or otherwise recovering damages or such a sum of money as may be required to repair or rebuild the defective or imperfect work or materials whenever City may discover the same, subject only to any statutes of limitation that may apply to any such claim.

#### 12. CITY'S RIGHT TO TAKE POSSESSION OF THE WORK IN WHOLE OR IN PART

The City shall have the right at any time to enter upon the Work and perform work not covered by this Contract, or to occupy and use a portion of the Work, prior to the date of the final acceptance of the Work as a whole, without in any way relieving Contractor of any obligations under this Contract.

#### 13. NO WAIVER OF REMEDIES

Neither the inspection by City, its officers, employees or agents, nor any certificate or other approval for the payment of money, nor any payment for, nor acceptance of the whole or any part of the Work by City, nor any extensions of time, nor any position taken by City, its officers, employees or its agents shall operate as a waiver of any provision of the Contract Documents nor of any power herein reserved to City or any right to damages herein provided, nor shall any waiver of any breach of this Agreement be held to be a waiver of any other or subsequent breach. All remedies provided in the Contract Documents shall be taken and construed as cumulative; in addition

to each and every other remedy herein provided, the City shall have any and all equitable and legal remedies that it would in any case have.

#### 14. WARRANTY

Except as otherwise expressly provided in the Contract Documents, and excepting only items of routine maintenance, ordinary wear and tear and unusual abuse or neglect by City, Contractor warrants and guarantees all Work executed and all supplies, materials and devices of whatsoever nature incorporated in or attached to the Work, or otherwise provided as a part of the Work pursuant to the Contract, to be absolutely free of all defects of workmanship and materials for a period of one year after final acceptance of the entire Work by the City. Contractor shall repair or replace all work or material, together with any other work or material that may be displaced or damaged in so doing, that may prove defective in workmanship or material within this one year warranty period without expense or charge of any nature whatsoever to City.

In the event that Contractor shall fail to comply with the conditions of the foregoing warranty within ten (10) days after being notified of the defect in writing, City shall have the right, but shall not be obligated, to repair, or obtain the repair of, the defect and Contractor shall pay to City on demand all costs and expense of such repair. Notwithstanding anything herein to the contrary, in the event that any defect in workmanship or material covered by the foregoing warranty results in a condition that constitutes an immediate hazard to public health or safety, or any property interest, or any person, City shall have the right to immediately repair, or cause to be repaired, such defect, and Contractor shall pay to City on demand all costs and expense of such repair. The foregoing statement relating to hazards to health, safety or property shall be deemed to include both temporary and permanent repairs that may be required as determined in the sole discretion and judgment of City.

In addition to the above, the Contractor shall make a written assignment of all manufacturer's and other product warranties to the City, prior to completion and final acceptance of the Work by City.

The Contractor's Performance Bond shall secure the performance of the Contractor's obligations under this Section 14, and the Contractor and its Surety shall be jointly and severally liable for these obligations.

#### 15. LIQUIDATED DAMAGES IF WORK NOT COMPLETED ON TIME

A. The actual fact of the occurrence of damages and the actual amount of the damages that City would suffer if the entire Work, and/or any specified portion thereof, were not completed within the time(s) specified herein are dependent upon many circumstances and conditions that could prevail in various combinations, and for this reason, it is impracticable and extremely difficult to fix the actual damages. Damages that City would suffer in the event of such delay include: loss of the use of the project; expenses of prolonged assignment to the project of an architectural and/or engineering staff; prolonged costs of administration, inspection, and supervision; increased operational expenses and/or impaired operation of other facilities dependent upon completion of the project; and the loss and inconvenience suffered by the public within the City of Sacramento by reason of the delay in the completion of the project or portion thereof. Accordingly, the parties agree, and by execution of this Agreement, Contractor acknowledges that it understands and agrees, that the amount(s) set forth herein as liquidated damages reflect the parties' best efforts at the time of entering into the Contract to estimate the damages that may be incurred by City and the public due to the Contractor's delay in completion of the Work and/or any specified portion thereof, and shall be presumed to be the amount of damages sustained by the failure of Contractor to complete the entire Work and/or any specified portion thereof within the time(s) specified herein.

B. Contractor shall pay liquidated damages to City for failure to complete the entire Work by the Completion Date (as extended in accordance with the Contract Documents, if applicable) in the amount of **Five hundred dollars (\$500.00)** for each calendar day after the Completion Date (as extended in accordance with the Contract Documents, if applicable), continuing to the time at which the entire Work is completed. Such amount is the actual cash value agreed upon by the City and Contractor as the loss to City and the public resulting from Contractor's default.

The parties agree, and by execution of this Agreement, Contractor acknowledges that it understands and agrees, that the foregoing provisions provide for the imposition of liquidated damages from the Completion Date (as extended in accordance with the Contract Documents, if applicable) until the date of completion

of the entire Work as determined by the Engineer in accordance with Section 8-4 of the Standard Specifications, whether or not the Work or any portion thereof is claimed or determined to be substantially complete prior to such date of completion.

- C. In the event Contractor shall become liable for liquidated damages, City, in addition to all other remedies provided by law, shall have the right to withhold any and all payments that otherwise would be or become due Contractor until the liability of Contractor under this section is finally determined. City shall have the right to use and apply such payments, in whole or in part, to reimburse City for all liquidated damages due or to become due to City. Any remaining balance of such payments shall be paid to Contractor only after discharge in full of all liability incurred by Contractor under this section or otherwise under any provision of the Contract Documents or any applicable Law or Regulation. If the sum so retained by City is not sufficient to discharge all such liabilities of Contractor, Contractor shall continue to remain liable to City until all such liabilities are satisfied in full. No failure by City to withhold any payment as specified above shall in any manner be construed to constitute a release of any such liabilities nor a waiver of the City's right to withhold payment for such liabilities.

#### 16. INDEMNITY AND HOLD HARMLESS

- A. Contractor shall defend, hold harmless and indemnify the City, its officers, employees, and agents, and each and every one of them, from and against any and all actions, damages, costs, liabilities, claims, demands, losses, judgments, penalties, costs and expenses of every type and description, whether arising on or off the site of the Work, including, but not limited to, any fees and/or costs reasonably incurred by City's staff attorneys or outside attorneys and any fees and expenses incurred in enforcing this provision (hereafter collectively referred to as "Liabilities"), including but not limited to Liabilities arising from personal injury or death, damage to personal, real or intellectual property or the environment, contractual or other economic damages, or regulatory penalties, arising out of or in any way connected with performance of or failure to perform the Work by the Contractor, any subcontractor or agent, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, whether or not (i) such Liabilities are caused in part by a party indemnified hereunder, or (ii) such Liabilities are litigated, settled or reduced to judgment; provided that the foregoing indemnity does not apply to liability for damages for death or bodily injury to persons, injury to property, or other loss, damage or expense to the extent arising from (i) the sole negligence or willful misconduct of, or defects in design furnished by, City, its agents, servants, or independent contractors who are directly responsible to City, or (ii) the active negligence of City.
- B. The existence or acceptance by City of any of the insurance policies or coverages described in this Agreement shall not affect or limit any of City's rights under this Section 16, nor shall the limits of such insurance limit the liability of Contractor hereunder. The provisions of this Section 16 shall survive any expiration or termination of the Contract.

#### 17. CONTRACTOR SHALL ASSUME RISKS

Until the completion and final acceptance by City of all Work under this Contract, the Work shall be under Contractor's responsible care and charge, and Contractor, at no cost to City, shall rebuild, repair, restore and make good all injuries, damages, re-erectments, and repairs occasioned or rendered necessary by accidental causes of any nature, to all or any portions of the Work.

#### 18. GENERAL LIABILITY OF CONTRACTOR

Except as otherwise herein expressly stipulated, Contractor shall perform all the Work and furnish all the labor, materials, tools, equipment, apparatus, facilities, transportation, power and light, and appliances, necessary or proper for performing and completing the Work herein required in the manner and within the time herein specified. The mention of any specific duty or liability of Contractor shall not be construed as a limitation or restriction of any general liability or duty of Contractor, and any reference to any specific duty or liability shall be construed to be solely for the purpose of explanation.

#### 19. INSURANCE

During the entire term of the Contract, Contractor shall maintain the insurance coverage described in this Section 19.

Full compensation for all premiums that Contractor is required to pay for the insurance coverage described herein shall be included in the compensation specified for the Work performed by Contractor under this Contract. No additional compensation will be provided for Contractor's insurance premiums. Any available insurance proceeds in excess of the specified minimum limits and coverages shall be available to the City.

It is understood and agreed by the Contractor that its liability to the City shall not in any way be limited to or affected by the amount of insurance coverage required or carried by the Contractor in connection with this Contract.

A. Minimum Scope & Limits of Insurance Coverage

- (1) Commercial General Liability Insurance providing coverage at least as broad as ISO CGL Form 00 01 on an occurrence basis for bodily injury, including death, of one or more persons, property damage, and personal injury, arising out of activities performed by or on behalf of Contractor and its subcontractors, products and completed operations of Contractor and its subcontractors, and premises owned, leased, or used by Contractor and its subcontractors, with limits of not less than one million dollars (\$1,000,000) per occurrence. The policy shall provide contractual liability and products and completed operations coverage for the term of the policy.
- (2) Automobile Liability Insurance providing coverage at least as broad as ISO Form CA 00 01 for bodily injury, including death, of one or more persons, property damage, and personal injury, with limits of not less than one million dollars (\$1,000,000) per accident. The policy shall provide coverage for owned, non-owned, and/or hired autos as appropriate to the operations of the Contractor.

No automobile liability insurance shall be required if Contractor completes the following certification:

“I certify that a motor vehicle will not be used in the performance of any work or services under this agreement.” \_\_\_\_\_ (Contractor initials)

- (3) Workers' Compensation Insurance with statutory limits, and Employers' Liability Insurance with limits of not less than one million dollars (\$1,000,000). The Workers' Compensation policy shall include a waiver of subrogation in favor of the City.

No Workers' Compensation insurance shall be required if Contractor completes the following certification:

“I certify that my business has no employees, and that I do not employ anyone. I am exempt from the legal requirements to provide Workers' Compensation insurance.”  
\_\_\_\_\_ (Contractor initials)

B. Additional Insured Coverage

- (1) Commercial General Liability Insurance: The City, its officials, employees, and volunteers shall be covered by policy terms or endorsement as additional insureds as respects general liability arising out of: activities performed by or on behalf of Contractor and its subcontractors; products and completed operations of Contractor and its subcontractors; and premises owned, leased, or used by Contractor and its subcontractors.

- (2) Automobile Liability Insurance: The City, its officials, employees, and volunteers shall be covered by policy terms or endorsement as additional insureds as respects auto liability.

C. Other Insurance Provisions

The policies are to contain, or be endorsed to contain, the following provisions:

- (1) Contractor's insurance coverage, including excess insurance, shall be primary insurance as respects City, its officials, employees, and volunteers. Any insurance or self-insurance maintained by City, its officials, employees, or volunteers shall be in excess of Contractor's insurance and shall not contribute with it.
- (2) Any failure to comply with reporting provisions of the policies shall not affect coverage provided to City, its officials, employees, or volunteers.
- (3) Coverage shall state that Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
- (4) City will be provided with thirty (30) days written notice of cancellation or material change in the policy language or terms.

D. Acceptability of Insurance

Insurance shall be placed with insurers with a Bests' rating of not less than A:VI. Self-insured retentions, policy terms or other variations that do not comply with the requirements of this Section 3 must be declared to and approved by the City in writing prior to execution of this Contract.

E. Verification of Coverage

- (1) Contractor shall furnish City with certificates and required endorsements evidencing the insurance required. The certificates and endorsements shall be forwarded to the City representative named in Exhibit A. Copies of policies shall be delivered to the City on demand. Certificates of insurance shall be signed by an authorized representative of the insurance carrier.
- (2) For all insurance policy renewals during the term of this Contract, Contractor shall send insurance certificates reflecting the policy renewals directly to:

City of Sacramento  
c/o Ebix RCS  
Reference #: (This number will be provided by EBIX after Contract approval.)  
PO Box 257  
Portland, MI 48875-0257

Insurance certificates also may be faxed to (770) 325-3340, or e-mailed to:  
CertsOnly-Portland@ebix.com

- (3) The City may withdraw its offer of contract or cancel this Contract if the certificates of insurance and endorsements required have not been provided prior to execution of this Contract. The City may withhold payments to Contractor or cancel the Contract if the insurance is canceled or Contractor otherwise ceases to be insured as required herein.

F. Subcontractors

Contractor shall require and verify that all subcontractors maintain insurance coverage that meets the minimum scope and limits of insurance coverage specified in subsection A, above.

## 20. FAILURE TO MAINTAIN BONDS OR INSURANCE

If, at any time during the performance of this Contract, Contractor fails to maintain any item of the bonds and/or insurance required under the Contract in full force and effect, Contractor shall immediately suspend all work under the Contract and notify City in writing of such failure. After such notice is provided, or if City discovers such failure and notifies Contractor, the City thereafter may withhold all Contract payments due or that become due until notice is received by City that such bonds and/or insurance have been restored in full force and effect and that the premiums therefor have been paid for a period satisfactory to the Division of Risk Management. Contractor shall not resume work until notified by City to do so, and the City shall have no responsibility or liability for any costs incurred by Contractor as a result of such suspension of Work.

In addition to the foregoing, any failure to maintain any item of the required bonds and/or insurance at any time during the performance of this Contract will be sufficient cause for termination of the Contract by City.

The Contractor shall be solely responsible for, and shall defend, indemnify and hold harmless the City, its officers, employees and agents against and from, any and all damages, claims, losses, actions, costs or other expenses of any kind incurred by any party as a direct or indirect result of any suspension of Work or termination of the Contract under the provisions of this Section.

## 21. EXCUSABLE DELAYS

For the purpose of these Contract Documents, the term "Excusable Delay" shall mean, and is limited to, delay caused directly by: acts of God; acts of a public enemy; fires; inclement weather as determined by the Engineer; riots; insurrections; epidemics; quarantine restrictions; strikes; lockouts; sitdowns; acts of a governmental agency; priorities or privileges established for the manufacture, assemble, or allotment of materials necessary in the Work by order, decree or otherwise of the United States or by any department, bureau, commission, committee, agent, or administrator of any legally constituted public authority; changes in the Work ordered by City insofar as they necessarily require additional time in which to complete the Work; the prevention of Contractor from commencing or prosecuting the Work because of the acts of others, excepting Contractor's subcontractors or suppliers; or the prevention of Contractor from commencing or prosecuting the Work because of a Citywide failure of public utility service.

The term "Excusable Delay" shall specifically not include: (i) any delay that could have been avoided by the exercise of care, prudence, foresight and diligence on the part of Contractor; (ii) any delay in the prosecution of any part of the Work that does not constitute a Controlling Operation, whether or not such delay is unavoidable; (iii) any reasonable delay resulting from time required by City for review of any Contractor submittals and for the making of surveys, measurements and inspection; and, (iv) any delay arising from an interruption in the prosecution of the Work on account of reasonable interference by other Contractors employed by City that does not necessarily prevent the completion of the entire Work within the time specified. Excusable Delays, if any, shall operate only to extend the Completion Date (not in excess of the period of such delay as determined by City) and shall not under any circumstances increase the amount City is required to pay Contractor except as otherwise provided in these Contract Documents.

## 22. CONTRACTOR TO SERVE NOTICE OF DELAYS

Whenever Contractor foresees any delay in the prosecution of the Work, and in any event as soon as possible (not to exceed a period of ten (10) calendar days) after the initial occurrence of any delay that Contractor regards as or may later claim to be an Excusable Delay, the Contractor shall notify the Engineer in writing of such delay and its cause, in order that the Engineer: (i) may take immediate steps to prevent if possible the occurrence or continuance of the delay; or (ii) if this cannot be done, may determine whether the delay is to be considered excusable, how long it continues, and to what extent the prosecution and completion of the Work are delayed thereby. Said written notice shall constitute an application for an extension of time only if the notice requests such an extension and sets forth the Contractor's estimate of the additional time required together with a full description of the cause of the delay relied upon.

After the completion of any part or whole of the Work, the Engineer, in estimating the amount due Contractor, will assume that any and all delays that may have occurred in its prosecution and completion were not Excusable Delays, except for such delays for which the Contractor has provided timely written notice as required herein, and that the Engineer has found to be excusable. Contractor shall not be entitled to claim Excusable Delay for any delay for which the Contractor failed to provide such timely written notice.

## 23. EXTENSION OF TIME

If the Contractor complies with Section 22, above, and the Engineer finds a delay claimed by the Contractor to be an Excusable Delay, the Contractor shall be allowed an extension of time to complete the Work that is proportional to the period of Excusable Delay determined by the Engineer, subject to the approval by City of a change order granting such time extension. During a duly authorized extension for an Excusable Delay, City shall not charge liquidated damages against the Contractor for such delay.

If the City extends the time to complete the Work as provided herein, such extension shall in no way release any warranty or guarantee given by Contractor pursuant to the provisions of the Contract Documents, nor shall such extension of time relieve or release the sureties of the Bonds provided pursuant to the Contract Documents. By executing such Bonds, the Sureties shall be deemed to have expressly agreed to any such extension of time. The granting of any extension of time as provided herein shall in no way operate as a waiver on the part of City of its rights under this Contract, excepting only extension of the Completion Date for such period of Excusable Delay as may be determined by the Engineer and approved by a duly authorized change order.

## 24. NO PAYMENT FOR DELAYS

No damages or compensation of any kind shall be paid to Contractor or any subcontractor because of delays in the progress of the Work whether or not such delays qualify for extension of time under this Agreement; except that this provision shall not preclude the recovery of damages for a delay caused by the City that is unreasonable under the circumstances and that is not within the contemplation of the parties, provided that the Contractor timely submits all such written notice(s) and fully complies with such other procedures as may be specified in the Contract Documents or any Laws or Regulations for Contractor to claim damages for such delay.

## 25. CHANGES IN THE WORK

Changes in the Work authorized or directed in accordance with the Contract Documents and extensions of time of completion made necessary by reason thereof shall not in any way release any warranty or guarantee given by Contractor pursuant to the provisions of the Contract Documents, nor shall such changes in the Work relieve or release the Sureties on Bonds provided pursuant to the Contract Documents. By executing such Bonds, the Sureties shall be deemed to have expressly agreed to any such change in Work and to any extension of time made by reason thereof.

## 26. TERMINATION AFTER COMPLETION DATE

In addition to any other rights City may have, if any services or work required under the Contract (including but not limited to punch list items) are not completed as of the Completion Date (as adjusted by any extensions of time for Excusable Delays granted pursuant to the Contract Documents), City may terminate the Contract at any time after the Completion Date ( as adjusted by any extensions of time for Excusable Delays granted pursuant to the Contract Documents), by providing a written notice to Contractor specifying the date of termination. Such notice also may specify conditions or requirements that Contractor must meet to avoid termination of the Contract on such date. If Contractor fails to fulfill all such conditions and requirements by such termination date, or, if no such conditions or requirements are specified, Contractor shall cease rendering services and performing work on such termination date, and shall not be entitled to receive any compensation for services rendered or work performed after such termination date. In the event of such termination, Contractor shall remain liable to City for liquidated damages incurred for any period of time prior to the termination date.

In addition to any other charges, withholdings or deductions authorized under the Contract or any Laws or Regulations, if City terminates the Contract pursuant to this section, City may withhold and deduct from any payment and/or retention funds otherwise due Contractor any sum necessary to pay the City's cost of completing or correcting, or contracting for the completion or correction of, any services or work under the Contract that are not completed to the satisfaction of the City or that otherwise are deficient or require correction as of such termination date, including but not limited to incomplete punch list items. Such costs shall include all of the City's direct and indirect costs incurred to complete or correct such services or work, including the City's administrative and overhead costs. If the amount of payment(s) and/or retention funds otherwise due the Contractor are insufficient to pay such costs, City shall have the right to recover the balance of such costs from the Contractor and/or its Surety(ies).

## 27. TERMINATION FOR CONVENIENCE

Upon written notice to the Contractor, the City may at any time, without cause and without prejudice to any other right or remedy of the City, elect to terminate the Contract for the convenience of City. In such case, the Contractor shall be paid (without duplication of any items, and after deduction and/or withholding of any amounts authorized to be deducted or withheld by the Contract Documents or any Laws or Regulations):

- A. For Work executed in accordance with the Contract Documents prior to the effective date of termination and determined to be acceptable by the Engineer, including fair and reasonable sums for overhead and profit on such Work;
- B. For reasonable claims, costs, losses, and damages incurred in settlement of terminated contracts with subcontractors, suppliers, and others; and
- C. For reasonable expenses directly attributable to termination.

Contractor shall not be paid for any loss of anticipated profits or revenue for any Work not performed prior to termination, nor for any economic loss arising out of or resulting from such termination, except for the payments listed in this section. Contractor's warranty under Section 14 of this Agreement shall apply, and Contractor shall remain responsible for all obligations related to such warranty, with respect to all portions of the Work performed prior to the effective date of the termination for convenience pursuant to this section. The City shall be entitled to have any or all remaining Work performed by other contractors or by any other means at any time after the effective date of a termination for convenience pursuant to this section.

## 28. TERMINATION FOR BREACH OF CONTRACT

If Contractor abandons the Work under this Contract, or if the Contract or any portion of the Contract is sublet or assigned without the consent of the City, or if the Engineer determines in the Engineer's sole discretion that the conditions of the Contract in respect to the rate of progress of the Work are not being fulfilled or any part thereof is unnecessarily delayed, or if Contractor violates or breaches, or fails to execute in good faith, any of the terms or conditions of the Contract, or if Contractor refuses or fails to supply enough properly skilled labor or materials or refuses or fails to make prompt payment to subcontractors for material or labor, or if Contractor disregards any Laws or Regulations or proper instruction or orders of the Engineer, then, notwithstanding any provision to the contrary herein, the City may give Contractor and its Sureties written notification to immediately correct the situation or the Contract shall be terminated.

In the event that such notice is given, and, in the event such situation is not corrected, or arrangements for correction satisfactory to the City are not made, within ten (10) calendar days from the date of such notice or within such other period of time as may be specified by the City in the notice, the Contract shall upon the expiration of said period cease and terminate. In the event of any such termination, City may take over the Work and prosecute the Work to completion, or otherwise, and the Contractor and its Sureties shall be liable to City for any cost occasioned City thereby, as hereinafter set forth.

In the event City completes the Work, or causes the Work to be completed, no payment of any kind shall be made to Contractor until the Work is complete. The cost of completing the Work, including but not limited to, extra costs of project administration and management incurred by City, both direct or indirect, shall be deducted from any sum then due, or that becomes due, to Contractor from City. If sums due to Contractor from City are less than the cost of completing the Work, Contractor and its Sureties shall pay City a sum equal to this difference on demand. In the event City completes the Work, and there is a sum remaining due to Contractor after City deducts the costs of completing the Work, then City shall pay such sum to Contractor. The Contractor and Contractor's Sureties shall be jointly and severally liable for all obligations imposed on Contractor hereunder.

No act by City before the Work is finally accepted, including, but not limited to, exercise of other rights under the Contract, actions at law or in equity, extensions of time, payments, assessments of liquidated damages, occupation or acceptance of any part of the Work, waiver of any prior breach of the Contract or failure to take action pursuant to this section upon the happening of any prior default or breach of Contractor, shall be construed to be a waiver or estoppel of the City's right to act pursuant to this Section upon any subsequent event, occurrence or failure by Contractor to fulfill the terms and conditions of the Contract. The rights of City to terminate the Contract pursuant to this Section and pursuant to Sections 26 and 27 are cumulative and are in addition to all other rights of City pursuant to the Contract and at law or in equity.

## 29. CONTRACTOR BANKRUPT

If Contractor should commence any bankruptcy proceeding, or if Contractor is adjudged a bankrupt, or if Contractor makes any assignment for the benefit of creditors, or if a receiver is appointed on account of Contractor's insolvency, then the City may, without prejudice to any other right or remedy, terminate the Contract and complete the work by giving notice as provided in Section 28 above.

## 30. SURETIES' OBLIGATIONS UPON TERMINATION

If the City terminates the Contract pursuant to Section 28 or Section 29 above:

- A. The Surety under Contractor's performance bond shall be fully responsible for all of the Contractor's remaining obligations of performance under the Contract as if the Surety were a party to the Contract, including without limitation Contractor's obligations, as provided in the Contract Documents, to complete and provide a one-year warranty of the entire Work, pay liquidated damages and indemnify, defend and hold harmless City, up to the full amount of the performance bond.
- B. The Surety under Contractor's payment bond shall be fully responsible for the performance of all of the Contractor's remaining payment obligations for work, services, equipment or materials performed or provided in connection with the Work or any portion thereof, up to the full amount of the payment bond.

## 31. ACCOUNTING RECORDS OF CONTRACTOR

During performance of the Contract and for a period of three (3) years after completing the entire Work, Contractor shall maintain all accounting and financial records related to the Contract and performance of the Work in accordance with generally accepted accounting practices, and shall keep and make such records available for inspection and audit by representatives of the City upon reasonable written notice.

## 32. USE TAX REQUIREMENTS

During the performance of this Agreement, CONTRACTOR, for itself, its assignees and successors in interest, agrees as follows:

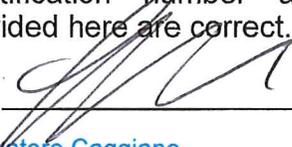
- A. Use Tax Direct Payment Permit: For all leases and purchases of materials, equipment, supplies, or other tangible personal property used to perform the Agreement and shipped from outside California, the Contractor and any subcontractors leasing or purchasing such materials, equipment, supplies or other tangible personal property shall obtain a Use Tax Direct Payment Permit from the California State Board of Equalization ("SBE") in accordance with the applicable SBE criteria and requirements.
- B. Sellers Permit: For any construction contract and any construction subcontract in the amount of \$5,000,000 or more, Contractor and the subcontractor(s) shall obtain sellers permits from the SBE and shall register the jobsite as the place of business for the purpose of allocating local sales and use tax to the City. Contractor and its subcontractors shall remit the self-accrued use tax to the SBE, and shall provide a copy of each remittance to the City.
- C. The above provisions shall apply in all instances unless prohibited by the funding source for the Agreement.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement on the date set for opposite their names.

**CONTRACTOR**

Under penalty of perjury, I certify that the taxpayer identification number and all other information provided here are correct.

Date: 4-1-16

By: 

Salvatore Caggiano  
Print Name

President  
Title

By: 

CORPORATION SACRAMENTO  
Print Name

President  
Title

27-2668083  
Federal ID#

293-5552-6  
State ID#

159069  
City of Sacramento Business Operation Tax Certificate No.

(City will not award contract until Certificate Number is obtained)

Type of Business Entity (check one):

Individual/Sole Proprietor

Partnership

Corporation

Limited Liability Company

Other (please specify : \_\_\_\_\_)

**CITY OF SACRAMENTO**

a municipal corporation

DATE \_\_\_\_\_

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

For: John F. Shirey, City Manager

Original Approved As To Form:

Attest:

\_\_\_\_\_  
City Attorney

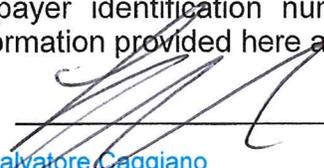
\_\_\_\_\_  
City Clerk

IN WITNESS WHEREOF, the parties hereto have signed this Agreement on the date set for opposite their names.

**CONTRACTOR**

Under penalty of perjury, I certify that the taxpayer identification number and all other information provided here are correct.

Date: 4-1-16

By: 

Salvatore Caggiano  
Print Name

President  
Title

By: CAGGIAMO, SALVATORE

President  
Print Name

Title

27-2668083

Federal ID#

293-5552-6

State ID#

159069

City of Sacramento Business Operation Tax Certificate No. (City will not award contract until Certificate Number is obtained)

Type of Business Entity (check one):

- Individual/Sole Proprietor
- Partnership
- Corporation
- Limited Liability Company
- Other (please specify: \_\_\_\_\_)

**CITY OF SACRAMENTO**

a municipal corporation

DATE \_\_\_\_\_

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

For: John F. Shirey, City Manager

Original Approved As To Form:

Attest:

\_\_\_\_\_  
City Attorney

\_\_\_\_\_  
City Clerk

**CITY OF SACRAMENTO**  
**PERFORMANCE BOND**  
Department of Utilities

**Bond #:** \_\_\_\_\_  
**Premium:** \_\_\_\_\_

**WHEREAS**, the City of Sacramento, in the State of California, hereinafter called City has conditionally awarded to *(here insert full name and address of Contractor)*:

as principal, hereinafter called Contractor, an agreement for construction of:

**SEWER SUMP FLOW METERS**  
**(PN: X14130401) (B16141321020)**

in accordance with the plans, specifications, drawings, conditions, and project manual prepared therefore, which agreement is by reference made a part hereof, and is hereinafter referred to as the Contract; and

**WHEREAS**, under the terms of the Contract, Contractor is required to furnish a bond for the faithful performance of the Contract.

**NOW, THEREFORE**, we the Contractor and *(here insert full name and address of Surety)*:

\_\_\_\_\_, a corporation duly authorized and admitted to transact business and issue surety bonds in the State of California, hereinafter called Surety, are held and firmly bound unto the City, as obligee, in the sum of \_\_\_\_\_ DOLLARS \$ \_\_\_\_\_), for the payment of which sum well and truly to be made, we the Contractor and Surety bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally. The condition of this obligation is such that, if the Contractor, Contractor's heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and fully perform all covenants, conditions and agreements required to be kept and performed by Contractor in the Contract and any changes, additions or alterations made thereto, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meanings, and shall indemnify and save harmless the City, its officers, employees and agents, as therein provided, then this obligation shall be null and void; otherwise shall be and remain in full force and effect. This obligation shall remain in full force and effect until (1) the date that the Contractor no longer has any remaining obligation of performance under the Contract, or (2) the date that is one year after the date that the work to be performed under the Contract is accepted as complete by the City, whichever occurs later.

As part of the obligation secured hereby and in addition to the sum specified above, there shall be included all costs, expenses and fees, including attorney's fees, reasonably incurred by City in successfully enforcing such obligation, all to be taxed as costs and included in any judgement rendered.

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

**IN WITNESS WHEREOF**, this instrument has been duly executed by authorized representatives of the Contractor and Surety.  
SIGNED AND SEALED on \_\_\_\_\_, 2016.

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

By \_\_\_\_\_

Title \_\_\_\_\_

ORIGINAL APPROVED AS TO FORM:

\_\_\_\_\_  
City Attorney

\_\_\_\_\_  
(Surety) (Seal)

By \_\_\_\_\_

Title \_\_\_\_\_

Agent Name and Address \_\_\_\_\_

Agent Phone # \_\_\_\_\_

Surety Phone # \_\_\_\_\_

California License # \_\_\_\_\_

Surety Email: \_\_\_\_\_



**CITY OF SACRAMENTO**  
**PAYMENT BOND**  
Department of Utilities

Bond No: \_\_\_\_\_  
Premium: \_\_\_\_\_

**WHEREAS**, the City of Sacramento, in the State of California, hereinafter called City, has conditionally awarded to:

hereinafter called Contractor, a contract for construction of:

**SEWER SUMP FLOW METERS**  
**(PN: X14130401) (B16141321020)**

Which contract is by reference incorporated herein and made a part hereof, and is hereinafter referred to as the Contract; and

**WHEREAS**, under the terms of the Contract and pursuant to Chapter 5 of Title 3 of Part 6 of Division 4 of the California Civil Code (commencing with Civil Code Section 9550), Contractor is required to furnish a good and sufficient payment bond to secure payment of the claims to which reference is made in Civil Code Section 9554.

**NOW, THEREFORE**, we the Contractor and (*here insert full name and address of Surety*):

\_\_\_\_\_, a corporation a corporation duly authorized and admitted to transact business and issue surety bonds in the State of California, hereinafter called Surety, are held and firmly bound unto the City, and unto all persons or entities entitled to assert a claim against a payment bond under any of the aforesaid Civil Code provisions in the sum of \_\_\_\_\_ DOLLARS (\$\_\_\_\_\_), on the condition that if Contractor shall fail to pay for any materials or equipment furnished or used in performance of the Contract, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to such work or labor, or for any amounts required to be deducted, withheld, and paid over to the Franchise Tax Board or the Employment Development Department from the wages of employees of the Contractor and all subcontractors with respect to such work or labor, then the Surety shall pay the same in an amount not exceeding the sum specified above. If suit is brought upon this bond, Surety shall pay, in addition to the above sum, all costs, expenses and fees, including attorney's fees, reasonably incurred by any party in successfully enforcing the obligation secured hereby, all to be taxed as costs and included in any judgment rendered. Should the condition of this bond be fully performed, then this obligation shall become null and void, otherwise it shall be and remain in full force and effect, and shall bind Contractor, Surety, their heirs, executors, administrators, successors and assigns, jointly and severally.

It is hereby stipulated and agreed that this bond shall inure to the benefit of all persons, companies, corporations, political subdivisions, State agencies and other entities entitled to assert a claim against a payment bond under any of the aforesaid Civil Code provisions, so as to give a right of action to them or their assigns in any suit brought upon this bond. The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or to the specifications accompanying the same shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration or addition.

**IN WITNESS WHEREOF**, this instrument has been duly executed by authorized representatives of the Contractor and Surety.  
SIGNED AND SEALED on \_\_\_\_\_ 2016.

\_\_\_\_\_  
(Contractor) (Seal)  
By \_\_\_\_\_  
Title \_\_\_\_\_

\_\_\_\_\_  
(Surety) (Seal)  
By \_\_\_\_\_  
Title \_\_\_\_\_

ORIGINAL APPROVED AS TO FORM:

\_\_\_\_\_  
City Attorney

Agent Name and Address \_\_\_\_\_  
Agent Phone # \_\_\_\_\_  
Surety Phone # \_\_\_\_\_  
California License # \_\_\_\_\_  
Surety Email: \_\_\_\_\_

CALIFORNIA LABOR CODES RELATING TO APPRENTICES ON PUBLIC WORKS  
PROJECTS

See info at these webpages: [www.dir.ca.gov](http://www.dir.ca.gov) and/or [www.leginfo.ca.gov](http://www.leginfo.ca.gov)

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## Construction and Demolition (C&D) Debris Recycling Requirements

As a condition of receiving this Contract, Contractor agrees to fully comply with the requirements specified herein for all demolition projects, as well as projects with a valuation of \$250,000 or more:

1. **Definitions.** For purposes of this section, the following terms, words and phrases shall have the following meanings:

"Certified C&D sorting facility" means a facility that receives C&D debris and/or processes C&D debris into its component material types for reuse, recycling, and disposal of residuals and possesses a valid certificate as a C&D sorting facility from the Sacramento Regional County Solid Waste Authority.

"Construction and demolition debris" or "C&D debris" means used or commonly discarded materials resulting from construction, repair, remodel or demolition operations on any pavement, house, building, or other structure, or from landscaping that are not hazardous as defined in California Health and Safety Code section 25100 et seq. Such materials include, but are not limited to, concrete, asphalt, wood, metal, brick, dirt, sand, rock, gravel, plaster, glass, gypsum wallboard, cardboard and other associated packaging, roofing material, ceramic tile, carpeting, masonry, plastic pipe, trees, and other vegetative matter resulting from land clearing and landscaping.

"Divert" or "diversion" means to use materials for any purpose other than disposal in a landfill or transformation facility. Methods to divert materials include on-site reuse of the materials, delivery of materials from the project site to a certified C&D sorting facility or a recycling facility, or other methods as approved in regulations promulgated by the City Department of Utilities.

"Franchised waste hauler" means a person who possesses a valid commercial solid waste collection franchise issued by the Sacramento Regional County Solid Waste Authority.

"Mixed C&D debris" means loads that include commingled recyclable and non-recyclable C&D debris generated at a project site.

"Recyclable C&D debris" means C&D debris required to be diverted from landfills as specified in the Waste Management Plan and returned to the economic mainstream in the form of raw material for new, reused or reconstituted products that meet the quality standards necessary to be used in the marketplace.

"Recycling facility" means a facility or operation that receives, processes, and transfers source-separated recyclable materials.

"Source-separated C&D debris" means recyclable C&D debris that is separately sorted and containerized at the site of generation by individual material type and segregated from mixed C&D debris prior to collection and transporting.

"Waste log" means a record detailing the management of C&D debris generated by the covered project, including the date and weight/volume of material by type that was salvaged, reused, recycled or disposed.

2. **Waste Management Plan.** A completed WMP (see **Attachment 1**) must be submitted to and approved by the City prior to commencing any work on the project. The WMP must specify the types of C&D debris that will be generated from the project; the manner in which C&D debris will be managed and/or stored on the project site; the manner in which recyclable C&D debris generated from the project will be recycled or reuse; the person who will haul, collect or transport the recyclable C&D debris from the project site; and the certified C&D sorting facility or recycling facility where recyclable C&D debris will be delivered. The WMP must be approved by the City prior to commencing any work on the project.

3. Contractor shall be solely responsible for diverting the recyclable C&D materials specified on the WMP. Mixed C&D debris shall be delivered to a SWA-certified C&D sorting facility only. Only the permit holder, the person who generates the waste, a franchised waste hauler, or the City of Sacramento can transport or haul mixed C&D debris. Source-separated C&D debris may be delivered by any person to any recycling facility that accepts such materials. (See **Attachment 2** for list of C&D Debris Haulers and Facilities).

4. During the course of the project, Contractor shall maintain a waste log (see **Attachment 3**), and keep all weight tickets or weight receipts, for all C&D debris hauled away from the project. At a minimum, the waste log shall specify the C&D debris generated by the project; the manner in which C&D debris was recycled or re-used; and the facility where the C&D debris was delivered.

5. Within 30 days after submitting the project completion report, Contractor shall submit to the City a completed waste log, along with copies of supporting weight tickets. Contractor shall maintain and keep accurate and complete records of all bills, weight receipts or weight tickets that were issued for the collection, transport or disposal of C&D debris for a period of one-year after submittal of the waste log. The records shall be made available for inspection, examination and audit by the City during the one-year retention period to validate the information provided in the WMP and in the waste log. If the City determines noncompliance by the Contractor after an audit has been conducted, Contractor shall reimburse the City for all costs incurred in performing the audit.

6. Failure by Contractor to comply with any provisions specified herein will subject Contractor to possible suspension and/or termination of this Contract for cause; repayment of any or all of the Contract amount disbursed by the City; imposition of a penalty, payable to the City (\$50-\$250 for first offense, \$251-\$500 for second offense, and \$501-\$1500 for subsequent offenses); and/or submission of a performance security deposit fee when submitting a permit application to the City for a project within one year of imposition of the penalty.

For questions or to obtain more information about the Recycling Requirements for C&D debris, contact the City of Sacramento, Solid Waste Services Division, 2812 Meadowview Road, Building 1, Sacramento, CA 95832, or telephone (916) 808-4833, or email [C&D@cityofsacramento.org](mailto:C&D@cityofsacramento.org)

## Request for Taxpayer Identification Number and Certification

Give Form to the  
 requester. Do not  
 send to the IRS.

Print or type See Specific Instructions on page 2.	1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank. <b>Caggiano General Engineering, Inc.</b>		
	2 Business name/disregarded entity name, if different from above		
	3 Check appropriate box for federal tax classification; check only one of the following seven boxes: <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____ Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner. <input type="checkbox"/> Other (see instructions) ▶ _____	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ (Applies to accounts maintained outside the U.S.)	
	5 Address (number, street, and apt. or suite no.) <b>3941 Park Drive STE. 20-347</b>	Requester's name and address (optional)	
	6 City, state, and ZIP code <b>El Dorado Hills, CA 95762</b>		
	7 List account number(s) here (optional)		

### Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number	
[ ] [ ] [ ] - [ ] [ ] - [ ] [ ] [ ] [ ]	or
Employer identification number	
27 - 2668083	

### Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here	Signature of U.S. person ▶ _____	Date ▶ <b>3-16-16</b>
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### General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

**Future developments.** Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at [www.irs.gov/fw9](http://www.irs.gov/fw9).

#### Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)

- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What Is FATCA reporting?* on page 2 for further information.

# 2016 Withholding Exemption Certificate

590

The payee completes this form and submits it to the withholding agent. The withholding agent keeps this form with their records.

**Withholding Agent**

Name  
City of Sacramento

**Payee**

Name  
Caggiano General Engineering, Inc.  SSN or ITIN  FEIN  CA Corp no.  CA SOS file no.  
27-2668083

Address (apt./ste., room, P.O. box, or P.M.B. no.)  
3941 Park Drive, STE.20-347

City (If you have a foreign address, see instructions.)  
El Dorado Hills State ZIP code  
CA 95762

**Exemption Reason**

Check only one reason box below that applies to the payee.

By checking the appropriate box below, the payee certifies the reason for the exemption from the California income tax withholding requirements on payment(s) made to the entity or individual.

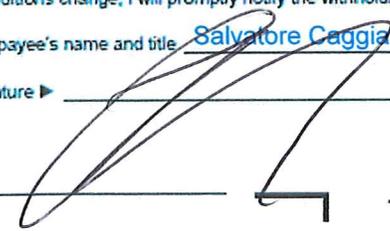
- Individuals — Certification of Residency:**  
I am a resident of California and I reside at the address shown above. If I become a nonresident at any time, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.
- Corporations:**  
The corporation has a permanent place of business in California at the address shown above or is qualified through the California Secretary of State (SOS) to do business in California. The corporation will file a California tax return. If this corporation ceases to have a permanent place of business in California or ceases to do any of the above, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.
- Partnerships or Limited Liability Companies (LLCs):**  
The partnership or LLC has a permanent place of business in California at the address shown above or is registered with the California SOS, and is subject to the laws of California. The partnership or LLC will file a California tax return. If the partnership or LLC ceases to do any of the above, I will promptly inform the withholding agent. For withholding purposes, a limited liability partnership (LLP) is treated like any other partnership.
- Tax-Exempt Entities:**  
The entity is exempt from tax under California Revenue and Taxation Code (R&TC) Section 23701 \_\_\_\_\_ (insert letter) or Internal Revenue Code Section 501(c) \_\_\_\_\_ (insert number). If this entity ceases to be exempt from tax, I will promptly notify the withholding agent. Individuals cannot be tax-exempt entities.
- Insurance Companies, Individual Retirement Arrangements (IRAs), or Qualified Pension/Profit-Sharing Plans:**  
The entity is an insurance company, IRA, or a federally qualified pension or profit-sharing plan.
- California Trusts:**  
At least one trustee and one noncontingent beneficiary of the above-named trust is a California resident. The trust will file a California fiduciary tax return. If the trustee or noncontingent beneficiary becomes a nonresident at any time, I will promptly notify the withholding agent.
- Estates — Certification of Residency of Deceased Person:**  
I am the executor of the above-named person's estate or trust. The decedent was a California resident at the time of death. The estate will file a California fiduciary tax return.
- Nonmilitary Spouse of a Military Servicemember:**  
I am a nonmilitary spouse of a military servicemember and I meet the Military Spouse Residency Relief Act (MSRRA) requirements. See instructions for General Information E, MSRRA.

**CERTIFICATE OF PAYEE:** Payee must complete and sign below.

To learn about your privacy rights, how we may use your information, and the consequences for not providing the requested information, go to [ftb.ca.gov](http://ftb.ca.gov) and search for privacy notice. To request this notice by mail, call 800.852.5711.

Under penalties of perjury, I hereby certify that the information provided in this document is, to the best of my knowledge, true and correct. If conditions change, I will promptly notify the withholding agent.

Type or print payee's name and title Salvatore Caggiano, President Telephone (916)501-0611

Payee's signature  Date 3-16-16

## **Green Contracting Survey (Voluntary)**

The City of Sacramento and the Sacramento Metropolitan Air Quality Management District (SMAQMD) are conducting a joint pilot project to help meet Federal Clean Air Standards for the Sacramento region.

Attached is a Green Contracting Fleet Inventory Form. Please complete the form, remove it from the Contract Documents, and return it to SMAQMD. Please do not return the Green Contracting Fleet Inventory Form to the City of Sacramento.

A limited amount of funds and other financial incentives may be available to qualified contractors participating in this joint project to assist qualified contractors with upgrading and/or replacing equipment and/or trucks.

**Completing and returning the Green Contracting Fleet Inventory Forms to SMAQMD is strictly voluntary**

**Voluntary Green Contracting Fleet Inventory List (On-Road Equipment)**

In partnership with the City of Sacramento and the Sacramento Metropolitan Air Quality Management District

Company Name: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_  
 Company Address: \_\_\_\_\_  
 City, State, ZIP: \_\_\_\_\_  
 Company Phone: \_\_\_\_\_

City Bid Information	
Department	
Project #	
LBE	

**Please Submit To:** \_\_\_\_\_

- Instructions:
- a) Please enter the vehicle / equipment information for each unit used in conjunction with your City of Sacramento Bid.
  - b) All fields are required for both on-road heavy-duty vehicles and off-road construction equipment over 50 HP.
  - c) Electronic version available at <http://www.airquality.org/ceqa/index.shtml>  
For additional questions, please call (916) 874-4892
  - d)

Kristian Damkier, P.E.  
 Sacramento Metropolitan AQMD  
 777 12th St, 3rd Floor  
 Sacramento, CA 95814-1908

#	VIN	License Plate	Vehicle Information			Engine Information			Annual Usage (miles)	Received Funding	
			Make	Model	Year	Make	Model	Year			HP
(ex)	1XP5AAC35RG339402	1T45678	Kenworth	T-300	2002	Cummins	ISB	2002	250	35,000	No

**Voluntary Green Contracting Fleet Inventory List (On-Road Equipment)**

In partnership with the City of Sacramento and the Sacramento Metropolitan Air Quality Management District

Company Name: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_  
 Company Address: \_\_\_\_\_  
 City, State, ZIP: \_\_\_\_\_  
 Company Phone: \_\_\_\_\_

City Bid Information	
Department	_____
Project #	_____
LBE	_____

- Instructions:
- a) Please enter the vehicle / equipment information for each unit used in conjunction with your City of Sacramento Bid.
  - b) All fields are required for both on-road heavy-duty vehicles and off-road construction equipment over 50 HP.  
Electronic version is available at <http://www.airquality.org/ceqa/index.shtml>
  - c) For additional questions, please call (916) 874-4892
  - d)

**Please Submit To:**

Kristian Damkier, P.E.  
 Sacramento Metropolitan AQMD  
 777 12th St, 3rd Floor  
 Sacramento, CA 95814-1908

Equipment Serial Number	Equipment Information			Engine Information			Annual Usage (hours)
	Make	Model	Year	Make	Model	Year	
48W34456	Caterpillar	631G	2003	Caterpillar	3408E	2003	1,600

## Construction and Demolition (C&D) Debris Recycling Requirements

As a condition of receiving this Contract, Contractor agrees to fully comply with the requirements specified herein for all demolition projects, as well as projects with a valuation of \$250,000 or more:

1. **Definitions.** For purposes of this section, the following terms, words and phrases shall have the following meanings:

“Certified C&D sorting facility” means a facility that receives C&D debris and/or processes C&D debris into its component material types for reuse, recycling, and disposal of residuals and possesses a valid certificate as a C&D sorting facility from the Sacramento Regional County Solid Waste Authority.

“Construction and demolition debris” or “C&D debris” means used or commonly discarded materials resulting from construction, repair, remodel or demolition operations on any pavement, house, building, or other structure, or from landscaping that are not hazardous as defined in California Health and Safety Code section 25100 et seq. Such materials include, but are not limited to, concrete, asphalt, wood, metal, brick, dirt, sand, rock, gravel, plaster, glass, gypsum wallboard, cardboard and other associated packaging, roofing material, ceramic tile, carpeting, masonry, plastic pipe, trees, and other vegetative matter resulting from land clearing and landscaping.

“Divert” or “diversion” means to use materials for any purpose other than disposal in a landfill or transformation facility. Methods to divert materials include on-site reuse of the materials, delivery of materials from the project site to a certified C&D sorting facility or a recycling facility, or other methods as approved in regulations promulgated by the City Department of Utilities.

“Franchised waste hauler” means a person who possesses a valid commercial solid waste collection franchise issued by the Sacramento Regional County Solid Waste Authority.

“Mixed C&D debris” means loads that include commingled recyclable and non-recyclable C&D debris generated at a project site.

“Recyclable C&D debris” means C&D debris required to be diverted from landfills as specified in the Waste Management Plan and returned to the economic mainstream in the form of raw material for new, reused or reconstituted products that meet the quality standards necessary to be used in the marketplace.

“Recycling facility” means a facility or operation that receives, processes, and transfers source-separated recyclable materials.

“Source-separated C&D debris” means recyclable C&D debris that is separately sorted and containerized at the site of generation by individual material type and segregated from mixed C&D debris prior to collection and transporting.

“Waste log” means a record detailing the management of C&D debris generated by the covered project, including the date and weight/volume of material by type that was salvaged, reused, recycled or disposed.

2. **Waste Management Plan.** A completed WMP (see **Attachment 1**) must be submitted to and approved by the City prior to commencing any work on the project. The WMP must specify the types of C&D debris that will be generated from the project; the manner in which C&D debris will be managed and/or stored on the project site; the manner in which recyclable C&D debris generated from the project will be recycled or reuse; the person who will haul, collect or transport the recyclable C&D debris from the project site; and the certified C&D sorting facility or recycling facility where recyclable C&D debris will be delivered. The WMP must be approved by the City prior to commencing any work on the project.

3. Contractor shall be solely responsible for diverting the recyclable C&D materials specified on the WMP. Mixed C&D debris shall be delivered to a SWA-certified C&D sorting facility only. Only the permit holder, the person who generates the waste, a franchised waste hauler, or the City of Sacramento can transport or haul mixed C&D debris. Source-separated C&D debris may be delivered by any person to any recycling facility that accepts such materials. (See **Attachment 2** for list of C&D Debris Haulers and Facilities).

4. During the course of the project, Contractor shall maintain a waste log (see **Attachment 3**), and keep all weight tickets or weight receipts, for all C&D debris hauled away from the project. At a minimum, the waste log shall specify the C&D debris generated by the project; the manner in which C&D debris was recycled or re-used; and the facility where the C&D debris was delivered.

5. Within 30 days after submitting the project completion report, Contractor shall submit to the City a completed waste log, along with copies of supporting weight tickets. Contractor shall maintain and keep accurate and complete records of all bills, weight receipts or weight tickets that were issued for the collection, transport or disposal of C&D debris for a period of one-year after submittal of the waste log. The records shall be made available for inspection, examination and audit by the City during the one-year retention period to validate the information provided in the WMP and in the waste log. If the City determines noncompliance by the Contractor after an audit has been conducted, Contractor shall reimburse the City for all costs incurred in performing the audit.

6. Failure by Contractor to comply with any provisions specified herein will subject Contractor to possible suspension and/or termination of this Contract for cause; repayment of any or all of the Contract amount disbursed by the City; imposition of a penalty, payable to the City (\$50-\$250 for first offense, \$251-\$500 for second offense, and \$501-\$1500 for subsequent offenses); and/or submission of a performance security deposit fee when submitting a permit application to the City for a project within one year of imposition of the penalty.

For questions or to obtain more information about the Recycling Requirements for C&D debris, contact the City of Sacramento, Solid Waste Services Division, 2812 Meadowview Road, Building 1, Sacramento, CA 95832, or telephone (916) 808-4833, or email [C&D@cityofsacramento.org](mailto:C&D@cityofsacramento.org)

# C&D Debris Waste Management Plan

C&D Debris Waste Management Plan  
City of Sacramento Solid Waste Services  
2812 Meadowview Road, Building 1  
Sacramento, CA 95832  
Phone: (916) 808-4839 / Fax: (916) 808-4999  
C&D@cityofsacramento.org

Form submitted by:

Caggiano General Engineering, Inc.

*Please attach a business card, or put your name with a phone number and/or an email address.*

This Waste Management Plan (WMP) must be submitted and approved before work can begin. Only one WMP is required for each public construction project. The administration fee and, if applicable, a security deposit must be submitted with this form to be approved. Administration fee is 0.04% of project bid amount (min \$40, max \$800); security deposit, if applicable, is 1% of bid amount (max \$10,000). The accompanying Waste Log must be submitted within 30 days of the project completion report, or a penalty may be imposed.

## A. Building Project Information:

Job Address: \_\_\_\_\_

Contractor: \_\_\_\_\_

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

Caggiano General Engineering, Inc.  
2353 Dartmouth Place, El Dorado Hills, CA 95762

Engineering

Estimate: 450,000

Phone: 916-501-0611

Email: caggiano93@hotmail.com

## B. Briefly describe the project:

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## C. Materials Required to be Recycled

50% of all debris must be recycled if generated during the course of your project. You can either source-separate them, which may be hauled by anyone, or mix them in one container and send the mixed C&D debris load to a Certified Mixed C&D Sorting Facility. Mixed C&D loads can only be hauled by a franchised hauler or self-hauled. Please see the Definitions section, on the next page, for more information.

**50%**  
of all debris  
must be recycled

## D. Material Management.

1. How will C&D debris will be stored on the project site: \_\_\_\_\_ Mixed C&D \_\_\_\_\_ Source-Separated

2. Company to haul away debris: \_\_\_\_\_

3. Facilities to receive debris: \_\_\_\_\_

# C&D Debris Waste Management Plan

C&D Debris Waste Management Plan  
City of Sacramento Solid Waste Services  
2812 Meadowview Road, Building 1  
Sacramento, CA 95832  
Phone: (916) 808-4839 / Fax: (916) 808-4999  
C&D@cityofsacramento.org

## E. Definitions.

Please read and understand these terms. Call Solid Waste at (916) 808-4833 if these terms are not clear to you. More information is also available online at <http://www.cityofsacramento.org/utilities/>.

1. **Self-haul or self-hauling:** This is when the general contractor or a subcontractor *who is doing work on the project* hauls their own waste materials for recycling or disposal. Note that a *jobsite cleanup crew is not doing other work on the project and is not self-hauling*. Jobsite cleanup crews need to be franchised in order to haul mixed C&D debris away.
2. **Franchised hauler:** Check the Department of Utilities (DOU) website for a list of these haulers. Only these companies and the City of Sacramento can collect and haul mixed C&D debris generated within the City for a fee.
3. **Source separation:** This means keeping wood, metal, cardboard, or other recyclables in separate containers, and sending the materials to an authorized recycler. A list of authorized recyclers can be found on the DOU web site. Source-separated materials may be hauled by anyone.
4. **Mixed C&D debris:** This means putting all recyclable debris into one container. Mixed materials must be sent to a certified mixed C&D sorting facility. Mixed materials may be either self-hauled or hauled by a franchised hauler. If your job site is crowded, this option saves the most space.
5. **Certified Mixed C&D Sorting Facility:** See the DOU web site for a list. These facilities have been certified by the Sacramento Regional Solid Waste Authority (SWA) to extract recyclable materials from mixed C&D debris.

## F. Terms and Conditions

- Your approved Waste Management Plan and Waste Log must be kept on the job site for the duration of the project.
- City of Sacramento Solid Waste Services staff may enter the jobsite to inspect waste collection areas.
- **ALL Clean Wood Waste** (unpainted, untreated lumber, plywood and OSB), **Inert Materials** (concrete, asphalt paving, brick, block, and dirt), **Wooden Pallets**, **Scrap Metal**, and **Corrugated Cardboard** must be recycled.
- Only SWA-Certified Mixed C&D Sorting Facilities may be used to recycle these materials if mixed with other materials.
- Only the City of Sacramento, SWA-Franchised Haulers, or self-haulers (as defined above) may collect and transport mixed C&D material from the jobsite.
- C&D Debris may not be burned or dumped illegally.
- Your Waste Log must be completed and submitted, with supporting weight tickets, within 30 days of submitting your project completion report. All waste hauling and disposal or recycling activity must be entered on the Waste Log, including information from any subcontractors who self-hauled their own debris off-site.
- You must keep all receipts or weight-tickets from your project for a period of one year from the submittal of your waste log.
- Failure to comply with these terms and conditions may result in a fine and payment of a security deposit on future projects

# C&D Debris Haulers & Facilities

C&D Debris Waste Management Plan  
City of Sacramento Solid Waste Services  
2812 Meadowview Road, Building 1  
Sacramento, CA 95832  
Phone: (916) 808-4833 / Fax: (916) 808-4999  
C&D@cityofsacramento.org

## Certified Mixed C&D Facilities

Allied Waste / Elder Creek Transfer and Recovery	(916) 387-8425
Florin-Perkins Public Disposal	(916) 443-5120
L&D Landfill	(916) 737-8640
Waste Management / K&M Recycle America	(916) 452-0142

## Franchised Haulers

ACES Waste Services, Inc.	(866) 488-8837	Elk Grove Waste Management, LLC	(916) 689-4052
Allied Waste Services	(916) 631-0600	Mini Drops, Inc.	(916) 686-8785
All Waste Systems, Inc.	(916) 456-1555	Norcal Waste Services of Sacramento	(916) 381-5300
Atlas Disposal Industries, LLC	(916) 455-2800	North West Recyclers	(916) 686-8575
California Waste Recovery Systems	(916) 441-1985	Waste Management of Sacramento	(916) 387-1400
Central Valley Waste Services, Inc.	(209) 369-8274	Waste Removal & Recycling	(916) 453-1400
City of Sacramento Solid Waste	(916) 808-4839	Western Strategic Materials, Inc.	(916) 388-1076

## Recyclers\*

Bell Marine	(916) 442-9089
C & C Paper Recycling	(916) 920-2673
EBI Aggregates	(916) 372-7580
International Paper	(916) 371-4634
Modern Waste Solutions	(916) 447-6800
PRIDE Industries, Inc.	(916) 640-1300
Recycling Industries, Inc.	(916) 452-3961
Sacramento Local Conservation Corps	(916) 386-8394
Smurfit-Stone Container Corporation	(916) 381-3340
Southside Art Center	(916) 387-8080
Spencer Building Maintenance, Inc.	(916) 922-1900

## Recovery Stations & Landfills

Elder Creek Recovery & Transfer Station	(916) 387-8425
Kiefer Landfill	(916) 875-5555
L & D Landfill	(916) 383-9420
North Area Recovery Station	(916) 875-5555
Sacramento Recycling & Transfer Station	(916) 379-0500
Waste Management Recycle America	(916) 452-0142

More updated information can be found online at:  
<http://www.cityofsacramento.org/utilities/>

\* Please note that any facility may receive source-separated recyclable materials as long as it is authorized to do so by the State of California. This is not meant to be a complete list.



# C&D Debris Waste Management Plan

C&D Debris Waste Management Plan  
City of Sacramento Solid Waste Services  
2812 Meadowview Road, Building 1  
Sacramento, CA 95832  
Phone: (916) 808-4839 / Fax: (916) 808-4999  
C&D@cityofsacramento.org

Form  
submitted by:

*Please attach a business card, or put your name with a phone number and/or an email address.*

This Waste Management Plan (WMP) must be submitted and approved before work can begin. Only one WMP is required for each public construction project. The administration fee and, if applicable, a security deposit must be submitted with this form to be approved. Administration fee is 0.04% of project bid amount (min \$40, max \$800); security deposit, if applicable, is 1% of bid amount (max \$10,000). The accompanying Waste Log must be submitted within 30 days of the project completion report, or a penalty may be imposed.

## A. Building Project Information:

Job Address: \_\_\_\_\_  
Contractor: \_\_\_\_\_  
Address: \_\_\_\_\_

Engineering  
Estimate: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_

## B. Briefly describe the project:

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## C. Materials Required to be Recycled

**50% of all debris must be recycled** if generated during the course of your project. You can either **source-separate** them, which may be hauled by anyone, or mix them in one container and send the **mixed C&D debris** load to a **Certified Mixed C&D Sorting Facility**. Mixed C&D loads can only be hauled by a franchised hauler or self-hauled. Please see the Definitions section, on the next page, for more information.

**50%**  
of all debris  
must be recycled

## D. Material Management.

1. How will C&D debris will be stored on the project site: \_\_\_\_\_ Mixed C&D \_\_\_\_\_ Source-Separated
2. Company to haul away debris: \_\_\_\_\_
3. Facilities to receive debris: \_\_\_\_\_

# C&D Debris Waste Management Plan

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City of Sacramento Solid Waste Services  
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- City of Sacramento Solid Waste Services staff may enter the jobsite to inspect waste collection areas.
- **ALL Clean Wood Waste** (unpainted, untreated lumber, plywood and OSB), **Inert Materials** (concrete, asphalt paving, brick, block, and dirt), **Wooden Pallets**, **Scrap Metal**, and **Corrugated Cardboard** must be recycled.
- Only SWA-Certified Mixed C&D Sorting Facilities may be used to recycle these materials if mixed with other materials.
- Only the City of Sacramento, SWA-Franchised Haulers, or self-haulers (as defined above) may collect and transport mixed C&D material from the jobsite.
- C&D Debris may not be burned or dumped illegally.
- Your Waste Log must be completed and submitted, with supporting weight tickets, within 30 days of submitting your project completion report. All waste hauling and disposal or recycling activity must be entered on the Waste Log, including information from any subcontractors who self-hauled their own debris off-site.
- You must keep all receipts or weight-tickets from your project for a period of one year from the submittal of your waste log.
- Failure to comply with these terms and conditions may result in a fine and payment of a security deposit on future projects

# C&D Debris Haulers & Facilities

C&D Debris Waste Management Plan  
City of Sacramento Solid Waste Services  
2812 Meadowview Road, Building 1  
Sacramento, CA 95832  
Phone: (916) 808-4833 / Fax: (916) 808-4999  
C&D@cityofsacramento.org

## Certified Mixed C&D Facilities

Allied Waste / Elder Creek Transfer and Recovery	(916) 387-8425
Florin-Perkins Public Disposal	(916) 443-5120
L&D Landfill	(916) 737-8640
Waste Management / K&M Recycle America	(916) 452-0142

## Franchised Haulers

ACES Waste Services, Inc.	(866) 488-8837	Elk Grove Waste Management, LLC	(916) 689-4052
Allied Waste Services	(916) 631-0600	Mini Drops, Inc.	(916) 686-8785
All Waste Systems, Inc.	(916) 456-1555	Norcal Waste Services of Sacramento	(916) 381-5300
Atlas Disposal Industries, LLC	(916) 455-2800	North West Recyclers	(916) 686-8575
California Waste Recovery Systems	(916) 441-1985	Waste Management of Sacramento	(916) 387-1400
Central Valley Waste Services, Inc.	(209) 369-8274	Waste Removal & Recycling	(916) 453-1400
City of Sacramento Solid Waste	(916) 808-4839	Western Strategic Materials, Inc.	(916) 388-1076

## Recyclers\*

## Recovery Stations & Landfills

Bell Marine	(916) 442-9089	Elder Creek Recovery & Transfer Station	(916) 387-8425
C & C Paper Recycling	(916) 920-2673	Kiefer Landfill	(916) 875-5555
EBI Aggregates	(916) 372-7580	L & D Landfill	(916) 383-9420
International Paper	(916) 371-4634	North Area Recovery Station	(916) 875-5555
Modern Waste Solutions	(916) 447-6800	Sacramento Recycling & Transfer Station	(916) 379-0500
PRIDE Industries, Inc.	(916) 640-1300	Waste Management Recycle America	(916) 452-0142
Recycling Industries, Inc.	(916) 452-3961		
Sacramento Local Conservation Corps	(916) 386-8394		
Smurfit-Stone Container Corporation	(916) 381-3340		
Southside Art Center	(916) 387-8080		
Spencer Building Maintenance, Inc.	(916) 922-1900		

More updated information can be found online at:  
<http://www.cityofsacramento.org/utilities/>

\* Please note that any facility may receive source-separated recyclable materials as long as it is authorized to do so by the State of California. This is not meant to be a complete list.



## TECHNICAL SPECIFICATIONS

## SECTION 01105

### GENERAL INFORMATION AND REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. This project will modify twelve existing City sewage lift stations (Sumps). Modifications include the addition of a magnetic flow meter in an existing or a new manhole vault at each sump. The meter shall be locally operational as part of this work. Work includes, but is not limited to, installing one or more temporary bypass pumping systems; installing and reconfiguring piping systems (including valves, piping and supports); removal and salvage of selected equipment; pavement restoration; temporary fencing; recycling construction debris; removal of temporary facilities; site cleanup; and construction of all the associated appurtenances as shown on the plans and/or as indicated in these Contract Documents, including all material, labor, plant, tools, equipment, and services necessary for a complete, in-place operational project.
- B. Contractor may opt to work multiple sumps separately or concurrently but in no case shall any station be taken out of service longer than the out of service interval.
- C. All equipment and materials furnished that are to remain a part of the facilities shall be new, except where re-use is specifically called for.
- D. Work shall be confined to existing City owned property unless Contractor makes alternative arrangements w/ adjacent private property owners.

##### 1.02 GOVERNING DOCUMENTS

- A. All work performed under this Contract shall be in accordance with the following:
  - 1. Sealed Proposal
  - 2. Agreement
  - 3. City of Sacramento Standard Specifications, June 2007 and all addenda (hereinafter CSSS) Sections 1 through 8 and as noted otherwise.
- B. In the event of a conflict in the Contract Documents, priorities as set forth in CSSS Section 5-3 shall govern.
- C. Except for items of work specifically identified for payment in the proposal, no compensation will be paid to the Contractor for performance of these or any other general Contract requirements. Include the cost of all general Contract performance requirements in whatever proposal item is considered appropriate.

### 1.03 BID ITEMS

- A. Payment for Contract work will be made on a lump sum basis per site, as indicated in the proposal.
- c. Progress Payments shall be made as provided for in the Agreement, and in CSSS, Section 8.

### 1.04 DEFINITIONS

- A. For definitions not found herein, refer to CSSS, Section 1.
- B. "Calendar Day" shall mean every day shown on the calendar, Sundays and holidays included.
- C. "Drawings" shall mean the "Plans".
- D. "Provide" shall mean furnish and install, in accordance with the drawings.

### 1.05 CITY FURNISHED PLANS AND SPECIFICATIONS

- A. Per CSSS Section 5-4, City will provide Contractor with 5 sets of the Contract Documents, and 5 sets of the plans on 22"x34" bond paper. City will not be responsible for incomplete information in the event partial sets are ordered.

### 1.06 REFERENCE STANDARDS

- A. The publications referred to hereinafter form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only. The latest edition of referenced publications in effect at the time of the bid shall govern.
- B. Reference organization addresses included at the end of this section are for informational purposes only.

### 1.07 SUBMITTALS

- A. Conform to CSSS Section 5-7, and the requirements herein. **Provide an electronic e-mailed pdf copy (Adobe's Portable Document Format) of all submittals. Hard copies are required for the as-built Record Drawings, O&M Manual submittals, and all letter correspondence.** Electronic copies larger than 8 megabytes shall be submitted on a CD or thumb drive.
- B. Submittals shall include, but not be limited to the following:
  - 1. The Construction Schedule.
  - 2. The Schedule of Values. Include an electronic file version compatible with Microsoft Office Excel.
  - 3. Sewage Bypass Plans.
  - 4. Shutdown requests.

## **PART 2 - PRODUCTS**

### **2.01 CONSTRUCTION SCHEDULE**

- A. Submit a Construction Schedule in general conformance with CSSS Section 7-2. Schedule shall indicate the chronological sequence in which Contractor proposes to carry out each aspect of the work, the calendar dates on which the Contractor will begin the several salient elements of the work (procurement and delivery of materials, posting of "No Parking" signs, notification of property owners, scheduling of equipment, excavation of trenches, placement of pipe, etc), and the contemplated dates for completing salient elements.
- B. Schedule shall use the critical path method displayed in the form of a bar chart
- C. Contractor shall contact the Engineer at least forty-eight (48) hours in advance of any change in the schedule. If the Contractor desires to make a major change in his method or operations after commencing construction, or if the activity time schedule fails to reflect the actual progress of the work, Contractor shall submit a revised schedule to the Engineer in advance of beginning revised operations.
- D. At the very minimum, Contractor shall update the construction activity time schedule every thirty (30) calendar days throughout the duration of the project. Contractor shall also provide additional updates of the activity time schedule upon request by the Engineer within five (5) working days of such request.
- E. Schedule shall be consistent in all respects with the Contract time of completion and order of work requirements. No progress payments will be made until a suitable schedule has been submitted to and approved by the Engineer.

### **2.02 SCHEDULE OF VALUES**

- A. For Progress Payments, submit a Schedule of Values for approval by the Engineer. Submit the first draft of the schedule at least three (3) working days prior to the pre-construction conference. Contractor's standard forms will be considered for approval upon request.
- B. General Requirements:
  - 1. In addition to the number of hardcopies specified in CSSS Section 5-7, include an electronic copy compatible with Microsoft Office Excel.
  - 2. Identify the project name, project number, Contractor's name and address, submission date, and Contract number on the Schedule of Values.
  - 3. Separate the component parts of the Work into sufficient detail to serve as a basis for computing progress payments. The sum of the component parts shall equal the Contract total amount. An unbalanced (front-end loaded) Schedule of Values will not be accepted.
  - 4. For the various portions of the Work:
    - a. Identify labor, equipment, overhead, and material costs separately for items of work in excess of ten thousand dollars (\$10,000).

- b. Schedule of Values may include a separate line item for Mobilization. The following table shows the maximum progress payment amounts that the City will make for mobilization. In the event the Contractor's schedule identifies a mobilization value in excess of 3% of the total contract value, the City shall pay the excess amount with the final payment.

Work Completed, not including mobilization, as a % of Contract total.	Total % of mobilization value earned.	Total of progress payments for mobilization, as a % of the total Contract value.
Less than 5%	0%	0%
5% to 9.9%	50%	1.5%
10% to 19.9%	70%	2.0%
20% to 49.9%	90%	2.7%
50% to 99.9%	100%	3.0%
100%	100%	No Maximum.

- C. Unless otherwise approved, update the Schedule of Values monthly to reflect all Contract change orders.

### **PART 3 - EXECUTION**

#### **3.01 CONTRACTOR COMMUNICATIONS**

- A. All official communication between the Contractor and the City of Sacramento shall be made through the Engineer.
- B. Contractor shall be responsible for scheduling existing sump and equipment shutdowns necessary to complete the work. Obtain approval from the Engineer at least two (2) days prior to any proposed shutdown. Contractor shall submit to the Engineer the following information in order to schedule a shutdown:
1. Date and time of shutdown
  2. Work to be accomplished during shutdown
  3. Number of persons working during shutdown
  4. Time of re-energization
  5. 24-hour contact information for appropriate Contractor personnel

#### **3.02 MECHANICAL AND ELECTRICAL COORDINATION**

- A. Contractor's superintendent or a specially assigned assistant shall be designated the Mechanical/Electrical Coordinator and shall coordinate the exact location, space priorities, and sequence of installation of all mechanical and electrical work with each other and with all other trades.
- B. Mechanical and electrical items may be located diagrammatically on the Drawings. Actual locations shall follow locations shown on the Drawings as closely as practicable, but shall be altered or adjusted in the field by the mechanical/electrical coordinator as required by the following:

1. In finished spaces, install mechanical and electrical work concealed within the space available.
  2. Organize mechanical and electrical work to make efficient use of space. Combine similar items into groups; make all runs parallel to or at right angles with building lines where practical.
  3. Layout and install work to provide adequate space and access for adjustment, servicing, and maintenance and maximize space available for future replacement or installation of additional services.
  4. Coordinate location of switches, panelboards, pullboxes, and other exposed mechanical and electrical items with functional and visual elements. Verify location of questionable items with the Engineer before proceeding.
- C. Verify that required services such as electrical power, control wiring, and utility requirements of items and equipment submitted and furnished are compatible with services provided. Notify the Engineer of potential problems prior to ordering items or equipment and prior to installing services or completing construction in areas where services would have to be installed or modified later.

### **3.03 CONSTRUCTION SURVEYS**

- A. CSSS Section 5-5 does not apply to this project. City will only provide reference bench mark and control point info for layout. Contractor shall develop and make such additional surveys as are needed for construction, such as control lines, slope stakes, batter boards, offset stakes for pipe and structure location, and other working points, lines, and elevations as required for construction.
- B. Contractor shall be responsible to layout all work in advance of fabrication and to coordinate with all related work. Layout all new facilities and relocations based on the information provided and shown on the plans.
- C. On request of Engineer, submit documentation to verify accuracy of field surveys. Maintain a complete log of all control and survey work as it progresses.

### **3.04 PERMITS**

- A. The City has obtained no permits for this project.
- B. Contractor shall obtain a Trench Safety permit from the Division of Industrial Safety per CSSS Section 6-8 (ref Calif. Labor Code Sections 6500 thru 6502.)

### **3.05 PUBLIC SAFETY, CONVENIENCE, AND MAINTENANCE OF TRAFFIC**

- A. Contractor's attention is directed to CSSS Sections 6-6, 6-7, 6-8, 6-9 & 7-4.
- B. Contractor shall be responsible for traffic control and public safety at all times. Vehicle and pedestrian traffic must be allowed to traverse all streets and alleys.
- C. Contractor shall furnish, install, and maintain temporary construction warning

signs, flaggers, barricades, and other devices necessary to safeguard the general public and the work, and to provide for the safe and proper routing of all vehicular and pedestrian traffic within, and through, the limits of the project during the performance of the work.

- D. Maintenance of traffic shall apply continuously, and shall not be limited to normal working hours. The use of flaggers, barricades, and construction warning signs shall comply with the current edition of "*Work Area and Traffic Control Handbook*" (*WATCH*), available for review at the City of Sacramento, Public Works Agency, Traffic Engineering Division, located at 927 10<sup>th</sup> Street in Sacramento.
- E. All lanes of traffic on adjacent street(s) shall remain open at all times during the course of construction unless otherwise approved in writing by the Engineer.
- F. Contractor shall be required to establish traffic scheduling and control measures acceptable to the Engineer prior to starting any work. Contractor shall submit to the Engineer for review and approval a plan showing proposed traffic control measures and/or detours for vehicles and pedestrians affected by the construction work. This plan shall be submitted a minimum of ten (10) working days prior to the scheduled commencement of any work by the Contractor. **Contractor will not be allowed to begin work until an approved plan is on file with the Engineer.** All advance warning and traffic delineation shall conform to the latest edition of "Work Area and Traffic Control Handbook", (*WATCH*). The approved traffic control plan shall be made available to the Engineer on site at all times.
- G. Construction operations shall be conducted in such a manner as to cause as little inconvenience as possible to abutting property owners.

### **3.06 PROJECT SIGNS AND PUBLIC NOTIFICATION**

- A. Prior to beginning any onsite work, Contractor shall install one project sign at each Sump. City will supply the sign panels, which are approximately thirty (30) inches tall by fifty-four (54) inches wide. Location and height of sign installation shall be as directed by the Engineer. In general, signs on posts shall be installed a minimum seven (7) feet above adjacent grade. Unless otherwise approved, Contractor shall install a new post for each sign. Signs shall be maintained in a good condition throughout construction, shall not be bent and shall remain legible to traffic. Any damage shall be repaired by the Contractor. At the end of the project, Contractor shall remove the sign posts and return the signs to the City.
- B. Contractor shall notify all residents and businesses adjacent to the work and those otherwise affected by the construction. Notifications, which shall include the name and telephone number of the Contractor's representative that can be reached 24 hours a day, seven days a week, shall be in a format approved by the Engineer, and shall be made at least 2 days prior to commencing work. Prior to issuing notifications, submit the notification form for approval with a map of the areas proposed to receive notification.

### **3.07 EXISTING UTILITIES**

- A. Refer to CSSS Section 6-19. The location, alignment, and depth of existing underground utilities as shown on the Plans is taken from public records and no responsibility is assumed for the accuracy thereof. For the most part, underground utility services are not shown on the Plans. Contractor shall be responsible for maintaining the continued operation of all existing utilities that cross through, under, immediately adjacent to, and/or over the project work sites until the project work is completed and accepted.
- B. Contractor's attention is directed to the provisions of Chapter 3.1 "PROTECTION OF PUBLIC UTILITIES IN PUBLIC CONTRACTS" of the California Government Code concerning protecting existing overhead and underground utilities. In particular, Section 4216 "Subsurface Installations; Membership of Owners in Regional Notification Center; Notice of Excavation; Inquiry Identification Number; Marking Locations; Application of Section; Violations; Penalties" and Section 4217 "Permit to Excavate; Necessity of Inquiry Identification Number; Operative Date of Section".
- C. Contractor will insure that utility services to customers in the project are maintained.
- D. Contractor is responsible for the protection of and for damage to existing overhead and underground utility lines and services encountered during the course of construction. Contractor shall notify the respective utility owner prior to any interruption of service.
- E. Contractor is expected to "pothole" existing underground utilities a minimum of ten (10) working days in advance at any location where an existing utility may be in conflict with the proposed work.
- F. Contractor shall bear the full cost of relocating existing overhead or underground utilities not specified on plans to be relocated, but which the Contractor elects to relocate or cut and reconnect for his/her own convenience.

### **3.08 CONSTRUCTION INSPECTIONS**

- A. Conform to CSSS, Sections 5-19 and 5-20.

### **3.09 TESTING**

- A. Contractor's attention is directed to CSSS Sections 5-22 thru 5-24. City will retain an independent testing firm to perform initial soil/aggregate/asphalt compaction tests; cast-in-place concrete slump and strength tests; and grout strength tests. Contractor shall perform all other required testing, and submit written test results to the Engineer.
- B. Engineer shall be given two (2) working days notice prior to each test performed by Contractor.

- C. Any system material or workmanship found defective on the basis of acceptance tests shall be reported to the Engineer. Contractor shall replace the defective material or equipment and have testing repeated without additional cost to the City, until test results are satisfactory to the Engineer. The City will only pay for initial testing services for concrete strength and slump, soil compaction, and grout strength.
- D. When initial tests indicate non-compliance with the Contract Documents, the costs of any additional tests required for determining compliance will be deducted by the City from the Contract Sum due the Contractor.

### **3.10 EROSION, SEDIMENT, AND POLLUTION CONTROL**

- A. Conform to CSSS, Section 16-3.

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

**SECTION 01310**  
**PROJECT MEETINGS**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Description of Work: Conduct and attend all project conferences and meetings for the purposes of addressing issues related to the Work, reviewing and coordinating progress of the Work, and other matters of common interest, as required.

**PART 2 - PRODUCTS**

**2.01 PRECONSTRUCTION MEETING**

- A. Purpose
1. To designate responsible personnel, establish working understanding between parties, and confirm Notice-to-Proceed date
  2. Status of insurance and bonds
  3. Construction schedule and critical work sequences
  4. Shop drawings and other submittals
  5. Cost breakdown of major lump sum items
  6. Field decisions and change orders
  7. Maintaining record documents
  8. Processing of submittals and applications for payment
  9. Scope of work
  10. Existing conditions
  11. Equipment deliveries and priorities
  12. All other essential matters pertaining to the satisfactory completion of the Project as required.
- B. Attendance
1. The contractor's representatives at this conference shall include all major superintendents for the work and may include major subcontractors. Other attendees shall be:
    - a. Representatives of the City
    - b. Utility company representatives, as appropriate
    - c. Others as requested by the Contractor or City
  2. The Engineer will preside at the pre-construction conference and will arrange for keeping and distributing the minutes to all persons in attendance. Contractor shall plan on the conference taking no less than one hour.

## C. Requirements

1. Once a fully executed contract is received and prior to the commencement of work, the Engineer will schedule and chair a pre-construction conference to be held at the office of the Engineer.
2. Prior to the pre-construction conference, the Engineer will develop the agenda for the meeting and meet with the project manager to review the agenda.
3. Notes of the conference will be maintained by the Engineer. After the meeting, the Engineer will transcribe the minutes of the meeting and discuss any issues that were raised.
4. Contractor shall submit the following items to the Engineer at the preconstruction conference:
  - a. A preliminary schedule of shop drawings, samples and proposed substitutes ("or equal")
  - b. A list of all permits the Contractor shall obtain indicating the agency required to grant the permit, the expected date of submittal for the permit, and the required date for receipt of the permit
  - c. A 60-day plan of operation
  - d. A project overview schedule

### **2.02 DAILY COORDINATION MEETING**

#### A. Purpose:

1. In addition to other responsibilities of the Contractor and the Contractor's Superintendent as detailed in Section 5-4 of the Standard Specifications, the Contractor's Superintendent or other Contractor representative as approved by City shall meet with the City's Resident Construction Inspector (RCI) at the job site each working day, once each morning and once each afternoon, for a total of approximately one (1) hour per working day. The purpose of such meetings shall be to maintain close coordination between City and Contractor throughout performance of the Contract, and to address matters including, but not limited to: reviewing the current work day's schedule, updating the City representative on completed work, identify and rectify anomalies, and identify work scheduled for the next day.

B. Attendance: The Contractor's Superintendent, or approved representative, and the City's RCI.

### **2.03 MONTHLY PROGRESS MEETINGS**

#### A. Purpose

1. To review progress of subcontractors or other organizations that are not meeting scheduled progress, resolve conflicts, and coordinate and

expedite execution of the Work. Additionally, to review the progress of the Work Progress Schedule, narrative report, Project Partial Payment Form, record documents, and additional items pertinent to execution of the Work.

B. Attendance

1. The attendance of Contractor's superintendent and subcontractors who are actively involved in the work is required, as well as all others who are necessary to agenda. Additionally, the Engineer will invite the utility companies when the work affects their interests, and others necessary to agenda. The Engineer will preside at the meetings.

**2.04 WEEKLY TAILGATE SAFETY MEETINGS**

A. Purpose

1. Unless otherwise approved by the Engineer, Contractor shall hold weekly safety meetings with the Contractor's and Subcontractor's employees to discuss safety on the job. Contractor's safety plan shall identify who shall attend these meetings. City attendance is not required.

**2.05 OTHER MEETINGS**

- A. The City and/or Contractor may request attendance at other at meetings as considered appropriate.

**PART 3 - EXECUTION**

NOT USED

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

## **SECTION 01511**

### **TEMPORARY ELECTRICITY**

#### **PART 1 - GENERAL**

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

- A. There will be no charge for use of available on-site power where available. Contractor shall make arrangements and pay associated costs for all other power and lighting required for construction.
- B. Provide power centers, as required, for miscellaneous tools, bypass pumps, and equipment used.

##### **1.02 RELATED REQUIREMENTS**

- A. Section 16051: Electrical Work
- B. Comply with Federal, State and local codes and regulations and with utility company requirements.

#### **PART 2 - PRODUCTS (Not Used)**

#### **PART 3 - EXECUTION**

##### **3.01 GENERAL**

- A. Comply with applicable requirements specified in sections of Division 16 - Electrical.
- B. Maintain system to provide service as required.

##### **3.02 CLOSEOUT**

- A. Completely remove temporary materials and equipment when construction needs can be met by the permanent installation, and/or at project completion.
- B. Restore existing and/or permanent facilities used for temporary services to original or better condition.

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

**SECTION 01650**  
**FACILITY STARTUP**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section Includes: Procedures and actions required of the Contractor for Facility startup.

**1.02 DEFINITIONS**

- A. Project Classified System (PCS): A defined part of the Project consisting of an arrangement of items, such as equipment, structures, components, piping, wiring, materials, or incidentals, related or connected to form an identifiable, unified, functional, operational, safe, and independent system.
- B. Pre-Demonstration Period: The period of time, of unspecified duration after initial construction and installation activities during which Contractor, with assistance from manufacturers' representatives, performs the following:
1. Finishing type construction work.
  2. Equipment startup.
- C. Demonstration Period: A one week period of time, following the Pre Demonstration Period, during which Contractor initiates facility start-up and operates the Project Classified Systems, without exceeding specified downtime limitations. The purpose of the Demonstration Period is to prove the functional integrity of the mechanical and electrical equipment and components and the control interfaces of the respective equipment and components comprising the facility.

**1.03 SUBMITTALS**

- A. Submit for review prior to completion of the Pre-Demonstration Period.
1. Master startup schedule:
    - a. Schedule to include:
      - 1) Target date and time for the **City** to witness the initial startup of each system.
      - 2) Target date for initiation of Demonstration Period.

- 3) Test methods, procedures, and sample form for recording test data.
2. O&M Manuals:
  - a. The required number of approved Operation and Maintenance Manuals. Manuals must be received by the Engineer a minimum of thirty (30) days prior to scheduling any required system training.
3. Equipment installation and pre-demonstration startup certifications.
  - a. Letter verifying completion of all pre-demonstration startup activities, including receipt of all specified items from each manufacturer and/or supplier as the final item prior to initiation of Demonstration Period.

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

## **PART 3 EXECUTION**

### **3.01 GENERAL**

A. Facility Startup is divided into two periods:

1. Pre Demonstration Period including:
  - a. Startup of Equipment in presence of City personnel.
  - b. Filing of all required submittals, including O&M manuals.
2. Demonstration Period including:
  - a. Seven (7) day demonstration of functional integrity of facility or PCS.

### **3.02 PRE-DEMONSTRATION PERIOD**

A. Equipment Startup:

1. Requirements for individual items of equipment are included in Divisions 2 through 17 of these Specifications. Factory acceptance tests for equipment shall be submitted in advance of the Demonstration Period per the respective Specification Sections.
2. Prepare the equipment so that it will operate properly and safely, and so that it will be ready to demonstrate functional integrity during the Demonstration Period.
3. Operate equipment in all operable modes, including manual and automatic modes. Falsify instrumentation signals inputs into the PLC or control panel as required to operate equipment in automatic mode, where it is otherwise not possible for the equipment to run in automatic mode during the Pre-Demonstration Period.

4. Run all additional operable equipment.
  5. Procedures include, but are not limited to, the following:
    - a. Test or check and correct deficiencies of:
      - 1) Power, control, and monitoring circuits for continuity prior to connection to power source.
      - 2) Voltage of all circuits.
      - 3) Phase sequence.
      - 4) Cleanliness of connecting piping systems.
      - 5) Alignment of connected machinery.
      - 6) Vacuum and/or pressure of all closed systems.
      - 7) Lubrication.
      - 8) Valve orientation and position.
      - 9) Pumping equipment using clean water.
      - 10) Instrumentation and control signal generation, transmission, reception, and response.
      - 11) Tagging and identification systems
      - 12) All equipment: Proper connections, alignment, calibration and adjustment.
    - b. Calibrate safety equipment.
    - c. Perform other tests, checks, and activities required to make the equipment ready for the Demonstration Period.
    - d. Documentation:
      - 1) Prepare a log showing each equipment item subject to this paragraph and listing what is to be accomplished during Equipment Startup. Provide a place for Contractor and Engineer to record the date and the person accomplishing the required work. Submit completed document before requesting inspection for Substantial Completion certification.
  6. Submit, without restrictions or qualifications, the following:
    - a. Manufacturers' equipment installation check letters.
    - b. Instrumentation Supplier's Instrumentation Installation Certificate.
- B. Personnel Training:
1. See individual equipment specification sections.

2. Conduct all personnel training after completion of Equipment Startup for the equipment for which training is being conducted.
    - a. Personnel training on individual equipment or systems will not be considered completed unless:
      - 1) All pretraining deliverables are received and approved before commencement of training on the individual equipment or system.
      - 2) No system malfunctions occur during training.
      - 3) All provisions of field and classroom training specifications are met.
    - b. Training not in compliance with the above will be performed again in its entirety by the manufacturer at no additional cost to the City.
- C. Complete the filing of all required submittals:
1. Shop drawings.
  2. Approved Operation and Maintenance Manuals – submit thirty (30) calendar days prior to first training session.

### **3.03 DEMONSTRATION PERIOD**

A. General:

1. Demonstrate the functional integrity of the mechanical, electrical, and control interfaces of the respective equipment and components comprising the facility under automatic control.
2. Demonstration Period: In the presence of City personnel, operate each pump for a period of thirty (30) consecutive minutes using line power. Flow, pressure, and level measurements shall be recorded during the entirety of the Demonstration Period.
3. If, during the Demonstration Period, the aggregate amount of time used for repair, alteration, or unscheduled adjustments to any equipment or systems that renders the affected equipment or system inoperative exceeds ten (10) percent of the Demonstration Period, the demonstration of functional integrity will be deemed to have failed. In the event of failure, a new Demonstration Period will recommence after correction of the cause of failure. The new Demonstration Period shall have the same requirements and duration as the Demonstration Period previously conducted.
4. Conduct the demonstration of functional integrity under full operational conditions for a period of seven (7) consecutive 24-hour days.

5. City will provide operational personnel to provide process decisions affecting plant performance, and will be available for process decisions and testing acceptance. Contractor shall perform all other functions including, but not limited to, equipment operation and maintenance until the successful completion of the Demonstration Period.
6. City reserves the right to simulate operational variables, equipment failures, routine maintenance scenarios, etc., to verify the functional integrity of automatic and manual backup systems and alternate operating modes.
7. The time of beginning and ending any Demonstration Period shall be agreed upon by Contractor and Engineer in advance of initiating Demonstration Period.
8. Throughout the Demonstration Period, provide knowledgeable personnel to provide final field instruction on select systems, and to respond to any system problems or failures which may occur.
9. Provide all labor, supervision, utilities, chemicals, maintenance, equipment, vehicles or any other item necessary to operate and demonstrate all systems being demonstrated.

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

## SECTION 01770

### CONTRACT CLOSEOUT

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION

- A. Requirements Include:
  - 1. Closeout Procedures.
  - 2. Final Cleaning.
  - 3. Record Drawings.
  - 4. O&M Manuals.
  - 5. Warranty.

##### 1.02 SUBMITTALS

- A. Submittals shall include the following:
  - 1. Record Drawings
  - 2. Spare parts as indicated in the individual sections.
  - 3. O&M Manuals (draft and final versions).

#### PART 2 – PRODUCTS (NOT USED)

#### PART 3 - EXECUTION

##### 3.01 CLOSEOUT PROCEDURES

- A. When Contractor notifies the Engineer that the project has been completed, the Engineer shall perform a walk through and develop a list of deficient work items.
- B. After Contractor completes correction of the deficiencies to the satisfaction of the Engineer, a final walk through will be scheduled with the City Operation and Maintenance personnel. At the final walk through, a punchlist will be developed and submitted to the Contractor.
- C. Contractor shall notify the Engineer when all punchlist items, including submittal of Record Drawings, have been completed. Engineer will then inspect the work. If the work is completed to the satisfaction of the Engineer, and if as-built drawings & O&M manuals are satisfactorily completed and submitted, a completion report will be prepared.

##### 3.02 FINAL CLEANING

- A. Execute prior to final walk through.
- B. Clean all interior and exterior surfaces; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces. Clean equipment and fixtures to

a sanitary condition, clean or replace filters on mechanical equipment. Clean roofs and drainage systems of any debris. Vacuum inside switchgear.

- C. Clean site; sweep paved areas, rake clean other surfaces.
- D. Remove surplus materials, rubbish, and temporary construction facilities.

### 3.03 RECORD DRAWINGS

- A. Conform to CSSS Section 5-8.
- B. Provide complete as-built record drawings. City inspection staff will have one week to field verify accuracy of each submitted as-built record drawing set, including all factory and project drawings. Correct all record drawing deficiencies noted by inspection staff, and then resubmit them. City inspection staff will again have one week to field verify each submittal until the record drawings are considered accurate and complete. A project completion report will not be issued until City inspection staff has approved the as-built record drawings.

### 3.04 OPERATION AND MAINTENANCE (O&M) MANUALS

- A. Prior to facility startup tests, submit for review one (1) draft bound copy of an O&M manual for each Sump. Each manual shall cover all new equipment, including pumps, the level indication systems, the high level float alarm systems, all new PLC and switchgear equipment; and the flow meters.
- B. Following approval of the 'draft' manual and satisfactory operational testing, **AND BEFORE CONTRACT COMPLETION**, submit three (3) final copies of each O&M manual bound in Avery D - Ring binder model number AVY79-799 or approved equal. **One (1) of the three copies shall contain original documentation manuals, not photocopies. Also provide an electronic copy of each O&M manual on a CD. Electronic copies shall be in Adobe format (Portable Document Format). Contractor shall use the latest version of Adobe.**
- C. Each binder shall be no more than 75% full.
- D. Provide the following information on the cover and spine of each binder:

Operation and Maintenance Manual  
Project: Sump No. \_\_\_\_\_ \* Reconstruction (Fill in actual Sump No.)  
Contractor: \_\_\_\_\_  
Contract No.: \_\_\_\_\_  
Date: \_\_\_\_\_

- E. Provide a table of contents and tab sheets to identify discrete subjects. Instruction sheets shall be legible and easily understood with large sheets and drawings folded in. Use manufacturer's original pre-printed instructions when available. Cross out info that does not apply to the equipment furnished.
- F. Operating and maintenance instructions shall include, as a minimum, the following for each new mechanical and electrical equipment item:

1. Name and location of the manufacturer, the manufacturer's local representative, the nearest supplier and spare parts warehouse.
2. Approved submittals applicable to operation and maintenance.
3. Recommended installation, adjustment, start-up, calibration, and troubleshooting procedures.
4. A control sequence describing start-up, operation, and shutdown.
5. Detailed functional description of each principal system component.
6. Recommended step-by-step procedures for all modes of operation.
7. Complete internal and connection wiring diagrams.
8. Recommended preventive maintenance procedures and schedule.
9. All completed test forms.
10. Provide ISA (International Society for Measurement and Control) S-20 forms for all instrumentation devices.
11. Calibration set-points and corresponding measurements for all monitoring and/or metering devices.

### **3.05 WARRANTY**

- A. Contractor's warranty term shall begin the date the job is accepted by the City.

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

## SECTION 01920

### TEMPORARY PUMPING SYSTEM

#### PART 1 GENERAL

##### 1.01 DESCRIPTION

- A. Scope of Work: The Contractor shall furnish all labor, materials, equipment and incidentals necessary to maintain the existing sewage flow during construction of this project. It shall be the Contractor's sole responsibility to insure that the sewage flow is maintained for each facility throughout the duration of the contract. In all meter installations, no station shall be off SCADA control during the night and/or weekend hours.

##### 1.02 REFERENCE PUBLICATIONS

NOT USED

##### 1.03 SUBMITTALS

- A. Submit for approval at least 7 days before starting work:
1. Temporary pumping facilities schematic drawing.
  2. Materials list.
  3. Proposed alarms and controls for the existing manhole.
  4. Proposed method of supplying electrical power to the Contractor supplied dewatering motors/pumps.
- B. The above submittals will be reviewed in accordance with Section 5-7 of the standard specifications. No work shall be undertaken by the Contractor until the bypass pumping plan has been approved by the Engineer.
- C. The Contractor shall submit a written plan, to the Engineer, detailing how the existing electrical equipment will be kept operational during the construction period. The Contractor shall submit these plans within 2 weeks of receiving the Notice to Proceed.

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. The Contractor shall provide all the materials as specified in these specifications in order to keep the sewage flowing at all times and as directed by the Engineer.

## **PART 3 EXECUTION**

### **3.01 EXISTING CONDITIONS**

- A. Each sump is currently supplied with electrical power from SMUD, however the contractor shall provide power for the daily bypass pumping operation.

### **3.02 TEMPORARY PUMPING SYSTEM REQUIREMENTS**

- A. Do not use the existing meter pedestals, motor control centers (MCCs), and PLC to keep the sewage flowing during construction. All bypassing shall be done during City working hours of 6:00 am to 3:00 pm or as otherwise agreed to with written notice to the City of Sacramento.
- B. All equipment and materials shall be in accordance with the latest version of the NEC. All work shall be coordinated with Bill Miller of the City of Sacramento, (916) 808-1705, at least three working days in advance.
- C. Construct the new civil and mechanical improvements in such a way as to maintain sewage flow during the duration of the contract.

### **3.03 CONTRACTOR'S RESPONSIBILITIES**

- A. Coordinate the temporary pumping plans with the City.
- B. Maintain sewage flow, 24 hours a day, through the station for the duration of the contract. This also includes holidays and weekends during the duration of the contract.
- C. Meet with City representatives prior to preparing a temporary pumping system plan to obtain information regarding quantity of flow in the sumps.
- D. Contractor shall defend and indemnify the City from any and all claims resulting from failure of the temporary pumping system for each sump. The contractor shall pay all fines associated with any sewage spills.

**END OF SECTION**

## SECTION 02220

### DEMOLITION AND SALVAGE OF MATERIALS

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION

- A. The work includes demolition, removal, and salvage of existing equipment.
- B. All material resulting from demolition and/or removal, **except items indicated to be salvaged**, shall be disposed of off-site by the Contractor.
- C. In general, items to remain are not specifically identified. Unless otherwise directed, limit demolition, removal, and salvage activities to those items shown, specified, or physically necessary in order for the new facilities to be installed and made operational. If damage results from the Contractor's operations, Contractor shall repair at his/her expense, all damage to existing facilities not designated for removal or demolition. Erect barriers, fences, guard rails, enclosures, and shoring to protect personnel, structures, and facilities that are to remain. Protect trees and plants from damage.

##### 1.02 AVAILABILITY OF WORK AREAS

- A. Unless there are specific Contract stipulations or conditions to the contrary, the project sites will be released to the Contractor at one time, upon issuance of the Notice-to-Proceed. Unless otherwise directed, Contractor shall maintain access to and shall not begin demolition of any existing site facilities until temporary site bypass pumping has been installed and is operating to the satisfaction of the Engineer.

##### 1.03 SAFETY PROCEDURES AND WORKER PROTECTION

- A. Take all precautions and measures required to protect employees, City employees, residents, and the general public.
  - 1. All personnel authorized for entry into work areas shall be instructed in the proper procedures for high voltage work. In instances where off-line equipment may require removal from high voltage installations, personnel will be instructed and properly supervised for working in the vicinity of high-voltage equipment.
  - 2. All electrical equipment upon which activities are to be performed shall be de-energized and disconnected from any power source prior to commencing any work on that equipment.

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

#### PART 3 - EXECUTION

##### 3.01 INSPECTION

- A. Verify that areas to be demolished are no longer in use.

- B. Do not commence work until conditions are acceptable to the City.

### **3.02 PREPARATION**

- A. Contractor shall hold a field meeting at each site prior to beginning demolition work at that site. Meeting shall cover the Contractors procedures for removal and transportation of salvaged items. Attendees shall include as a minimum: Tim Giffin (916) 808-7997 and Vern Fields (916) 808-5542 from the Department of Utilities. Contractor shall give attendees forty-eight (48) hours notice in advance of meeting.

### **3.03 DEMOLITION**

- A. Remove existing paving as indicated or as approved.
- B. If a portion of the existing paving is to remain, make neat saw cuts a minimum of two inches (2") in depth, around the perimeter of Portland cement concrete or asphaltic concrete to be removed. Exact limits of the pavement removal shall be approved in the field by the Resident Engineer. Unless otherwise approved, curb, gutter, or sidewalk removal shall extend to the first existing expansion/ score line in the part to remain.

### **3.04 SALVAGE**

- A. Items to be salvaged shall be carefully disconnected and removed intact for potential re-use elsewhere at some other City facility. Keep unique items associated with each salvaged item intact with that item.
- B. Contractor shall deliver salvaged items to the City's Facility Services yard at 1391 35th Avenue. Contact Vern Fields (916) 808-5542 to coordinate delivery and unloading of salvaged items.

### **3.05 CLEAN-UP**

- A. Debris and rubbish shall be removed daily from the limits of work. Do not allow to accumulate on-site.
- B. Debris shall be removed and transported in a manner so as to prevent spillage onto streets or adjacent areas.

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

**SECTION 02240**  
**CONTROL OF WATER**

**PART 1 - GENERAL**

**1.01 DESCRIPTION**

- A. Furnish, install, operate, and maintain equipment to maintain excavations free of water, regardless of source, until backfilled to final grade.
- B. Comply with all federal, state, and local regulations concerning discharge of water from construction sites.

**1.02 SUBMITTALS**

- A. Before any diversion and/or dewatering is commenced; submit details of the proposed system(s) for review and approval.

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

**PART 3 - EXECUTION**

**3.01 GENERAL**

- A. Furnish, install, operate, and maintain all machinery, appliances, and equipment to maintain all excavations free from water during construction. Dispose of the water collected so as not to cause injury to public or private property, or to cause a nuisance or menace to the public.
- B. Control shall be such that softening of the bottom of excavations, or formation of "quick" conditions or "boils," does not occur. Dewatering systems shall be designed and operated so as to prevent removal of the natural soils.
- C. Dewatering systems shall operate continuously until backfill has been completed to one foot (1') above the normal groundwater level and all sources of water entering the excavation have stopped and all water has been removed.

**3.02 DISPOSAL OF WATER**

- A. Conform to CSSS Section 16-1. Dispose of water resulting from dewatering operations in a suitable manner without damage to adjacent property. Only clean, uncontaminated water shall be pumped into any existing waterway or City Storm Drain.

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

## **SECTION 02315**

### **EARTHWORK**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. Except as otherwise modified herein, earthwork shall comply with the applicable portions of CSSS Sections 10, 14, 26, and 34. Furnish all labor, materials, equipment and incidentals necessary to perform all excavation, backfill, grading, and compaction required to complete the work shown on the drawings and specified herein. No separate measurement or payment will be made for any required earthwork.
- B. Related Work:
  - 1. Section 02240 - Control of Water
  - 2. Section 02740 - Surface Restoration

##### **1.02 SUBMITTALS:**

- A. For each import material proposed, submit Index property test results to verify conformance with the specifications. Notify the Engineer of the source of the material at least 10 calendar days prior to the date of anticipated use of such material.

#### **PART 2 - PRODUCTS**

##### **2.01 AGGREGATE BASE**

- A. Conform to CSSS Section 10-7.

##### **2.02 TRENCH AND VAULT BACKFILL**

- A. Excavated material that can be compacted as specified may be placed as backfill above the initial backfill zone. Except for the top 18-inches in landscape areas, anticipate using aggregate base for trench backfill. There will be no payment made for unsuitable material/import associated with trench backfill.

##### **2.03 CLSM**

- A. Conform to CSSS Section 10-16.

#### **PART 3 - EXECUTION**

##### **3.01 GENERAL EARTHWORK REQUIREMENTS**

- A. Excavate to the lines and grades shown or required to complete the construction.

Make allowance for forms, supports, etc.

- B. If over-excavation occurs due to Contractor error, over-excavated areas will be backfilled to the correct grade with compacted aggregate base.
- C. If in the opinion of the Engineer, any subgrade surface is not in suitable condition due to failure of the Contractor to properly care for, dewater, or otherwise conduct earthwork operations properly, then remove the unsuitable material and replace it with material compacted to at least 90 percent relative compaction. The condition of any prepared subgrade shall comply with CSSS Section 14-7 before any work is placed thereon.
- D. As much as practicable, maintain work area subgrades such that they will surface drain by gravity at all times. Temporary drains and/or drainage ditches shall be installed to divert surface water which may affect the prosecution of the work.
- E. Where trenching across landscaped areas, remove existing plants with approved equipment. Cut to the lines shown or as directed, and if practical, store and maintain removed plants for later replacement. If any relocated plant deteriorates within three months of being planted, replace in kind with new plant of same variety and equal or better quality and size.

### **3.02 DISPOSAL**

- A. All excavated and/or imported material not utilized shall be disposed of offsite.

### **3.03 DUST CONTROL**

- A. Conform to CSSS Section 6-2.h.

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

## **SECTION 02630**

### **MANHOLES**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. This section describes work associated with construction of meter vault manholes.
- B. Related Work Specified In Other Sections
  - 1. Section 05505 Miscellaneous Metals

##### **1.03 SUBMITTALS**

- A. Submit catalog cuts or shop drawings per CSSS Section 5-7 showing construction details of the precast manhole sections, including sealants, the manhole steps, and the grab bars.

#### **PART 2 - PRODUCTS**

##### **2.01 MANHOLE SECTIONS**

- A. Unless otherwise approved, manhole sections shall be precast conforming to CSSS Section 25-3.1. Each wet well riser section top shall be level so as to provide full support to the precast top and 32 inch Pamrex manhole cover and frame.
- B. Meter vault riser sections shall be furnished with integral mating joints and wall thicknesses that conform to the existing sections.
- C. Existing plan dimensions shown are for bidding purposes only. Contractor shall verify all required dimensions and joint requirements prior to ordering precast sections, so that internal and external diameters are uniform, top to bottom.
- D. Precast base and top shall be of the same concrete as the manhole sections designed for H20 loading.
- E. Unless otherwise approved, joint sealant compound shall conform to CSSS Section 25-3.7.

##### **2.02 MANHOLE COVERS**

- A. Manhole covers shall be as manufactured by Pamrex cast into the pre cast top. Covers shall be hinged with a 90 degree blocking system to prevent accidental closure.

## **2.03 MANHOLE STEPS**

- A. Meter vault manhole steps shall be press fit steps made of polypropylene plastic over stainless steel reinforcing core. Manhole steps shall be ML-13-SSR as manufactured by American Step Company, Inc., Griffin, Georgia or approved equal. Steps shall be driven into specially sized holes drilled into the manhole wall. Seal or grout drilled holes if they protrude completely through the manhole wall.
- B. Wherever Manhole Steps are installed, furnish and install a pair of 1½-inch diameter vertical grab bars, spaced 18-24 inches apart, bolted to the outside manhole wall, that extend 42-inches above the top of the vault or manhole rim. Grab bars shall be as specified for handrail and grab bars in Section 05505.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. Set manhole sections in accordance with CSSS Section 25-3.
- B. Backfill with controlled density fill per CSSS Section 10-16.
- C. Place channelization as shown and or as directed. Internal surfaces shall be constructed with a smooth and uniform finish.
- D. No Manhole leakage testing is required.
- E. Install Manhole steps and grab bars in accordance with the manufacturer's standard installation instructions and/or the approved shop drawings. Steps shall be centered horizontally with the center of the access hatch above them. Vertical spacing shall be 12" minimum and 14" maximum, equally spaced for the entire structure depth.

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

## SECTION 02740

### SURFACE RESTORATION

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope Of Work

Furnish all labor, materials, equipment, and incidentals necessary to restore surfacing as shown on the drawings, and/or specified herein. Work shall include, but not necessarily be limited to preparing the subgrade, placing and compacting aggregate base, saw cutting existing pavement, placing and compacting asphalt concrete, placing Portland cement concrete, and all related work.

###### B. Related Work Specified In Other Sections

1. Section 02315 - Earthwork

###### C. Except as modified herein, surface restoration shall comply with the applicable portions of CSSS Sections 10-5, 10-7, 19, 22, 26-11, and 38.

##### 1.02 SUBMITTALS

###### A. Submit the following information for approval:

1. Aggregate base certificate of compliance.
2. Concrete mix design and copies of delivery tickets
3. Asphalt concrete mix design and copies of delivery tickets.
4. Expansion Joint and Weakened Plane Joint layout plans.

#### PART 2 – PRODUCTS Not Used)

#### PART 3 – EXECUTION

##### 3.01 GENERAL

A. Existing pavement to be removed shall be saw cut full depth to provide a neat straight pavement break. For thick AC where a "T" trench is required, the existing pavement shall be saw cut again and ground a minimum of two inches deep and six inches beyond the first saw cut edge.

B. Existing pavement as well as any curbs, gutters and sidewalks that have been cut or damaged as a result of the construction activities shall be replaced. Replacement of pavement, curb, gutter or other improvements shall match that of the original as close as practical unless otherwise indicated on the Plans or in these Special Provisions. Segments of saw cut pavement which were damaged during construction shall be re-sawn in a neat straight line.

- C. Aggregate base for repair and/or replacement of existing pavement shall meet the requirements in CSSS Section 10-7. Aggregate base shall be placed and compacted in accordance with CSSS Section 14, except that it shall be compacted to a relative compaction of not less than 95 percent.
- D. Unless otherwise approved, furnish commercially produced Type A, Asphaltic Concrete (AC) with ½ -inch maximum medium aggregate and PG 64-10 graded asphalt binder for permanent AC pavement repair. Conform to the mix design and placement requirements of Section 22 of the City Standard Specifications. The minimum pavement section within public street right-of-ways shall consist of four (4) inches of AC over 12 inches of aggregate base. Match existing onsite thicknesses at the Sumps.
- E. Concrete used in the repair and/or replacement of curb, gutter, concrete pavement, and sidewalk shall be Class "C" as specified in CSSS Section 10-5. Include 1.0 lb of lamp black per cubic yard of concrete.
- F. Repair disturbed landscaped areas to match adjacent preconstruction conditions.

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

**SECTION 03300**  
**CAST-IN-PLACE CONCRETE**

**PART 1 - GENERAL**

**1.01 DESCRIPTION:**

- A. Scope of Work: Unless otherwise directed or modified herein, conform to the applicable portions of CSSS Sections 10-5, 10-6, 10-23, 19, 20, and 21.
- B. Related Work:
  - 1. Section 02740 – Surface restoration

**1.03 SUBMITTALS**

- A. Manufacturer's data:
  - 1. Proposed mix designs, including admixtures
  - 2. Curing Material
- B. Certificates:
  - 1. Certificate of Compliance that concrete and reinforcement meets the specified requirements.
  - 2. Delivery tickets for all concrete delivered to the project site.
- C. Shop drawings: Submit plan showing expansion and control joint placement for all slab pours in excess of 100 square feet.

**PART 2 - PRODUCTS**

**2.01 GENERAL**

- A. Concrete shall conform to the applicable CSSS requirements for the respective Classes of concrete specified.
- B. Up to 20 percent by weight of fly ash per CSSS Section 10-5.1 may be substituted for the required Portland cement, regardless of the concrete Class.
- C. Use Class "B" concrete if no other Class is indicated.
- D. Concrete used to replace sidewalks, curbs , and gutter sections shall contain one pound per cubic of lamp black added per cubic yard of concrete delivered.
- E. Backfill trenches for buried electrical conduits with Class "D" or Class "B" concrete containing five pounds (5 lbs.) of red oxide per cubic yard.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. Do not place any concrete until all inserted and/or buried items are installed in their proper locations, secured against displacement, cleaned, inspected and approved. Furnish ties and supports necessary to keep embedded items in place when concrete is placed.
- B. Earth or Gravel Subgrade: Lightly dampen subgrade no more than 24 hours in advance of concrete placement. Reroll where necessary for smoothness and remove loose earth material.
- C. Wetting: Prior to placing concrete, wet wood forms sufficiently to tighten up cracks. Wet all other materials sufficiently to reduce suction and maintain concrete workability.
- D. The location of all joints is subject to approval of the Engineer prior to placement of concrete.
- E. Perform curing per CSSS Section 20-13. Finish formed surfaces by removing any and all fins.

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

## SECTION 05501

### ANCHOR BOLTS AND ANCHORING DEVICES

#### PART 1 – GENERAL

##### 1.01 SUMMARY

- A. Section Includes: Anchor bolts, concrete anchors and other anchoring devices.

##### 1.02 DESIGN REQUIREMENTS

- A. Anchor bolts for equipment frames and foundations shall be designed for a lateral seismic acceleration value of 0.3g, wind loading per the UBC, and an overturning safety factor of 1.5.
- B. Where specified in the individual equipment sections, provide calculations and supporting drawings and details prepared and signed by a professional civil or structural engineer registered in the state of California. Submit with equipment.

##### 1.03 SUBMITTALS

- A. Comply with CSSS Section 5-7.
- B. Include the following items:
  - 1. Product Data: Manufacturer's data for nuts, bolts, concrete anchors, chemical anchors and other fasteners.
  - 2. Catalog data and ICC reports for each type of anchor bolt.

##### 1.04 QUALITY ASSURANCE

- A. Do not use expansion-type concrete anchors or adhesive-type anchors set in holes drilled in the concrete as a substitution for cast-in-place anchor bolts.

#### PART 2 – PRODUCTS

##### 2.01 MATERIALS

- A. Unless otherwise specified or indicated on the Drawings, materials of construction for anchoring devices shall conform to the following:
  - 1. Anchor bolts and other anchoring devices, nuts and washers installed indoors: Type 304 stainless steel.

2. Anchor bolts and other anchoring devices, nuts and washers installed outdoors or in locations exposed to wastewater: Type 316 stainless steel.
  - a. Locations exposed to wastewater includes:
    - 1) Below tops of walls of water-containing structures.
    - 2) Underside of roof, slab or walkways of enclosed water-containing structures.
    - 3) Dry side of walls on water-containing structures.

## **2.02 ANCHORING DEVICES**

### **A. Cast-in-Place Anchor Bolts**

1. Conform to ASTM A320.
2. Minimum Length of Bolt: Provide bolt length such that the length of the embedded anchor is at least 10 bolt diameters.
3. Minimum length of 90-degree hook: four bolt diameters.

### **B. Concrete Anchors**

1. Concrete Anchors: Drilled in place wedge-type anchors are not allowed.

### **C. Studs**

1. ASTM A 108 with 50,000 pounds per square inch minimum yield strength, and 60,000 pounds per square inch minimum tensile strength.
2. Manufacturers: One of the following or equal:
  - a. Nelson Stud Welding Company, S3L Shear Connectors or H4L Concrete Anchors.
  - b. Stud Welding Products, Headed Concrete Anchors and Shear Connectors or Concrete Anchors.

### **D. Chemical Anchors**

1. Do not use in overhead applications, in chlorine gas environments, or where anchor may be exposed to machine or diesel oils.
2. Materials: Type 304 stainless steel all-thread rod with vinyl ester resin adhesive.
  - a. Stainless steel all-thread rod: Conform with ASTM F 593.
3. Manufacturers: One of the following or equal:
  - a. Hilti HIT-HY 150 MAX (wet or dry).
  - b. Hilti HIT-RE 500 (submerged).
  - b. Simpson Set XP Adhesive.

## **PART 3 – EXECUTION**

### **3.01 GENERAL ANCHORING REQUIREMENTS**

- A. Install anchor bolts, concrete anchors and other anchoring devices with at least two threads projecting beyond the nut, but no more than ½ inch projecting beyond the nut.
- B. Prior to installing nuts, coat threads of stainless steel bolts with material to prevent galling of threads.
  - 1. Manufacturers: One of the following or equal:
    - a. Never Seez Compound Corporation, Never-Seez.
    - b. Oil Research, Inc., WLR No. 111.
- C. Tighten nuts on anchor bolts, concrete anchors and other anchoring devices to the "snug-tight" condition, defined as tightness attained by a few impacts of an impact wrench or the full effort of a man using an ordinary wrench.

### **3.02 CAST-IN-PLACE ANCHOR BOLTS**

- A. Accurately place anchor bolts to be embedded in concrete within the formwork and perpendicular to surface from which they will project. Secure in correct position while concrete is placed.
- B. Do not allow anchor bolts to touch reinforcing steel. Where anchor bolts are within ¼ inch of reinforcing steel, isolate with a minimum of four wraps of 10-mil polyvinyl chloride tape in area adjacent to reinforcing steel.
- C. In anchoring machinery bases subject to heavy vibration, use two nuts, with one serving as a locknut.
- D. Where bolts are indicated on the Contract Drawings for future use, first coat thoroughly with non-oxidizing wax, then turn nuts down full depth of thread and neatly wrap exposed thread with waterproof polyvinyl tape.
- E. Where indicated on the Contract Drawings, set anchor bolts in metal sleeves having inside diameter approximately two inches greater than the bolt diameter and a minimum of 10-bolt diameters deep. Fill sleeves with grout when equipment is grouted in place.
- F. Anchor bolts may be cast in concrete in lieu of using concrete anchors.

### **3.03 CONCRETE ANCHORS AND CHEMICAL ANCHORS**

- A. Do not use concrete anchors or chemical anchors in lieu of anchor bolts.
- B. Drill holes using concrete drill bits and impact type drill motors. Hole diameter shall be in accordance with the manufacturer's recommendations.

- C. Clean drilled hole using compressed air to dislodge and remove drilling dust.
- D. Accurately locate concrete anchors and set perpendicular to surfaces from which they will project. Minimum embedment lengths as indicated on the Contract Drawings.

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

## SECTION 09900

### PAINTING

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION

- A. Contractor shall furnish all labor, materials, equipment, and incidentals necessary to perform all painting as shown on the drawings, and as specified herein, including, but not limited to the following (Protective Coating System #):
1. Ductile iron pipe in the meter vaults (2).

##### 1.02 REFERENCES

- A. The following is a list of standards which may be referenced in this section:

Ductile Iron Pipe Research Association (DIPRA): Surface Preparation Specifications.

National Association of Corrosion Engineers (NACE): RP0188, Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates.

The Society for Protective Coatings (SSPC):

1. PA 1, Shop, Field, and Maintenance Painting.
2. PA 2, Measurement of Dry Coating Thickness with Magnetic Gages.
3. PA 3, Guide to Safety in Paint Applications.
4. SP 1, Solvent Cleaning.
5. SP 2, Hand Tool Cleaning.
6. SP 3, Power Tool Cleaning.
7. SP 5, Joint Surface Preparation Standard White Metal Blast Cleaning.
8. SP 10, Joint Surface Preparation Standard Near-White Blast Cleaning.

##### 1.03 DEFINITIONS

- A. Terms used in this section:

1. Coverage: Total minimum dry film thickness in mils or square feet per gallon.
2. MDFT: Minimum Dry Film Thickness, mils.
3. MDFTPC: Minimum Dry Film Thickness Per Coat, mils.
4. Mil: Thousandth of an inch.
5. PSDS: Paint System Data Sheet.
6. PVC: Polyvinyl Chloride.
7. SFPG: Square Feet Per Gallon.
8. SFPGPC: Square Feet Per Gallon Per Coat.

9. SP: Surface Preparation.

#### **1.04 SUBMITTALS**

##### **A. Paint Systems Data:**

1. For each paint system, furnish Paint System Data Sheet (PSDS), manufacturer's technical data sheets, and paint colors available (where applicable).
2. Submit Manufacturer's written verification that submitted products are suitable for the intended use.
3. If manufacturer of finish coating differs from that of shop primer, provide both manufacturers' written confirmation that materials are compatible.

#### **1.05 QUALITY ASSURANCE**

##### **A. Perform surface preparation and painting in accordance with recommendations of the following:**

1. Paint manufacturer's instructions.
2. SSPC PA 3, Guide to Safety in Paint Applications.
3. Standard preparations described herein.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials to Project site in unopened containers that plainly show designated name, date of manufacture, color, and manufacturer.
- B. Store paints in a protected area that is heated or cooled to maintain temperature range recommended by paint manufacturer.

#### **1.07 PROJECT CONDITIONS**

- A. Do not apply paint in temperatures outside of manufacturer's recommended maximum or minimum allowable, or in dust, smoke-laden atmosphere, damp or humid weather.
- B. Do not perform abrasive blast cleaning whenever relative humidity exceeds 85 percent, or whenever surface temperature is less than 5 degrees F above dewpoint of ambient air. Adhere to coating manufacturer's recommendations.

### **PART 2 - PRODUCTS**

#### **1.08 MANUFACTURERS**

- A. Paint manufacturer shall be nationally recognized manufacturer of paints and protective coatings and regularly engaged in production of such materials that have essentially identical service conditions as this Project.

- B. Minimum of 5 years verifiable experience in manufacture of specified products.
- C. Sherwin Williams, Frazee, Dunn Edwards, ZRC Worldwide, or approved equal.

**1.09 PAINT MATERIALS**

- A. Material Quality: Manufacturer’s highest quality products and suitable for the intended service. Primer and Finish Coats produced by same paint manufacturer. Thinners, cleaners, driers, and other additives as recommended by paint manufacturer of particular coating.
- B. Products:

<b>Product</b>	<b>Definition</b>
Bituminous Paint	Single-component, coal-tar pitch based
Epoxy Primer	Converted epoxy primer containing rust-inhibitive pigments, minimum 69% volume solids
High Build Epoxy	Polyamide or polyamidoamine epoxy, minimum 69% volume solids, capability of 4 to 8 MDFT per coat
Polyurethane Enamel	Two-component, acrylic based polyurethane; high gloss ultraviolet (UV) resistant finish
Cold-Galvanizing Repair	Single component, ASTM A-780 compliant metallic zinc coating, containing 95% zinc in the dried film, that imparts cathodic protection to ferrous metals

**1.10 COLORS**

- A. Provide as selected by City. Unless otherwise directed, apply ANSI No. 61 (gray) to exposed electrical cabinets, and Light Tan to Ductile Iron Pipe.
- B. Formulate with colorants free of lead, lead compounds, or other materials, which might be affected by presence of hydrogen sulfide or other gas likely to be present at Project site.
- C. Proprietary identification of colors is for identification only. Any authorized manufacturer may supply matches.

**1.11 DUCTILE IRON PIPE**

- A. Use DIPRA Surface Preparation Specification equivalent to SSPC grade specified.
- B. Prior to blast cleaning, grind smooth surface imperfections including, but not limited to, delaminating metal or oxide layers.
- C. Surface preparation and application of primer coats shall be performed by pipe manufacturer.

**2.05 SHOP FINISHES**

- A. Shop Blast Cleaning: Reference paragraph Shop Coating Requirements, this section.
- B. Surface Preparation: Provide Engineer minimum 7 days' advance notice to start of shop surface preparation work and coating application work.
- C. When required by equipment Specifications, equipment shall be primed and finish coated in shop by manufacturer and touched up in field with identical material after installation.
- D. Where manufacturer's standard coating is not suitable for intended service condition, Engineer may approve use of a tie-coat to be used between manufacturer's standard coating and specified field finish. In such cases, tie-coat shall be surface tolerant epoxy as recommended by manufacturer of specified field finish coat. Coordinate details of equipment manufacturer's standard coating with field coating manufacturer.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. Inspect and provide substrate surfaces prepared in accordance with these Specifications and printed directions and recommendations of paint manufacturer whose product is to be applied. In event of conflict, more stringent shall apply.
- B. Notify Engineer minimum 7 days' prior to start of surface preparation work or coating application work.
- C. Perform work only in presence of Engineer, unless Engineer grants prior approval to perform work in Engineer's absence.
- D. For coatings subject to immersion, obtain full cure for completed system. Consult coatings manufacturer's written instructions for these requirements. Do not immerse coating until completion of curing cycle.
- E. The intention of these Specifications is for new metal and submerged metal surfaces to be painted, whether specifically mentioned or not, except as modified herein.
- F. Perform painting in accordance with recommendations of the Paint manufacturer and federal, state, and local agencies having jurisdiction.

### **3.02 PROTECTION OF MATERIALS NOT TO BE PAINTED**

- A. Protect all surfaces adjacent to, or downwind of Work area from overspray. Contractor shall be responsible for any damages resulting from overspray.
- B. Remove, mask, or otherwise protect hardware, lighting fixtures, switchplates, aluminum surfaces, machined surfaces, couplings, shafts, bearings, nameplates on machinery, and other surfaces not specified elsewhere.

- C. Provide drop cloths to prevent paint materials from falling on or marring adjacent surfaces.
- D. Protect working parts of mechanical and electrical equipment from damage.
- E. Mask openings in motors to prevent paint and other materials from entering the motors.

### **3.03 FIELD SANDBLASTING**

- A. Perform sandblasting for items and equipment where specified, and as required to restore damaged surfaces previously shop or field blasted and primed. Materials, equipment, procedures shall meet requirements of the Society for Protective Coatings.

### **3.04 PREPARATION OF SURFACES**

- A. Metal Surface Preparation:

General:

1. Submit samples prior to surface preparation blasting.
2. Conform to current Society for Protective Coatings specifications as follows:
  - a. Solvent Cleaning: SP 1.
  - b. Hand Tool Cleaning: SP 2.
  - c. Power Tool Cleaning: SP 3.
  - d. White Metal Blast Cleaning: SP 5.
  - e. Near-White Blast Cleaning: SP 10.
3. Where OSHA or EPA regulations preclude standard abrasive blast cleaning, wet- or vacu-blast methods may be required. Follow coatings manufacturers' recommendations for wet-blast additives and first coat application.
4. Hand-tool clean areas that cannot be cleaned by power-tool cleaning.

Blast Cleaning Requirements:

5. Comply with applicable federal, state, and local, air pollution and environmental control regulations for blast cleaning and disposition of spent aggregate and debris.
6. Alternatives to standard abrasive blast cleaning methods subject to Engineer review.

### **3.05 PAINT MIXING**

- A. Prepare using all the contents of container for each component as recommended by paint manufacturer.

- B. Keep paint materials sealed when not in use.
- C. Where more than one coat of material is applied within given system, alternate color to provide visual reference that required number of coats has been applied.

### **3.06 PAINT APPLICATION**

#### **A. General:**

1. Inspection: Schedule with Engineer in advance for cleaned surfaces and all coats prior to succeeding coat.
2. Apply coating in accordance with paint manufacturer's recommendations. Allow sufficient time between coats to assure thorough drying of previously applied paint.
3. Paint units to be bolted together and to structures, prior to assembly or installation.
4. Extent of Coating (Immersion): Coatings shall be applied to internal vessel and pipe surfaces, nozzle bores, flange gasket sealing surfaces, carbon steel internals, and stainless steel internals, unless otherwise specified.

#### **B. Shop Primed or Factory Finished Surfaces:**

1. Inspection: Schedule inspection for compliance with Specifications of shop primed or factory finished items with Engineer in advance of delivery to jobsite.
2. Hand or power sand areas of chipped, peeled, or abraded coating, feathering the edges. Follow with a spot primer using specified primer.
3. For two-package or converted coatings, consult coatings manufacturer for specific procedures as relates to manufacturer's products.
4. Prior to application of finish coats, clean shop-primed surfaces free of dirt, oil, and grease and apply mist coat of specified primer, 1-mil dry film thickness.
5. After welding, prepare and prime holdback areas as required for specified paint system. Apply primer in accordance with manufacturer's instructions.

C. Manufacturer Applied Paint Systems:

1. Repair abraded areas on factory finished items in accordance with the equipment manufacturer's directions.
2. Carefully blend repaired areas into original finish.

**3.07 FIELD QUALITY CONTROL**

A. Testing:

1. Magnetic type dry film thickness gauge, to test coating thickness specified in mils, as manufactured by Nordson Corp., Anaheim, CA; Mikrotest.
2. Electrical holiday detector, low voltage, wet sponge type, to test completed coating systems, 20 mils or less MDFT, for holidays and discontinuities as manufactured by Tinker and Razor, San Gabriel, CA, Model M-1.
3. High voltage holiday detector for coatings in excess of 20 mils MDFT. Unit to be as recommended by coating manufacturer.

B. Number of Coats:

1. Minimum required, irrespective of coating thickness.
2. Additional coats may be required to obtain minimum required paint thickness, depending on method of application, differences in manufacturers' products, and atmospheric conditions.

C. Application Thickness:

1. Do not exceed coating manufacturer's recommendations.
2. Use wet film thickness gauge to measure proper coating thickness during application.

D. Film Thickness Measurement and Electrical Inspection of Coated Surface:

1. Perform with properly calibrated instruments.
2. Recoat and repair as necessary for compliance with Specifications.
3. Coats will be subject to inspection by Engineer and coating manufacturer's representative.

E. Give particular attention to edges, angles, flanges, and other similar areas, where insufficient film thickness are likely to be present, and ensure proper millage in these areas.

F. Apply additional coats as required to complete hiding of underlying coats. Hiding shall be so complete that additional coats would not increase hiding.

G. Thickness and Continuity Testing:

1. Measure coating thickness specified in mils with magnetic type dry film thickness gauge in accordance with SSPC PA2.
2. Check each coat for correct millage. Do not make measurement within 8 hours, minimum, after application of coating.
3. Test finish coat, 20 mils thick or less, except zinc primer, galvanizing, and elastomeric coatings, for holidays and discontinuities with electrical holiday detector, low voltage, wet sponge type in accordance with NACE RP0188.
4. Holiday detect coatings in excess of 20 mils MDFT with high voltage units recommended by coating manufacturer, and in accordance with NACE RP0188.
5. After repaired and recoated areas have dried sufficiently, retest each repaired area. Final test may also be conducted by Engineer.

H. Damaged Coatings, Pinholes, and Holidays:

1. Feather edges and repair in accordance with recommendations of paint manufacturer.
2. Hand or power sand visible areas of chipped, peeled, or abraded paint, and feather edges. Follow with primer and finish coat in accordance with Specifications. Depending on extent of repair and appearance, finish sanding and topcoat may be required.

I. Apply finish coats, including touchup and damage-repair coats, in a manner, which will present uniform texture and color-matched appearance.

J. Unsatisfactory Application:

1. Clean and top coat surfaces found to have improper finish color or insufficient film thickness.
2. Evidence of runs, bridges, shiners, laps, or other imperfections shall be cause for rejection.
3. Repair defects in coating system per written recommendations of coating manufacturer.

K. Leave staging up until Engineer has inspected surface or coating. Replace staging removed prior to approval by Engineer.

**3.08 CLEANUP**

- A. Place cloths and waste that might constitute fire hazard in closed metal containers or destroy at end of each day.
- B. Upon completion of work, remove staging, scaffolding, and containers from site or destroy in legal manner.

- C. Completely remove paint spots, oil, or stains from adjacent surfaces and floors and leave entire job clean.

**3.09 PROTECTIVE COATINGS SYSTEMS**

- A. System No. 2 Ductile Iron Pipe:

Surface Prep.	Paint Material	Min. Coats, Cover
SP 5, White Metal Blast Cleaning	Prime in accordance with manufacturer's recommendations	
	High Build Epoxy	2 coats, 16 MDFT

**3.10 SURFACES NOT REQUIRING PAINTING**

- A. Unless otherwise stated herein or shown, the following areas or items will not require painting:
1. Concrete and masonry surfaces.
  2. Nonferrous and corrosion-resistant ferrous alloys such as copper, bronze, Monel, aluminum, chromium plate, atmospherically exposed weathering steel, and stainless steel, except where required for electrical insulation between dissimilar metals; where aluminum is in contact with concrete or masonry, or where color coding of equipment and piping is required.
  3. Nonmetallic materials such as glass, wood and porcelain, except as required for architectural painting or color coding.
  4. Prefinished electrical and architectural items such as motor control centers, switchboards, switchgear, panelboards, transformers, disconnect switches, building louvers, and wall panels.
  5. Nonsubmerged electrical conduits attached to unpainted concrete surfaces.
  6. Items specified to be galvanized after fabrication, unless specified elsewhere or subject to immersion.

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

## SECTION 15010

### GENERAL MECHANICAL REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION

- A. Work Included: Provisions of this Section include all materials, labor and services necessary to furnish, install and conduct specified tests under actual operating conditions for Mechanical Work shown on the plans and/or wherever specifically required in these specifications.

##### 1.02 QUALITY ASSURANCE

- A. Equipment, piping, wiring and supports shall be provided to produce complete, operable systems with all elements properly interconnected as shown in schematic diagrams, as shown on the approved shop drawings, and/or as required to provide specified operations. If a specific dimensioned location is not shown for interconnections or smaller system elements, the Contractor shall select appropriate locations and show them on Shop Drawings submitted for review.
- B. Equipment and materials shall be new and without imperfections and shall be erected in a neat and workmanlike manner; aligned, leveled, cleaned and adjusted for satisfactory operation; installed in accordance with the recommendations of the manufacturers and the best standard practices for this type of work so that connecting and disconnecting of piping, equipment and accessories can be readily made, and all parts are easily accessible for inspection, operation, maintenance, and repair.

##### 1.03 MANUFACTURER'S INSTRUCTIONS

- A. The recommendations and instructions of the manufacturers of products used in the work are hereby made part of these Specifications, except as they may be superseded by other requirements of these Specifications.
- B. During the initial operation of the equipment, where specified, the manufacturers' representatives shall stay at the equipment site until proper operation is attained, unless other arrangements have been made with the Engineer. See the specific Equipment Specifications for recommended supervision periods. The Contractor shall have the sole responsibility for proper functioning of the equipment.

##### 1.04 SUBMITTALS

- A. Each piece of equipment, for which certified witnessed or non-witnessed performance tests are required, shall be accompanied by a completed form which will contain at least the following information:

1. Owner's name and location of project.
2. Contractor's name and subcontractor if applicable.
3. Name of item being submitted.
4. Specification reference by section, paragraph and page.
5. Data on item (manufacturer, general descriptive data, dimensions, size of connections, speeds, performance curves, serial number).
6. Motor data, type, voltage, frequency, phase, full load amperes, starting method, frame sizes, enclosure insulation type (NEMA Code letter), dimensions, service factor, efficiency, serial number.
7. Date and signature of person certifying the performance.

### **1.05 COVERING WORK**

- A. No work shall be covered or enclosed until it has been tested and inspected and then approved by the Engineer. Any work covered prior to such inspection, test, or approval shall be uncovered, if so requested, and after approval, covered again without cost to the City.

## **PART 2 - PRODUCTS**

### **2.01 DESIGN**

- A. General: All equipment shall be designed for the service intended, shall be of rugged construction, of ample strength for all stresses which may occur during fabrication, transportation, erection and during continuous or intermittent operation, shall be adequately stayed, braced and anchored, and shall be installed in a neat and workmanlike manner. Appearance and safety, as well as utility, shall be given consideration in the design of details. Materials of construction shall be cathodically compatible.
- B. Seismic: All equipment shall be anchored to resist axial and seismic forces. This requirement applies, but is not limited to light fixtures, tanks, railings, electrical and instrumentation panels, pumps, piping, generators, motors, cabinets, shelving, fans, and air ducts. The design of the anchoring system shall be the responsibility of the manufacturer or supplier. Anchorage shall be made to structural elements only, and shall be so designed and installed that the resisting capabilities of the structural elements are not exceeded. If, in the opinion of the manufacturer or Contractor, the available structural elements are incapable of resisting the seismic anchorage forces, the Engineer shall be notified in writing. Unless otherwise approved, anchor bolts shall be sized in accordance with Section 05501.
- C. Noise: When in operation no single piece of equipment shall exceed the OSHA noise level requirements for a one hour exposure

### **2.02 MATERIALS AND STANDARDS**

- A. Materials: Design, fabricate and assemble equipment and systems with new materials in accordance with acceptable modern engineering and shop practices.

Manufacture individual parts to standard sizes and gauges so repair parts can be installed in the field. Make like parts of duplicate units interchangeable. Do not place equipment in service at any time prior to delivery except as required for factory or shop tests.

- B. Uniformity: Unless otherwise specified, equipment or material of the same type or classification used for the same purpose shall be the product of the same manufacturer and shall be the same model.

### **2.03 LIFTING EYES**

- A. All equipment weighing over 100 pounds shall be supplied with lifting eyes. Parts of equipment assemblies which are normally serviced separately, such as motors, shall have lifting eyes of their own in accordance with this section.

### **2.04 NAMEPLATES**

- A. Equipment nameplates shall be engraved or stamped of stainless steel and fastened to the equipment in an accessible, conspicuous location with oval head stainless steel screws or drive pins. Identify equipment with symbols shown on drawings.

### **2.05 TOOLS AND SPARE PARTS**

- A. All special tools required for exclusive operation and maintenance of respective items of equipment shall be furnished for those items of equipment by the manufacturer. This includes special tools, instruments, accessories required for proper "in-plant" adjustment, maintenance, overhaul and operation. Tools shall be high-grade, smooth, forged, alloy tool steel. Instruments or accessories shall be of top quality.
- B. All tools and spare parts shall be carefully packed in wood or metal chests or containers labeled with indelible markings and shall be adequately treated for a long period of storage. Complete ordering information including manufacturer, part number, part name and equipment name and number(s) for which the part is to be used shall be supplied with the required spare parts. Deliver and store tools and spare parts in a location and method as directed by the Engineer.
- C. Spare parts for equipment provided have been specified in pertinent sections of the Specifications. Collect and store spare parts as required in an area to be designated by the Engineer. In addition, furnish the Engineer with an inventory listing all spare parts, the equipment they are associated with, the name and address of the supplier, and the delivered cost of each item. Copies of actual invoice for each item shall be furnished with inventory to substantiate the delivery.

### **2.07 PROTECTION AGAINST ELECTROLYSIS**

- A. Where dissimilar metals are used in conjunction with each other, suitable insulation shall be provided between adjacent surfaces so as to eliminate direct contact and any resultant electrolysis. The insulation shall be bituminous impregnated felt,

heavy bituminous coatings, nonmetallic separators or washers or other approved materials. Connections of dissimilar piping materials shall utilize dielectric unions, flanges, couplings or bushings.

### **PART 3 - EXECUTION**

#### **3.01 INSTALLATION**

- A. Installation shall be as shown by skilled mechanics in strict accordance with the respective manufacturer's instruction and recommendations and in the locations shown on the drawings.
- B. Coordinate installation with equipment manufacturer requirements and all related work in conformance with the drawings and specifications.
- C. Installation and testing of piping and all equipment shall be as specified under the respective sections for the different types of pipe and equipment.

#### **3.04 EQUIPMENT START-UP, TESTING, AND ADJUSTMENT**

- A. Conform to Sections 01650 and 17102.
- B. Each facility shall be demonstrated to be in full operating order prior to acceptance. Should any equipment or part thereof fail to operate as intended, it shall be immediately removed and replaced at the Contractor's expense.

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

**SECTION 15060**  
**EQUIPMENT MOUNTING**

**PART 1 - GENERAL**

**1.01 SCOPE**

- A. This section includes mounts, supports, and the anchorage for equipment, piping, and accessories.

**1.02 QUALITY ASSURANCE**

- A. Support, anchorage, and mounting of all piping, and equipment shall be provided by the Contractor according to manufacturer's recommendations, *Uniform Building Code*, and industry standards requirements unless otherwise specified. All elements required to resist the calculated forces described herein or required by the equipment manufacturer shall be provided by the Contractor.

**PART 2 - PRODUCTS**

**2.01 GENERAL**

- A. Equipment mountings shall be as shown.
- B. Anchor and assembly bolts shall be of ample size and strength for the purposes intended as determined by the equipment manufacturer in accordance with the requirements of this section. Anchor bolt material shall be stainless steel unless otherwise approved, shown, or directed.

**PART 3 - EXECUTION**

**3.01 INSTALLATION**

- A. EQUIPMENT
1. Each piece of equipment shall be anchored to resist axial as well as lateral forces as required by the latest edition of the Uniform Building Code (UBC), or as required by the manufacturer of the equipment. Unless otherwise approved, anchor bolts shall be sized in accordance with Section 05501. No equipment shall be anchored to vertical structural elements without written approval of the Engineer.
  2. Equipment that is not vibration isolated shall be anchored directly to the supporting floor system. In addition to the anchorage, all such equipment shall be internally designed so that all static and moving parts are anchored to the supporting framework to resist the imposed seismic force. All forces must be transmitted to the base in order to be anchored as required. Vibration isolated equipment shall comply with these same requirements.

## B. PIPING

1. All piping, raceways, accessories, and appurtenances furnished with equipment shall be anchored to resist a lateral seismic force of 30% of its operating weight without excessive deflection. This force shall be considered acting at the center of gravity of the piece under consideration.
2. Piping with flexible connections and/or expansion joints shall be anchored such that the intended uses of these joints are maintained in the piping system.

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

## **SECTION 15100 PLANT PIPING**

### **PART 1 - GENERAL**

#### **1.01 SCOPE**

- A. This section covers all work necessary to furnish and install polyvinyl chloride (PVC) piping, PVC drain piping, ductile iron piping (DIP), Acrylonitrile-Butadiene-Styrene piping (ABS), and piping accessories, as shown on the drawings, and specified herein.

#### **1.02 SUBMITTALS**

- A. Submittals shall demonstrate full compliance with all aspects of this specification and shall include, but not be limited to, complete manufacturer's data on pipe material, fittings, and coatings.

### **Part 2 - MATERIALS**

#### **2.01 DIP PIPING**

- A. DIP pipe and fittings shall conform to CSSS Section 10-28.3.
- B. Unless otherwise directed, provide joint types as shown on the plans.

#### **2.02 FLEXIBLE COUPLINGS**

- A. Furnish and install flexible couplings where shown on the drawings or otherwise required for the installation. Couplings shall be suitable for minimum working pressure of one hundred fifty (150) psi.
- B. Flexible couplings shall be Rockwell (Smith-Blair) Type 411, Dresser Style 38, or equal with the stop removed from the middle ring.

#### **2.03 FLANGE ADAPTERS AND MECHANICAL JOINT RESTRAINTS**

- A. Provide ductile iron fittings as manufactured by EBBA Iron, Inc., or approved equal.

### **Part 3 - EXECUTION**

#### **3.01 PREPARATION AND HANDLING OF PIPE**

- A. Inspect all pipe, specials, and interior and exterior protective coatings before installation. Damaged areas, which are repairable in the opinion of the Engineer, shall be patched in the field with material similar to the original. Pipe unable to be repaired shall be removed from the project site and replaced with new, undamaged pipe. Clean ends of pipe thoroughly. Remove foreign matter and dirt from inside of pipe and keep clean during and after laying.
- B. Use proper implements, tools and facilities for the safe and proper protection of the

pipe. Carefully handle pipe in such manner as to avoid any physical damage. Do not drop or dump pipe into trenches.

### **3.02 INSTALLATION OF PIPING**

#### **A. GENERAL**

1. ABS piping shall be installed in accordance with CSSS Section 26.
2. PVC and DIP piping shall be installed as indicated on the drawings and in general conformance with the applicable portions of CSSS Section 27.
3. All pipe shall be carefully placed and supported at the proper lines and grades and, where possible, shall be sloped to permit complete drainage. Piping runs shown on the drawings shall be followed as closely as possible, except for minor adjustments to avoid structural features. If major relocations are required, they shall be approved by the Engineer.
4. All flanges shall be set true and perpendicular to the axis of the pipe.
5. Piping shall be installed without springing or forcing the pipe in a manner which would set up stresses in the pipe, valves, or connected equipment

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

## SECTION 15200

### VALVES AND APPURTENANCES

#### PART 1 - GENERAL

##### 1.01 SCOPE

- A. This section covers all work necessary to furnish and install, complete and operable, valves and appurtenances as shown on the drawings and specified herein, and as referred to in Section 15100: Plant Piping.
- B. Where two or more valves of the same type and size are required, the valves shall be furnished by the same manufacturer.

##### 1.02 SUBMITTALS

- A. Provide a submittal for all proposed valve types to be furnished. Submittals shall demonstrate full compliance with all aspects of this specification.

##### 1.03 REFERENCE STANDARDS

- A. The standards listed below are part of this section as specified and modified. In case of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

References	Title
AWWA C509	Resilient Seated Gate Valves for Water and Sewerage
AWWA C550	Standard For Protective Coatings for Valves

#### PART 2 - PRODUCTS

##### 2.01 GENERAL

- A. Materials shall be suitable for the intended application. Materials not indicated shall be high-grade standard commercial quality, free from defects and imperfections that might affect the serviceability of the product for the purpose for which it is intended.
- B. Valves shall be furnished full-line size unless specifically called out to be of reduced size. Flanges for valves may be raised or plain face. Flanges for valves shall be faced and drilled to Class 150 dimensions per ANSI B16.1. All valves shall have a minimum pressure rating of 150 psi, unless otherwise indicated.
- C. Unless otherwise specified, the interior and exterior surfaces of all iron-body valves shall be epoxy coated. Valve Manufacturer shall certify in writing that the required coating has been applied and tested in the manufacturing plant prior to shipment. Valve flange faces shall not be epoxy coated.
- D. Cast name of manufacturer and size of valve on body or bonnet or show on a

permanently attached label in raised letters. Label shall be of 1/16-inch plastic or stainless steel, minimum 2 inches by 4 inches in size, permanently attached to the valve or on the wall adjacent to the valve as approved by the Engineer.

## **2.02 GATE VALVES**

- A. Gate valves 3-inch and larger shall be resilient seated types conforming to AWWA Standard C-509. The valves shall be suitable for a design working water pressure of 200 psig, with flanged, bell and spigot, or mechanical joint ends as indicated. Valve body, bonnet, and wedge/disc, shall be constructed of ductile iron. The exterior of the iron wedge shall be fully encapsulated with rubber. Buried valves shall be non-rising stem with a 2" square nut. Above-ground valves shall be rising stem with handwheel. All internal and external surfaces of the valve body and bonnet shall have a fusion bonded epoxy coating, complying with ANSI/AWWA C550, applied electrostatically prior to assembly. Body and bonnet wall thickness shall be equal to or greater than the minimum wall thickness as listed in Table 2 of ANSI/AWWA C509. The stem, stem nuts, glands, and bushings shall be of bronze, with the stem seal per ANSI/AWWA C 509. Gate valves shall be Series 2500 manufactured by American Flow Control, or equal.
- B. Gate Valves smaller than 3-inch, for general purpose use, shall be non-rising stem, heavy-duty type for industrial service, with screwed or soldered ends to match the piping. The bodies shall have union bonnets of bronze conforming to ASTM B 62 - Composition Bronze or Ounce Metal Castings. The stems shall be of bronze conforming to ASTM B 62, or ASTM B 371 - Specification for Copper-Zinc-Silicon Alloy Rod. The solid wedges shall be of bronze conforming to ASTM B 62. The valves shall have malleable iron hand wheels, unless otherwise indicated, and stem seals shall be of Teflon-impregnated or other acceptable non-asbestos packing.

## **2.03 SWING CHECK VALVES**

- A. Provide swing check valves with a cast iron body, flanged ends, bronze trim, bolted cap, renewable bronze seat and disc, non-asbestos gasket, outside lever and weight, suitable for installation in a horizontal position, or in a vertical position with upward flow. Valves shall be Mueller Catalog No. A-2600-6-02, Clow Catalog No. F-5380, or approved equal.

## **2.04 KNIFE GATE VALVES**

- A. Knife gates for use in the valve vaults shall be hand wheel operated, full round ported, resilient seated, bonnetless type valves, with either cast type 316 stainless steel bodies, or cast iron bodies with type 316 stainless steel liners. All wetted parts shall be made of type 316 stainless steel. Knife gates for use in the wetwell shall be furnished with a 2-inch square operator nut.
- B. The resilient seat shall be a molded or extruded elastomer with an internal stainless steel rod for stiffening. Seat retainers shall be provided in the lower half of the body to retain the seat and guide the gate.
- C. Packing gland shall be provided with sufficient gland bolts to provide even tightening of the packing. Packing shall be Teflon lubricated synthetic packing with a

minimum of 4 rows of packing. Packing gland bolts, studs and nuts shall be type 304 stainless steel.

- D. Valve stem shall be 304 stainless steel with full ACME threads. The lifter shall be cast 304 stainless steel, welded to the stem and be a two horizontal bolt design. Stem nut shall be bronze.
- E. Provide DeZurik type "KGL", Red Valve series "G", or approved equal valves.
- F. For wetwell valves, provide an operator stem extension, stem guides, and all appurtenances to allow valve operation from the top of the wet well by use of a T-handled wrench. With the exception of the valve, all materials within the wet well shall be type 316 stainless steel, including anchor bolts. Stem guides and stem extension shall be sized in accordance with the valve manufacturer's requirements. Locate the 2-inch square operating nut on the stem extension centered beneath the removable plate in the basin cover.

## **2.05 ACCESSORIES**

- A. Provide cast iron valve cover boxes for buried service valves capable of withstanding H2O loading complete with all necessary bases and accessories. Provide bolt-down covers utilizing type 304 stainless steel bolts. If required provide extension piece to bring the 2-inch square operating nut to within 6 inches of the ground surface. Extension shall be as recommended by the valve manufacturer.

## **PART 3 - EXECUTION**

### **3.01 PLACING**

- A. General: All valves and shutoff assemblies shall be installed in a workmanlike manner in strict accordance with the manufacturer's recommendations.
- B. Brace to prevent warpage under the intended use. Valves shall be firmly supported to avoid undue stresses on the pipe.
- C. Buried iron body valves shall be wrapped in 8-mil polyethylene wrap per ANSI/AWWA C105/A21.5 prior to being backfilled.

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

## **SECTION 16051 - ELECTRICAL WORK, GENERAL**

### **PART 1 - GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Provide electrical work complete in accordance with the Contract Documents.

#### **1.02 APPLICABLE CODES AND REQUIREMENTS**

- A. The work of this Section and all sections in Division 16 shall comply with the latest editions of the following:
  - 1. NEC (NFPA 70) – National Electrical Code
  - 2. Title 8, Subchapter 5, California Administrative Code – Electrical Safety Orders (Cal-OSHA)
- B. All electrical equipment shall be listed by and shall bear the label of Underwriters' Laboratories, Inc. (UL), or by an independent testing laboratory acceptable to the local code enforcement agency having jurisdiction.
- C. Installation of electrical equipment and materials shall comply with Cal-OSHA, state building standards, and applicable local codes and regulations.

#### **1.03 INSPECTION OF THE SITE AND EXISTING CONDITIONS**

- A. If pre-bid meeting is required and it includes a site visit; visit the sites and determine conditions at the sites and at all existing structures in order to become familiar with all existing conditions and electrical systems which will, in any way or manner, affect the work required under this Contract. No subsequent increase in Contract cost will be allowed for additional work required due to failure to fulfill this requirement.
- B. Protect all existing aboveground and underground utilities during construction. Pay for all repairs should damage to underground utilities occur during construction.

#### **1.04 RESPONSIBILITY**

- A. Complete systems functionally operational in accordance with the intent of these Contract Documents.
- B. Coordinating the details of facility and process equipment layouts and construction for all Specification Divisions which affect the work covered under Division 16.

- C. Furnishing and installing all incidental items not actually shown or specified, but which are required by good practice to provide complete functional systems.
- D. Submit a complete copy of red lined as-builts every month after the Notice to Proceed date in accordance with the Record Drawing requirements of Section 01105. At end of project, prior to final acceptance and final payment, field confirm red lined as-builts with City Operation and Maintenance staff. Confirmation shall review in field the installed work versus the red lined as-builts. City Operation and Maintenance staff must approve the red lined as-builts for project acceptance and payment.

#### **1.05 INTENT OF DRAWINGS**

- A. The Contract Drawings indicate the extent, general location, and arrangement of equipment. Conduit runs are diagrammatic and may not show the exact locations for installation. Verify the locations of conduit stub-ups based upon conduit entry space of equipment furnished from the manufacturer's certified shop drawings and by inspection of the actual equipment to be installed. Coordinate with serving utilities and City for exact location of substructures.
- B. In general, where the background on Contract Drawings has been screened, the area screened is work other than electrical, unless otherwise noted. Work under this Division 16 is shown heavier for contrast.

#### **1.06 CONDUIT TRENCHES**

- A. As-built the conduit trenches. Provide physical locations with width and depth call outs.

#### **1.07 CONTRACTOR SUBMITTALS**

- A. Provide manufacturers' catalog cut sheets and conductor & conduit schedules.

#### **1.08 TEMPORARY POWER AND LIGHTING**

- A. Provide temporary power and lighting for in accordance with NEC article 590. The average lighting level (foot-candle) shall meet OSHA 1926.56 and Cal-OSHA requirements.

#### **1.09 DEFINITIONS (APPLICABLE TO SPECIFICATIONS AND DRAWINGS)**

- A. Above Grade – Not buried in ground and not embedded in concrete slab on ground.

- B. Below Grade – Buried in ground and below floor slab as applicable, and not embedded in concrete slab on ground.
- C. Exposed – Either visible or subject to mechanical or weather damage, indoor or outdoor, include areas such as mechanical and storage rooms. In general any item that is directly accessible without removing walls, panels, ceilings or other parts of structure.
- D. Underground – Buried in ground, including under building slabs.

## **1.10 WARRANTY**

- A. The warranty for all provided equipment shall be not less than one year after approved and witnessed startup and receipt of approved as-built drawings and O&M Manuals, or City beneficial use, whichever is later.

## **PART 2 - PRODUCTS**

### **2.01 GENERAL**

- A. All equipment and materials shall be new, shall be listed by UL, and shall bear the UL label where UL requirements apply. All equipment and materials shall be the products of experienced and reputable manufacturers in the industry. Similar items in the work shall be products of the same manufacturer. All equipment and materials shall be of industrial grade standard of construction.

### **2.02 MOUNTING HARDWARE**

- A. All nuts, bolts, and washers and miscellaneous hardware shall be 316 stainless steel Miscellaneous Hardware
- B. Anchors for attaching equipment to concrete walls, floors and housekeeping pads shall be 304 stainless steel chemical anchors.

### **2.03 ELECTRICAL IDENTIFICATION**

- A. All conductors and conduits shall be labeled.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. Incidentals: Provide all materials and incidentals required for a complete conduit system, even if not required explicitly by the Specifications or the Drawings.

- B. Workmanship: All materials and equipment shall be installed in strict accordance with the printed recommendations of the manufacturer. Installation shall be accomplished by workers skilled in the work. Installation shall be coordinated in the field with other trades to avoid interferences.
- C. Protection of Equipment and Materials: Protect all materials and equipment against damage from any cause. All materials and equipment, both in storage and during construction, shall be covered in such a manner that no finished surfaces will be damaged, marred, or splattered with water, foam, dust, dirt, plaster, or paint. All moving parts shall be kept clean and dry. Replace or refinish all damaged materials or equipment, including face plates of panels, at no additional expense to the contract.

### **3.02 EQUIPMENT ANCHORING**

- A. Conduits shall be anchored in place by methods that will meet project seismic requirements.

### **3.03 EQUIPMENT IDENTIFICATION**

- A. General: Equipment and Devices shall be Identified as Follows:
  - 1. All conductors and conduits shall be labeled. If no tag number is given, assign and submit a number for approval.

### **3.04 CUTTING AND PATCHING**

- A. Lay out work carefully in advance. Do not cut, drill, or notch any structural member or building surface without the specific approval of the Engineer. Carefully carry out any cutting, channeling, chasing, or drilling of floors, walls, partitions, ceilings, paving, or other surfaces required for the installation, support, or anchorage of conduit, raceways, or other electrical materials and equipment. Following such work, restore surfaces neatly to original condition.

### **3.05 CLEANING AND TOUCHUP PAINTING**

- A. Keep the premises free from an accumulation of waste material or rubbish. Upon completion of the work, remove all materials, scraps, and debris from the premises and from the interior and exterior of all devices and equipment. Touch up scratches, scrapes, or chips in interior and exterior surfaces of devices and equipment with finishes matching as nearly as possible the type, color, consistency, and surface of the original finish. If extensive damage is done to equipment paint surfaces, refinish the entire equipment in a manner that provides a finish equal to or better than the factory finish, that meets the requirements of the Specifications, and that is acceptable to the Engineer.

### **3.06 INSPECTION**

- A. Allow materials, equipment, and workmanship to be inspected at any time by the Engineer.
- B. Correct the work, materials, or equipment not in accordance with these Contract Documents or found to be deficient or defective in a manner satisfactory to the Engineer.

### **3.07 RECORD DRAWINGS**

- A. Provide two sets of full-sized marked-up as-built Contract Drawings in accordance with specifications. Show all departures from original Drawings, underground cable, conduit, or duct runs dimensioned from established building lines, and all electrical work revisions. As-built drawings shall be initialed by the Engineer prior to submission for drafting. Obtain two new, clean sets of Contract Drawings for as-built production after each as-built submittal.

**END OF SECTION**

## **SECTION 16113 - ELECTRICAL SYSTEM**

### **PART 1 - GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Provide electrical systems, complete and in place, in accordance with the Contract Documents.

#### **1.02 CONTRACTOR SUBMITTALS**

- A. General: Submittals shall be furnished in accordance with Section 01105 and Section 16051 – Electrical Work, General.
- B. Catalog data: Complete catalog cut sheets of all conductors, raceways, conductor & raceway tags, touchup compound, fittings, boxes, supports, sand, warning tape, and mounting hardware, marked where applicable to show proposed materials and finishes.
- C. RGS/PVC manufacturer's training and contractor certification.
- D. Conduit and Conductor Tags and Inscriptions: Submit tag materials and inscription schedules for approval.
- E. As built drawings showing routing and depth of underground conduits.

#### **1.03 QUALITY ASSURANCE**

- A. Seismic Design Requirements: All raceway systems to be furnished under this Section shall be designed and constructed to meet the seismic requirements of Section 16050 – Electrical Work, General.
- B. Demonstrate to the Engineer that the approved manufacturer's recommended tools, patching techniques and installation methods are being utilized on the job site by all persons engaged in the installation of RGS/PVC, elbows, nipples, and fittings. These tools and methods shall include, but not be limited to, clamp inserts for use on power-driven units, vises, new die heads and enlarged pipe guides in conduit threading machines, and strap wrenches and extra wide wrench jaws for use in conduit assembly.

### **PART 2 - PRODUCTS**

#### **2.01 GENERAL**

- A. Conduit bodies, fittings, and other indicated enclosures which are dedicated to the raceway system, shall comply with the requirements of this Section.

- B. Set screw or thread-less type couplings, bushings, elbows, nipples and other fittings are not allowed.
- C. No conduit shall be smaller than 1-inch.
- D. Conduits containing manufacturer cables shall be sized based on approved manufacturer cable at minimum 40-percent fill, unless approved by the Engineer.
- E. Electrical Metallic Tubing and Intermediate Metallic Conduit will not be accepted.

## **2.02 RIGID GALVANIZED STEEL/PVC COATED (RGS/PVC) CONDUIT**

- A. RGS/PVC conduit and couplings shall be mild steel, hot-dip galvanized inside and out manufactured in accordance with NEMA RN-1, ANSI C80.1 and UL-6.
- B. A PVC coating shall be bonded to the outer surface of the galvanized conduit. The bond between the coating and the conduit surface shall be greater than the tensile strength of the coating per ETL PVC-001. PVC coating thickness shall be not less than 40-mil. Interior coating shall be minimum 2-mil urethane. All female threads on conduit, elbows and nipples shall be protected by urethane coating. PVC sleeve extending one pipe diameter shall be formed at all female fittings. 90° bends shall utilize factory manufactured elbows. Touch up compound shall be the same manufacturer as the RGS/PVC conduit.
- C. Manufacturers: Robroy Plasti-Bond RED PRHCONDUIT-x, PRCPLG-x, PRHELB-Xx90, PBTOUCHUP-GRAY-PT, PBTHREAD-COMPOUND; Calbond PVxx10CT00, PVxx00CP00, PVxx90EL00, PV-TOUCHUP-GRAY-PT, PV-THREAD-COMPOUND, or equal.

## **2.03 RIGID GALVANIZED STEEL (RGS) CONDUIT**

- A. RGS conduit and couplings shall be threaded, mild steel, hot-dip galvanized inside and out manufactured in accordance with NEMA RN-1, ANSI C80.1 and UL-6. Bends shall utilize factory manufactured elbows threaded both ends. Quick couple steel couplings are not acceptable.
- B. Manufacturer: Allied Tube & Conduit GRC series or equal.

## **2.04 LIQUID-TIGHT FLEXIBLE METAL CONDUIT AND CONNECTORS**

- A. Liquid-tight flexible metal conduit shall be constructed of a flexible interlocked galvanized steel core with a PVC outer jacket. Connectors shall be compatible with the flexible conduit. Connector shall be cadmium-plated malleable iron body, gland nut with cast-in lug, brass grounding ferrule threaded to engage conduit spiral, neoprene O-ring and insulated

throat. Manufactured in accordance with UL514B and ANSI standards. Liquid-tight conduit shall be type UA in conformance with UL360. 90° flex connectors are not allowed.

- B. Manufacturer: Anamet Anaconda Sealtite Type UA, Appleton Type STB, or equal.

## **2.05 RGS CONDUIT BODIES AND FITTINGS**

- A. RGS conduit bodies shall be fabricated from cast iron ally with zinc electroplate, threaded type, with covers attached by means of holes tapped into the body. RGS conduit bodies shall have neoprene gasket and stainless steel screws and conform to ANSI C80.1 and UL 514A. Covers attached by means of clips or clamps will not be accepted
- B. Locknuts shall be extra heavy electrogalvanized steel for sizes up to 2 inches. Bonding and grounding bushings shall be threaded, insulated locking type (set screw) and shall be provided with a feed-through compression lug for securing the ground cables. Unions shall be malleable iron; zinc plated three piece types. Threaded hubs for connection of conduit to junction, device or terminal boxes shall be made of zinc electroplated cast ferrous alloy or nickel chrome-plated zinc and shall have insulated liner with a grounding locknut. The hubs shall utilize a neoprene O-ring and shall provide a watertight connection. Reducing bushings shall have NPT Male by NPSM female threads. Drains shall be threaded, electrogalvanized steel, chromate treatment and stainless steel screen.
- C. Manufacturer: OZ Gedney UNF/UNA & 370/106 CHM-T series, Meyers STG series, Crouse-Hinds CD & RE series, or equal.

## **2.06 RGS/PVC CONDUIT BODIES AND FITTINGS**

- A. RGS/PVC conduit bodies and fittings shall be cast ferrous, threaded type with five full threads, have a 40-mil minimum PVC exterior coating and 2-mil internal urethane coating with pressure sealing sleeves on all conduit openings. Conduit body covers shall have captive 316SS screws and integral V-seal gasket. Covers attached by means of clips or clamps will not be accepted.
- B. RGS/PVC hubs shall be cast ferrous, set-screw, grounding type. Reducing bushings shall have NPT Male by NPSM female threads with polyurethane coating inside and out. Unions shall be two piece, cast ferrous alloy with molded PVC gasket.
- C. Manufacturer: Robroy Plasti-bond RED PBHLBxx, PBHTxx, PBSTGx, PRRExx, PRUNF/Yxxx, or equal.

## **2.07 CONDUIT TAGS**

- A. Provide permanent, stainless steel conduit tags with conduit numbers as designated on the conduit schedule drawings, pressure stamped onto the tag. Tags relying on adhesives or taped-on markers are not acceptable. Attach tags to conduits with 316 stainless steel tie wire at each end of the conduit.

## **2.08 CONDUCTOR TAGS**

- A. Provide for individual conductors shall be white heat shrink with thermal transfer printing, 3 to 1 shrink ratio, two inches long and meet UL224.
- B. Manufacturer: TE Connectivity D-SCE, or equal.

## **2.09 HOT DIPPED GALVANIZED (HDG) STRUT AND FITTINGS**

- A. HDG strut, fittings and hardware shall be constructed from cold rolled steel conforming to ASTM A570 GR33 with hot dipped galvanized finish conforming to ASTM A123. HDG strut shall be 12-gauge, 1-5/8 x 7/8" with in-turned lips and slotted back. Hardware shall be fabricated from case hardened mild steel in conformance with ASTM A576, GR 1015 with electrogalvanized finish conforming to ASTM B633, Type III SC1. Threads shall be American coarse screw threads UNC, Class 2A/B. Conduit clamps shall be two-piece with nut & bolt. Hardware shall be suitable for use with the 1-5/8" strut.
- B. Manufacturer: Unistrut P3300, P4006/10, or equal.

## **2.10 PVC COATED STRUT AND FITTINGS**

- A. PVC coated strut shall be 12-gauge, 1-5/8 x 7/8" with in-turned lips and slotted back with 20-mil PVC coating. Conduit clamps shall be two-piece 20-mil PVC coated with 316SS nut & bolt. Hardware shall be 20-mil PVC coated suitable for use with the PVC coated strut system.
- B. Manufacturer: Robroy Plasti-Bond RED PBSH3300-x, PBC105-x, PB910-x, PB914, or equal.

## **2.11 CONDUCTORS**

- A. Conductors shall be rated 600V, Class B stranded copper UL listed, with XHHW-2 insulation rated for 90°C in wet or dry locations. Conductor color shall be Blue- 24Vdc+, Gray-24Vdc common and Green-ground.

## **2.12 CONDUIT PENETRATION SEALS**

- A. Conduit penetration seals shall be a modular, mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill the annular

space between the conduit and the opening. The elastomeric element shall be sized and selected per the manufacturer's recommendations and shall be suitable for use in standard service applications.

B. Manufacturer: Thunderline Corporation Link-Seal, or equal.

### 2.13 DUCT SEAL

A. Duct seal shall be a non-hardening compound designed as a water-stop and moisture barrier for sealing the annular space between conduit and electrical conductors and cables.

B. Acceptable products include: O-Z Gedney DUX, or equal.

### 2.14 PULL TAPE

A. Pull tape shall be minimum ½-inch in width, suitable for 1,250 pounds of pull strength.

B. Acceptable products include: Neptco Muletape WP1250P, or equal for non-detectable pull tape.

### 2.15 WARNING TAPE

A. Provide heavy-gauge, red, non-adhesive polyethylene tape of six-inch minimum width, four-mil nominal thickness, with black lettering, for use in trenches containing electric circuits. Use tape with the following printed warning: "CAUTION-ELECTRIC LINE BURIED BELOW".

B. Acceptable products include: Harris Industries, Inc. Underground Tape Catalog No. UT-29, or equal.

### 2.16 BACKFILL

A. Backfill materials may be selected from the excavated material if it contains no particles larger than two inches in diameter and is free from roots or debris. Imported material meeting these same requirements may be used in lieu of material from the excavation.

### 2.17 SAND

A. Unwashed river sand shall be free of trash, peat, organics or other objectionable material with the following gradation

1.	<u>US Sieve</u>	<u>% weight passing</u>
	No 4	100%
	No 8	80-100%
	No 100	0-35%

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. Raceway systems shall be electrically and mechanically complete before pull cords are installed. Bends and offsets shall be smooth and symmetrical, and shall be accomplished with tools designed for this purpose. Factory elbows shall be utilized in all cases requiring 90 degree bends.
- B. Install underground raceways a minimum of two feet below finished grade. Slope conduits to drain away from the panelboard toward the vault. Do not backfill underground conduits until they have been inspected and approved by the Engineer.
- C. Raceway sizes shown on Drawings are minimum dimensions based on designed equipment.
- D. Routings shall be adjusted to avoid obstructions. Coordinate with all other trades prior to installation of raceways. Lack of such coordination shall not be justification for extra compensation, and removal and re-installation to resolve conflicts shall be at no extra cost to the City.
- E. All exposed raceways shall be installed at least ½-inch from walls or ceilings by the use of clamp backs or struts.
- F. Wherever contact with concrete or dissimilar metals can produce galvanic corrosion of equipment, suitable insulating means shall be provided to prevent such corrosion.
- G. Support raceways at intervals not exceeding NEC requirements unless otherwise indicated. Support all raceways from structural members only. Do not support from pipe hangers or rods or other conduit.
- H. Support flexible metal conduit with conduit clamps, except where the flexible metal conduit is fished and where sections less than four feet in length are used in concealed areas and as approved by Engineer.
- I. Bends
  - 1. Make changes in the direction of runs with symmetrical bends or cast metal fittings. Make bends and offsets of the longest practical radius. Avoid field-made bends and offsets where possible; but, where necessary, make with an acceptable hickey or conduit bending machine.
  - 2. Make bends in parallel or banked runs of raceways from the same center or centerline so that bends are parallel and of neat appearance. Factory elbows may be used in parallel or banked raceways if there is a change in

the plane of the run and the raceways are of the same size. Otherwise, make field bends in parallel runs.

3. Make no bends in flexible conduit that exceed allowable bending radius of the cable to be installed or that significantly restricts the conduits flexibility.
- J. Where conduit enters metal enclosure, install an insulated throat grounding hub. Install a bonding jumper from the bushing to equipment ground bus or ground pad. Interconnection of bonding jumpers from each conduit grounding bushing to the equipment ground bus or ground pad is acceptable. If neither a ground bus or ground pad exists, connect the bonding jumper to the metallic enclosure with a bolted-lug connection.
- K. Install RGS/PVC in strict accordance with the manufacturer's instructions. Touch up any damage to the coating with conduit manufacturer acceptable patching compound. PVC boot shall cover all threads. Leave no metallic threads uncovered. Clean field threads with solvent and coat with urethane touch-up.
- L. Conduits shall not be cast as part of cast-in-place structures. Cast-in-place structures shall include sleeves, and conduits shall pass through the sleeves to penetrate the structures. Coordinate sleeve installation with structural work.

### **3.02 CONDUIT**

- A. RGS/PVC factory elbows shall be utilized for transition from underground to exposed conduit. Conduit shall emerge from underground plumb to the surface whenever possible.
- B. Joints shall be tight, thoroughly grounded, secure, and free of obstructions in the pipe. All conduits shall be adequately reamed to prevent damage to the wires and cables inside. Strap wrenches and vises shall be used to install conduits to prevent wrench marks on the conduits. Conduits with wrench marks shall be replaced at no additional cost.

### **3.03 REQUIRED RACEWAY TYPE FOR SPECIAL LOCATIONS AND INSTALLATION METHOD**

- A. Provide RGS/PVC conduit and fittings where called out on Contract Drawings.
- B. Final connection to instrumentation and other equipment where flexible connection is required to facilitate removal or adjustment of equipment with liquid-tight flexible metal conduit. Liquid-tight flexible metal conduit shall be of 12-inch minimum to 24-inch maximum lengths, unless otherwise approved by the Engineer.

### **3.04 TRENCHING**

- A. Call an Underground Service firm before trenching. Prior to trenching, pothole the location of all existing cables, conduits, piping, and other equipment in or near the areas to be trenched. Repair any equipment damaged during trenching. Trenches shall not be left unattended unless the area is fenced or barricaded to restrict entry to the area.
- B. Trenching alignments shown on Drawings are diagrammatic. Actual alignments shall contain no sharp bends and shall be installed with minimum radius bends as required in the NEC or installed cable, whichever requires a larger radius bend.
- C. Trench width shall accommodate conduit outside dimensions, 2-inch separation between conduits and 3-inches to the outside edges.
- D. Make minor changes in the location or cross-section as necessary to avoid obstructions or conflicts. Where raceway runs cannot be installed substantially as shown on the drawings because of conditions not discoverable prior to digging of trenches, refer the condition to the Engineer for instructions before further work is done. Determine exact alignment and depth as required to avoid other utilities

### **3.05 UNDERGROUND CONDUIT INSTALLATION AND BACKFILL**

- A. Install conduits on a 3-inch bedding of unwashed river sand.
- B. After approved inspection, embed conduits with 3-inch layer of unwashed river sand and place the warning tape along the centerline.
- C. Install approved backfill material above the sand bedding to grade. Compact backfill in maximum 12-inch layers to at least 95 percent of the maximum density at optimum moisture content as determined by AASHTO T 180.

### **3.06 TRENCH SETTLING**

- A. If at any time during a period of one year dating from the date of final acceptance of the project, there shall be any settlement of conduit trenches, provide additional fill and to make such repairs or replacements in paving, planting, or structures, as deemed necessary by the Engineer at no additional costs to the contract.

### **3.07 PREPARATION FOR PULLING IN CONDUCTORS**

- A. Ream all raceways, remove burrs, and clean raceway interiors. Immediately after installation, plug or cap all raceway ends with watertight and dust-tight seals.

- B. Pull a bristle brush and then mandrel through each raceway to remove any debris and clean raceway prior to pulling conductors. The diameter of the mandrel shall be approximately  $\frac{1}{4}$  inch less than the raceway inside diameter, through each raceway. For conduits one inch and less, pull a rag through to clean and remove debris prior to pulling conductors.

### **3.08 CONDUCTOR TAGS AND EMPTY RACEWAYS**

- A. Install conductor tags for all conductors and cables pulled in as part of this Contract. Tags labeling shall be the same on both ends.
- B. Provide a removal cap over each end of empty raceways. Provide a pull tape in each empty raceway.

### **3.09 CONDUIT BODIES**

- A. Furnish and install conduit body plumb and level where shown on the drawings in the raceway system to facilitate conductor installation.
- B. Install T-condulet inside flowmeter vaults with a drain fitting on the bottom to route condensation away from the flowmeter housing.

### **3.10 ELECTRICAL CONTINUITY**

- A. The entire electrical raceway system shall form a continuous metallic electrical conductor from the service point to every outlet and shall be grounded by connection to the main service ground.

### **3.11 CONDUIT IDENTIFICATION**

- A. All conduits shall be identified with minimum of two labels, one at either end. Labels shall be permanent, waterproof, legible, and attached with stainless steel wire.

**END OF SECTION**

## SECTION 17102 - FLOW MEASURING SYSTEMS

### PART 1 - GENERAL

#### 1.01 SECTION INCLUDES

- A. Furnish and install flow meter systems, complete and operable, with the requirements of the Contract Documents.
- B. Flow meter tube with remote Flow Transmitter, to be located within PLC Panel, interconnected with manufacturer cable (no splices). Provide grounding of flow meter tube per manufacturer recommendations.
- C. Coordinate installation of remote Flow Transmitter within PLC Panel.
- D. Configure flowmeter. Coordinate ranges with City. City will assist with flowmeter network address assignment.

#### 1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. ISA - S 5.1 Instrumentation Symbols and Identification

#### 1.03 CONTRACTOR SUBMITTALS

- A. Shop Drawings: Submit complete shop drawings of all instruments in accordance with the Section 01105.
- B. Installation detail of flow tube and flow meter in PLC Panel.
- C. Operation and Maintenance Manuals.
- D. Training outlines and trainer resume.

#### 1.04 QUALITY ASSURANCE

- A. Coordinate proposed installation with flow meter supplier to confirm sufficient upstream and downstream pipe lengths to guarantee metering accuracy.
- B. Inspection and Testing Requirements: After installation, obtain the services of a technical representative to inspect and test meter for proper performance and installation. Verify accuracies.
- C. Accuracy Requirements: Unless otherwise specified herein, the flow meters shall be guaranteed to register flow to an accuracy of 0.25 percent of actual flow throughout the range specified.

#### 1.05 GUARANTEES, WARRANTIES

- A. After completion furnish the supplier's written guarantees, that the metering system will operate within the published accuracies and flow ranges and meet these Specifications. Furnish the manufacturer's warranties as published in its literature, and submit within the O&M Manuals.

## **PART 2 - PRODUCTS**

### **2.01 GENERAL**

- A. All devices specified herein shall conform to the requirements of the manufacturer.
- B. All instruments shall have stainless steel nameplates with tag number and description.

### **2.02 MAGNETIC FLOW MEASURING SYSTEMS**

- A. General: Magnetic flowmeter systems shall be of the low frequency electromagnetic induction type and produce a DC pulsed signal directly proportional to and linear with the liquid flow rate.
- B. Flow meter shall include remote mounted transmitter to be located in PLC Panel of Panelboard. Add to the existing PLC cabinet two DIN mounted dc fuses (rated for the meter load) to power both the flow transmitter and Ethernet IP to Modbus TCP bridge (include wiring) from the existing 24 volt dc power supply. Provide window in front door of PLC Panel to view flow transmitter display.
- C. Where remote transmitter cannot be installed in the existing outdoor enclosure provide a 12" wide by 16" tall by 8" deep lockable stainless steel NEMA 3R enclosure. Include four (4) exterior enclosure installations as part of the flow meter contract.
- D. Cables from remote flow transmitter to flow tube shall be supplied with flow meter and shall be long enough to be installed without splicing. Conductor length shall be determined after the conduit is placed.
- E. Complete zero stability shall be an inherent characteristic of the flowmeter system. Flowmeter shall have pulsed contact that closes based on quantity of flows and fully programmable. Flowmeter shall include low flow cutoff. Magnetic flow metering system shall include a metering tube, transmitter and flowmeter grounding rings.
- F. Metering Tube
  - 1. Flange Type Magnetic Flowmeter Element: In-line flow element with no constrictions in flow of fluid through meter consisting of metallic tube with ANSI B16.5, Class 150, flanged ends for diameter and bolt drilling pattern. Flange material shall be compatible with the piping material and corrosion resistant. Provide grounding rings.
  - 2. Electrode and Liner Materials: Fully compatible with process fluid. Liner shall be hard rubber. Electrodes shall be 316 stainless steel.

3. Sewage Force Main Flow tube shall be NEMA 6P, Class 1 Div. 2 rated. Tag: SXXXFE001 (where XXX is station number to be provided by City). Flow meter tube diameter is shown on Contract Drawings.
  4. Ground Rings: Manufacturer's standard. Interconnect ground rings to flow tube electronics housing with #12 AWG ground wire. Connect to equipment grounding conductor or ground grid.
  5. Cable: Furnish and install manufacturer cable to connect flow tube to remote flow transmitter.
- G. Remote Microprocessor-Based Transmitter
1. Micro-processor type with local flow rate indication and local flow totalization indicator, scaled in engineering units. Provide with integrated web server, Heartbeat Technology, and data logger.
  2. Transmitter to be remote mounted in PLC Panel section of the Panelboard.
  3. Zero Flow Stability: By power driven electrode shielding or automatic zero adjustment of direct current excited metering circuit.
  4. Provide with low flow cutoff configuration.
  5. The transmitter shall be powered from the City PLC 24 volt DC supply.
  6. Provide with Ethernet/IP communication to be connected by the City at a later date.
- H. Each flow meter installation shall include an Ethernet IP to Modbus TCP bridge to facilitate communication with the City's SCADA system. The bridge shall be manufactured by ProSoft-Technology Model PLX31-EIP-MBTCP.
- I. System Accuracy, including Magnetic Flowmeter Transmitter: Within 0.25 percent of actual flow rate for 10-100 percent full scale where velocity is between 0.3 and 30 feet per second.
- J. Flow metering system shall be hydraulically calibrated at a facility which is traceable to the National Institute of Standards and Technologies. The calibrations procedure shall conform to the requirements of MIL-STD-45662A. A real-time computer-generated printout of the actual calibration data indicating apparent and actual flows at 0, 20, 50, 80 and 100 percent of the calibrated range shall be submitted to the Engineer at least thirty (30) days prior to shipment of the meters to the project site.
- K. Manufacturer, no equal:
1. Endress & Hauser L400 (12 total). Include ProSoft-Technology Model PLX31-EIP-MBTCP bridge (plus 2 spares, 14 total); two fuses with each

meter installation and four (4) stainless steel lockable NEMA 3R enclosures as noted herein above.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION**

- A. Assemble and install all equipment specified herein, in strict accordance with the manufacturer's published instructions, under the supervision of the manufacturer's representative and under the general review of the Engineer. All installations shall be accomplished by competent craftsmen in a workmanlike manner.
- B. Installation of flow tube and remote transmitter to be approved by manufacturer such that rated accuracy and repeatability is met.
- C. Installation shall follow submitted and approved instrument installation detail.
- D. Flowmeter: The remote mounted flowmeter transmitter shall be installed in easily accessible locations for ease of reading, wiring and maintenance. Flow tubes shall be firmly supported from the floor with approved supports. Configure flowmeter including but not limited to: communication, identification, inputs, and outputs.

### **3.02 FIELD TESTING**

- A. Each item shall be subjected to an operating test over the total range of the equipment.
- B. Refer to manufacturer for testing requirements.
- C. Refer to Section 01650 – Facility Startup for further testing requirements.
- D. Confirm instruments have nameplates, and connected conduits and conductors are labeled.
- E. All Field Testing shall be completed during Pre-Demonstration period.

### **3.03 TRAINING**

- A. Manufacturer shall provide flowmeter training to City. Provide two identical training sessions; each session lasting up to two hours, per facility. Identical training sessions shall not occur on the same day. All training shall be completed during Pre-Demonstration period.

**END OF SECTION**

# PLANS

**RESOLUTION NO. XXXX**

Adopted by the Sacramento City Council

**CONTRACT AWARD AND BUDGET AMENDMENT FOR THE  
SEWER SUMP FLOW METERS  
PROJECT (X14130400)**

**BACKGROUND**

- A. This project consists of installing 12 sewer sump flow meters to allow the City to collect accurate data on pump efficiency and flow rates. The data will help master planning reduce the amount of inflow and infiltration.
- B. The project was formally advertised on February 26, 2016 to solicit public bids and Caggiano General Engineering, Inc. is the lowest responsive and responsible bidder.
- C. To award the contract and complete the project, staff proposes transferring funding of \$71,009 from the Base CIP Contingency for Wastewater fund (X14000500, fund 6006) to the Sewer Sump Flow Meters project (X14130400, fund 6006).

**BASED ON THE FACTS SET FORTH IN THE BACKGROUND, THE CITY COUNCIL  
RESOLVES AS FOLLOWS:**

- Section 1. The contract plans and specifications for the Sewer Sump Flow Meters project are approved.
- Section 2. The contract is awarded to Caggiano General Engineering, Inc. in an amount not-to-exceed \$417,500.
- Section 3. The expenditure budget of \$71,009 is transferred from the Base CIP Contingency for Wastewater fund (X14000500, fund 6006) to the Sewer Sump Flow Meters project (X14130400, fund 6006).