



WATER DEPARTMENT
BID DOCUMENTS
FOR
LAKE MADIGAN AND LAKE FREY IMPROVEMENTS

CITY COUNCIL

Bob Sampayan, Mayor
Jesus Malgapo
Robert H. McConnell
Hermie Sunga

Katy Meissner, Vice Mayor
Rozanna Verder-Aliga
Pippin Dew-Costa

Mike Malone
Water Director
Fleming Hill Water Treatment Plant
Vallejo, CA 94589
(707) 648-4307

Bid Opening:
2:00 p.m. July 12, 2018
at JFK Library, Vallejo Room
505 Santa Clara Street,
Vallejo, CA 94590

A handwritten signature in blue ink that reads "Mike Malone".

Prepared under the direction of:
Mike Malone, Water Director

Mandatory Pre-bid Conference:
10:00 a.m. June 15, 2018
at Fleming Hill WTP Conference
Room, 202 Fleming Hill Road,
Vallejo, CA 94589

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CITY OF VALLEJO
WATER DEPARTMENT

NOTICE TO CONTRACTORS

NOTICE IS HEREBY GIVEN THAT SEALED BIDS will be received at the office of the City Clerk, third (3rd) floor, City Hall, Vallejo, California, during the business hours of 8:30 AM through 5:00 PM, Monday through Friday, holidays excepted, until the hour of **2:00 p.m. on July 12, 2018**, at which time they will be publicly opened and read aloud in the Vallejo Room, bottom level of the JFK Library, located at 505 Santa Clara Street, Vallejo, CA 94590, for

LAKE MADIGAN AND LAKE FREY IMPROVEMENTS, City of Vallejo, County of Solano, California according to the drawings and specifications prepared by City of Vallejo – Water Department.

The work to be done includes: **Lake Madigan - Installation of bonneted knife gate valve on the outlet pipe with a flanged coupling adapter, a cast in place vault with concrete foundation, and concrete stairs. Lake Frey – Demolishing the existing platform and ladder and installing a new platform, ladder and hoist and trolley system.** The bidder shall include in his bid and provide all labor, tools and materials for a complete and working project in conformance with the intent shown on the drawings and specified herein.

Bids are required for the entire work described herein. A **mandatory** pre-bid conference will be held June 15, 2018 at 10:00 a.m., in the Fleming Hill WTP Conference Room, 202 Fleming Hill Road, Vallejo, California. This meeting is to inform bidders of project requirements. The meeting will also include a visit to the job site to show available access and existing conditions. The site visit may take up to 4 hours (including travel time).

Time of completion of the work is 180 calendar days from the date of issuance of the Notice to Proceed work by the City.

No bid will be received unless it is made on the proposal forms included in these proposed Contract Documents. Each bid must be accompanied by cash, a cashier's check, certified check or bidder's bond made payable to the City of Vallejo in the amount of **ten percent (10%)** of the total bid amount. Bid bonds shall be issued by a corporate surety duly admitted and authorized to issue bonds and undertakings by the State of California and on the form provided by the City of Vallejo.

Pursuant to Section 1700, and following, of the California Labor Code, the Contractor shall pay not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations. Copies of such prevailing rate of per

diem wages are on file at the office of the City of Vallejo, Water Department, 202 Fleming Hill Road, Vallejo, CA 94589. Those copies shall be made available to any interested party upon request. The Contractor shall forfeit, as penalty to the City of Vallejo, Fifty Dollars (\$50.00) for each calendar day or portion thereof, for each workman paid less than the stipulated prevailing rates for any work done under the contract by it or by any subcontractor under it, in violation of the provisions of such Labor Code.

The Contractor shall post a copy of the general prevailing rates per diem wages in a conspicuous place at the job site forthwith upon undertaking the public work called for herein. The Contractor shall also keep an accurate certified payroll record in accordance with requirements set forth in Section 1776 of the Labor Code of the State of California and these Contract Documents.

No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the State of California Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].

No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. All contractors and subcontractors must furnish electronic certified payroll records directly to the Labor Commissioner (aka Division of Labor Standards Enforcement).

Bidders are advised that this project is subject to all federal, state and local nondiscrimination laws including Vallejo Municipal Code sections 2.72.030 and 2.72.040.

Proposed Contract Documents may be examined at:

Bay Area Builders Exchange (Alameda_ 3055 Alvarado St., San Leandro, CA 94577	Solano-Napa Builders Exchange 135 Camino Dorado Napa, CA 94558
Bay Area Builders Exchange (Contra Costa) 2440 Stanwell Drive Concord, CA 94520	Sacramento Builders Exchange 1331 T Street Sacramento, CA 95814
San Francisco Builders Exchange 850 So. Van Ness Avenue #13 San Francisco, CA 94110	North Coast Builders Exchange 1030 Apollo Way Santa Rosa, CA 95407
Marin Builders Association 660 Las Gallinas Avenue	Small Business Exchange 703 Market Street, Suite 1000

San Rafael, CA 94903	San Francisco, CA 94103
Peninsula Builders Exchange 735 Industrial Road #100 San Carlos, CA 94070	Placer County Builders Exchange 231 Cherry Avenue, Suite 101 Auburn, CA 95603-4840
Builders Exchange of Santa Clara 400 Reed Street Santa Clara, CA 95050	Nor-Cal Bidders Exchange 4740 East Second Street #29 Benicia, CA 94510
Construction Bidboard 4420 Hotel Circle Court #215 San Diego, CA 92108	McGraw Hill-Dodge Plan Room 4020 Lennane Dr Bldg 2 Suite 104 Sacramento, CA 95834-1987

The Plans, Specifications, Contract Documents and proposal forms may be obtained at the office of the Water Director, City of Vallejo, Water Department, 202 Fleming Hill Rd., Vallejo, California 94589, with a charge of Fifty Dollars (\$50), which is not refundable.

Documents are also available online at www.cityofvallejo.net. Interested bidders may register as Planholders (only Planholders receive information regarding addenda, and other notices from the City) online via the City website (at no cost) or upon purchase of plans and specifications from the City. Users of documents posted on the internet in electronic form are cautioned that the City of Vallejo does not assume any liability or responsibility based on these electronic files for any defective or incomplete copying, excerpting, scanning, faxing or downloading of the contract documents.

Complete sets of documents shall be used in preparing Bids; neither City nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of documents.

The bid bonds for the three acceptable lowest bidders shall be retained until the City Council has awarded a contract to the successful bidder. All other bidder's bonds shall be returned to the bidder.

Pursuant to Section 22300 of the Public Contract Code, the Contractor may substitute a deposit of securities in lieu of the City of Vallejo withholding any monies to ensure Contractor's performance under the Contract, or alternatively, request that the City of Vallejo make payment of retentions earned directly to an escrow agent at the expense of Contractor. The provisions of Public Contract Code section 22300 are incorporated herein by reference as though set forth in full, and shall govern the substitution of securities and/or escrow account.

The City of Vallejo reserves the right to reject any or all bids or portions thereof, to accept a bid or portion thereof or to waive any minor irregularity.

Bidders and Contractor shall be licensed in accordance with the provisions of Chapter 9,

Division III, of the Business and Professions Code, Section 7000 et seq., known as the Contractors License Law. The license classification required for this project is **A**.

DAWN G. ABRAHAMSON
City Clerk

Dated: _____

CITY OF VALLEJO
WATER DEPARTMENT

INSTRUCTIONS TO BIDDERS

- 1) All portions of the proposal form must be completed before the bid is submitted. Failure to do so may result in the bid being rejected as non-responsive. Attached to and submitted with the proposal form, bidder must provide the completed:
 - (a) Contractor Qualifications,
 - (b) Designation of Subcontractors,
 - (c) Non-Collusion Affidavit for Contractors or Subcontractor,
 - (d) Non-Discrimination Clause,
 - (e) The appropriate bid security.
 - (f) Addenda, if any

Failure to submit all required documents may result in the bid being rejected as non-responsive.

- 2) An original of the proposal form shall be filled in and submitted as the bid.
- 3) Sealed bids will be addressed to:
Dawn G. Abrahamson, City Clerk
555 Santa Clara Street
P.O. Box 3068
Vallejo, California 94590

- 4) City of Vallejo has obtained report(s):

N/A

The report(s) may contain facts that may materially affect bidders' bids.

The "technical data" may contain facts that may materially affect Bidders' bids. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

In addition, City of Vallejo has constructed other public works projects throughout the City, and obtained reports and other information in the course of the design and construction of those other public works construction projects, all of which may contain facts that may materially affect bidders' bids. Bidders are strongly

encouraged to inspect all of City's reports, records and documents referred to above. Said reports and documents will be made available upon written request at City of Vallejo Public Works Counter, 4th Floor City Hall for inspection and copying at bidders' sole cost and expense, during normal working hours.

- 5) Written questions will be the only questions that receive an official response from the City. Written questions may be submitted:
 - a) By Fax (707) 648-4060; or
 - b) By E-mail to the Project Manager
 - c) By Letter addressed to:
LAKE MADIGAN & LAKE FREY IMPROVEMENTS
City of Vallejo Water Department
202 Fleming Hill Road
Vallejo, CA 94589

Bidders are advised that oral or written communication from the City not in the form of an official addendum do not alter the bid plans or specifications.

- 6) The cut off time for submission of bid questions is 5:00 P.M. (Pacific Time) on Friday, July 2, 2018. Any questions received after this time will not be responded to.
- 7) If a pre-bid conference has been scheduled at the site of the work, all bidders, subcontractors, material suppliers and others who may be working on the work of improvement are strongly encouraged to attend this pre-bid conference. Due to the facts and circumstances of this particular project, the pre-bid conference may be the only opportunity to conduct the pre-bid investigation of the site and satisfy the pre-bid obligations set forth in these Contract Documents. If a bidder (or others) attend the entirety of a scheduled pre-bid conference and need additional time to complete their investigation of the site or other pre-bid obligations set forth in these Contract Documents, bidder must notify the City in writing, via certified or registered mail, no less than two work days after the scheduled pre-bid conference, to request additional time. The written request must include an estimate of the amount of additional time required by bidder.
- 8) Following the public opening of bids, the City may request in writing that the apparent low bidder complete the Contractor Qualification Questionnaire included in these Contract Documents and furnish all required supporting documentation to enable the City to determine whether the apparent low bidder is responsible and/or qualified to perform the work described in the Contract Documents. By submission of a bid, bidder agrees to complete the Contractor Qualification Questionnaire, furnish all required attachments, sign the Contractor Qualification Questionnaire, all in strict conformance with the requirements of the Contract Documents and Contractor Qualification Questionnaire, and return to the City within five (5) working

days of City's written request. If bidder fails or refuses to complete the Contractor Qualification Questionnaire, furnish all required attachments, sign the Contractor Qualification Questionnaire, and return it to the City within five (5) working days of City's written request, bidder will not be considered for award of the contract, and further, bidder agrees that the City may award the Contract to another bidder or call for new bids. In such event, the bidder shall be liable to the City for the difference between the amount of the disqualified bid and the larger amount for which the City procures the work plus all of the City's costs, damages, expenses and liabilities.

- 9) If for any reason the City elects to not award the contract to the apparent low bidder, the City may request in writing that the apparent second lowest bidder complete the Contractor Qualification Questionnaire and furnish all required supporting documentation as required by the preceding paragraph, to enable the City to determine whether the second low bidder is qualified to perform the work described in the Contract Documents. If for any reason the City elects to not award the contract to the apparent second lowest bidder, the City may request the third lowest bidder complete the Contractor Qualification Questionnaire and furnish all required supporting documentation, and so on.
- 10) If the City receives from a bidder within the time set forth in these Contract Documents, a complete Contractor Qualification Questionnaire and all required supporting documentation as required by the Contract Documents, and if the City determines that a bidder is not qualified to perform the work required by the Contract Documents, and if the City elects to not award the Contract to that bidder, the City will promptly return that bidder's bid security.
- 11) Bid Protests - Only Bidders may protest Bids. All Bid protests must be submitted in writing along with a non-refundable \$2,500.00 Bid protest fee.
 - a) All Bid protests must be addressed to Water Director, Water Department, City of Vallejo, 202 Fleming Hill Road, Vallejo, CA 94589 re: LAKE MADIGAN AND LAKE FREY IMPROVEMENTS and received, by said Director along with the non-refundable Bid protest fee, by the Bid Protest Deadline. The Bid protest submitted to the Director shall include one original and two complete copies. The original Bid protest and two complete copies shall be transmitted to the Director via certified mail, return receipt, or hand delivery.
 - b) The Bid Protest Deadline shall be the earlier of any of the following that may apply:
 - (i) If the Bid protest is based on the responsiveness of a particular Bid or the responsibility of a particular Bidder, the Bid Protest Deadline is 5:00 p.m. on the 4th business day after the Bid opening;
 - (ii) If the Bid protest is based on the City's determination that a Bid is not

responsive or a Bidder is not responsible, then the affected Bidder's Bid Protest Deadline is 5:00 p.m. on the 4th business day after the date of the City's notice to the affected Bidder.

- c) Additionally, the following shall apply to all Bid protests:
 - (i) The written bid protest must state all facts and each legal basis for the protest.
 - (ii) The written bid protest must specifically identify each portion of each document that forms the basis for the protest and include a copy of each document.
 - (iii) The protest must include the name, address and telephone number of the person representing the protesting party.
 - (iv) Before the Bid Protest Deadline, the Bidder protesting a Bid shall transmit to all other parties having a potential interest that may be adversely affected by the outcome of the protest, a complete copy of the Bid protest and all supporting documents, including but not limited to all other Bidders who may have a reasonable prospect of losing or obtaining an award of the Contract depending on the outcome of the protest.
 - (v) The procedures and time limits set forth in this section for Bid Protests are strictly construed and are Bidder's sole and exclusive remedy in the event of a Bid protest. Bidders' failure to strictly comply with these procedures and time limits shall constitute a waiver of any right to further pursue the Bid protest, including but not limited to, the filing of a Government Code Claim or legal proceedings.
 - (vi) A Bidder may not rely on a Bid protest submitted by another Bidder, but must timely pursue its own Bid protest.
- 12) Liquidated damages that may be assessed by City of Vallejo for late completion is **ONE THOUSAND DOLLARS (\$1,000.00)** for each calendar day delay.

CITY OF VALLEJO
WATER DEPARTMENT

PROPOSAL FORM

FOR THE

LAKE FREY AND LAKE MADIGAN IMPROVEMENTS

TO: The Honorable Mayor and City Council
City of Vallejo
Vallejo, California 94590

Name of Bidder: _____

Business Address: _____

Place of Residence: _____

Any person or entity submitting a bid on this project to engage in the business or act in the capacity of a contractor shall be licensed as a contractor in accordance with the provisions of Division 3, Chapter 9 of the California Business and Professions Code.

Contractor's License No.: _____ Expiration Date: _____

Contractor's Classification: _____

Name on Contractor's License: _____

DIR Registration No. _____ Expiration Date: _____

City of Vallejo Business License Number: _____

Business Address: _____

Phone: _____ Fax: _____

E-mail: _____

Place of Residence: _____

_____ Phone: _____

The work to be done consists of: **Lake Madigan - Installation of bonneted knife gate valve on the outlet pipe with a flanged coupling adapter, a cast in place vault with concrete foundation, and concrete stairs. Lake Frey – Demolishing the existing platform and ladder and installing a new platform, ladder and hoist and trolley system.**

The undersigned, as bidder, declares that the only persons or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any other person, firm, or corporation; that he/she has carefully examined the location of the proposed work, the annexed proposed form of contract, and the plans therein referred to, and all of the Contract Documents; and he/she proposes and agrees if this proposal is accepted, that he/she will contract with the City of Vallejo, in the form of the copy of the contract annexed hereto, to provide all necessary labor, materials, machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the Contract, in the manner and time therein prescribed, and according to the requirements of the Engineer as therein set forth, and that he/she will take in full payment therefore the following item prices, to wit:

NOTE: The quantities following are approximate only and will be used as a basis for the comparison of bids.

An (s) listed after a Bid Schedule description item, if any, indicates items that are considered "Specialty Items" as defined in Section 8-1.01 of the General Provisions.

CITY OF VALLEJO
WATER DEPARTMENT

BID SHEET

FOR THE

LAKE MADIGAN AND LAKE FREY IMPROVEMENTS

BID ITEM	APPROX QTY	UNIT	DESCRIPTION	UNIT PRICE	EXT. PRICE
1	1	LS	MOBILIZATION	\$	\$
2	1	LS	16" DIP PIPE	\$	\$
3	1	EA	16-INCH BONNETED KNIFE GATE VALVE	\$	\$
4	1	EA	16-INCH FLANGED COUPLING ADAPTER	\$	\$
5	2	EA	16-INCH MID-SPAN RESTRAINT	\$	\$
6	1	LS	LAKE MADIGAN SITE IMPROVEMENTS	\$	\$
7	1	LS	PLATFORM	\$	\$
8	1	LS	LADDER	\$	\$
9	1	LS	HOIST AND TROLLEY SYSTEM	\$	\$

TOTAL BID SUMMARY

Total Bid \$ _____
(IN FIGURES)

Total Bid \$ _____
(IN WORDS)

BIDDER'S SIGNATURE _____

The Contract, if it is awarded, shall be awarded to the Contractor submitting the lowest total bid that complies with these Contract Documents.

In case of discrepancy between the unit prices and the total amount, the unit prices shall prevail, except as provided in (a) or (b), as follows:

- (a) If the amount set forth as a Unit Price for a said item is not readable or otherwise not clear, or is omitted, or is the same amount as the entry in the Total Amount column, then the amount set forth in the Total Amount column for the line item shall prevail and shall be divided by the Estimated Quantity for the said item and the price thus obtained shall be the Unit Price amount.
- (b) (Decimal Errors) If the total of the entered Unit Price multiplied by the given Estimated Quantity is **exactly** off by a decimal factor (i.e., ten, one hundred, etc. or, one-tenth, one-hundredth, etc.) from the entered Total Amount, the discrepancy will be resolved by using the entered Unit Price or entered Total Amount, whichever most closely approximates (by percentage) the Unit Price or Total Amount in the City -Engineer's Cost Estimate.
- (c) In order for a bid to be valid, all aspects of the Bid Sheet must be filled out completely. An incomplete Bid Sheet is grounds for bid reject.

The City of Vallejo desires wherever possible to hire qualified City of Vallejo residents to work on City projects. Contractors, subcontractors, consultants, and developers will, wherever possible, solicit proposals from qualified local firms and will, wherever possible, employ qualified local residents to work on City projects.

The bidder agrees that if the bidder is selected as the apparent lowest responsible bidder, and the bidder fails to sign the Contract and furnish the Performance Bond, the Payment Bond, Certificates of Insurance, and other required items within the time limit specified in the Contract Documents, the City of Vallejo may award the work to another bidder or call for new bids. In such event, the bidder shall be liable to the City for the difference between the amount of the disqualified bid and the larger amount for which the City procures the work plus all of the City's costs, damages, expenses and liabilities arising from bidder's failure to sign the Contract and/or furnish the required documents.

Bidder declares that he/she/it has not accepted any bid from any subcontractor or vendor through any bid depository, the by-laws, rules or regulations of which prohibit or prevent the bidder from considering any bid from any subcontractor which is not processed through said bid depository or which prevent any subcontractor or vendor from bidding to any contractor who does not use the facilities of or accept bids from or through such bid depository.

ACCOMPANYING THIS PROPOSAL is _____

(in an amount of ten percent (10%) of the total bid)

NOTICE: Insert the words CASH (\$_____), CASHIER'S CHECK, BIDDER'S BOND, or CERTIFIED CHECK, as the case may be.

THE NAMES OF ALL PERSONS INTERESTED IN THE FOREGOING PROPOSAL AS PRINCIPALS ARE AS FOLLOWS:

IF THE BIDDER OR OTHER INTERESTED PERSON is a corporation, state legal name of corporation and state where incorporated, also names of the President, Secretary, Treasurer, and Manager thereof; if a co-partnership, state true name of firm, also names of all individual co-partners composing the firm; if bidder or other interested person is an individual, state first and last names in full.

LICENSED IN ACCORDANCE WITH THE CONTRACTORS' LICENSE LAW OF THE STATE OF CALIFORNIA (BUSINESS AND PROFESSIONS CODE) SECTION 7000 et seq. PROVIDING FOR THE REGISTRATION OF CONTRACTORS,
License No.: _____

Sign Here: _____

(Printed or typed name of Bidder)

Dated: _____

NOTE: If the bidder is a corporation or a co-partnership, the legal name of the firm shall be set forth above, together with the signature of the officer or partner authorized to sign contracts for the firm.

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CITY OF VALLEJO
WATER DEPARTMENT

BIDDER'S BOND

KNOW ALL MEN/WOMEN BY THESE PRESENTS,

THAT we, _____

_____, as Principal, and

_____,

as Surety, are held and firmly bound unto the City of Vallejo, hereinafter called CITY, in the penal sum of TEN PERCENT (10%) OF THE TOTAL AMOUNT OF THE BID of the Principal above named, submitted by said Principal to the City of Vallejo, 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, administrators, and executors and successors, jointly and severally, firmly by these presents; in the sum of:

\$ _____

THE CONDITION OF THIS OBLIGATION IS SUCH THAT,

WHEREAS, the Principal has submitted the above-mentioned bid to the City of Vallejo, for certain construction specifically described as follows, for which bids are to be opened at Vallejo, California, on July 12, 2018, for the

Lake Madigan - Installation of bonneted knife gate valve on the outlet pipe with a flanged coupling adapter, a cast in place vault with concrete foundation, and concrete stairs. Lake Frey – Demolishing the existing platform and ladder and installing a new platform, ladder and hoist and trolley system.

NOW, THEREFORE, if the aforesaid Principal is awarded the contract and within the time and manner required under the Specifications, after the prescribed forms are presented to him/her for signature, enters into a written contract, in the prescribed form, in accordance with the bid, and files the two bonds with the City of Vallejo, one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by law, then this obligation shall be null and void; otherwise, it shall be and remain in full force and virtue.

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.

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

Principal

Surety

Address _____

NOTES:

1. Signature of those executing for the Surety must be properly acknowledged.

CITY OF VALLEJO
WATER DEPARTMENT

CONTRACTOR QUALIFICATIONS

This form must be completed, signed by bidder, and submitted to City of Vallejo with bidder's bid. Failure to complete, sign and submit with bidder's bid may result in bidder's bid being rejected as not responsive.

City has determined that bidders must meet the following minimum qualifications to bid the work of improvement contemplated herein:

1. Have possessed a valid, active and in good standing, State of California Department of Consumer Affairs, Contractor's License Board Classification A, for a minimum of five (5) continuous years prior to the date of bid opening.
2. Not have any pending disciplinary proceedings or investigations by the Contractors State License Board.
3. Have completed to the public owner's satisfaction, no less than two (2) public works projects in the State of California, each with an original contract price of no less than \$500,000 within the past five years prior to the date of bid opening.
4. Currently (as of the date of bid opening) or within the past five years, not have any suspensions, disbarments, or similar proceedings (including stipulated agreements), restricting, limiting or prohibiting bidder from bidding or performing other public works for any other public agency.

I, being the _____ (insert title) of bidder herein, declare that bidder meets all of the minimum criteria set forth above.

Signature

Print Name

Date

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DESIGNATION OF SUBCONTRACTORS

In compliance with the provisions of Section 4100 through 4114, inclusive, of the Public Contract Code, and any amendments thereto, each bidder shall set forth in his or her bid, the name and location of the place of business of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent (0.5%) of the prime contractor's total bid, or ten thousand (\$10,000) whichever is greater, and the dollar amount of the work which will be done by each subcontractor under this act. The prime contractor shall list only one subcontractor for each portion as is defined by the prime contractor in his or her bid.

Prime Contractor Self Perform requirement is **50%** (exclusive of specialty items). The Engineer shall use the Designation of Subcontractors form to determine the percentage of contract work amount performed by the contractor.

NAME	LOCATION BUSINESS	OF	CA CONTR. LICENSE NO.	CA DIR REGIST. NO.	DESCRIPTION OF SUB WORK	BID ITEMS	DBE (Y/N)	DBE CERT. NO.	DOLLAR AMOUNT OF SUB WORK (\$\$\$)

NOTICE TO BIDDERS: Listing of subcontractors is mandatory under Sections 4100-4113 of the California Public Contract Code. If this form is incomplete or inaccurate, your bid may be rejected.

DESIGNATION OF SUBCONTRACTORS

NAME	LOCATION BUSINESS	OF	CA CONTR. LICENSE NO.	CA DIR REGIST. NO.	DESCRIPTION OF SUB WORK	BID ITEMS	DBE (Y/N)	DBE CERT. NO.	DOLLAR AMOUNT OF SUB WORK (\$\$\$)

NON-COLLUSION AFFIDAVIT FOR CONTRACTOR OR SUBCONTRACTOR

STATE OF CALIFORNIA)
) ss
COUNTY OF _____)

_____ declares and says:

1. That he/she is the (owner, partner, representative, or agent) of _____ (hereinafter referred to as (contractor) or (subcontractor))
2. That he/she is fully informed regarding the preparation and contents of this proposal for certain work in the City of Vallejo, State of California.
3. That his/her proposal is genuine and is not collusive or a sham proposal.
4. That any of its officers, owners, agents, representatives, employees, or parties in interest, including this affiant, has not in any way colluded, conspired, connived or agreed, directly or indirectly, with any other bidder, firm, or person to submit a collusive or sham proposal in connection with such contract or to refrain to submitting a proposal in connection with such contract, or has in any manner, directly or indirectly, sought by unlawful agreement or connivance with any other bidder, firm, or person to fix the price or prices in said proposal, or to secure through collusion, conspiracy, connivance, or unlawful agreement any advantage against the City of Vallejo or any person interested in the proposed contract; and,
5. That the price or prices quoted in the proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the bidder or any of its agents, owners, representatives, employees, or parties in interest, including this affiant.

I certify (or declare) under penalty of perjury, that the foregoing is true and correct.

Dated this _____ day of _____, 20__, at _____, California.

Signed: _____

Title: _____

License Number
and Classification: _____

Expiration Date: _____

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CITY OF VALLEJO
WATER DEPARTMENT

NONDISCRIMINATION CLAUSE

Contractor shall refrain from discriminatory employment practices on the basis of race, religious creed, color, sex, national origin, ancestry, disability, medical condition, age, marital status or sexual orientation of any employee of, or applicant for employment with, Contractor.

Contractor further agrees as follows:

- (a) That the Contractor shall not because of the race, religious creed, color, sex, national origin, ancestry, disability, medical condition, age, marital status or sexual orientation of any person, refuse to hire or employ any person, or to bar or discharge any person from employment, or to discriminate against any person in compensation, or in the terms, conditions, or privileges of employment, and every employee shall receive equal opportunity for employment and shall be granted equal treatment with respect to compensation, terms, conditions, or other privileges of employment without regard to his race, religious creed, color, sex, national origin, ancestry, disability, medical condition, age, marital status or sexual orientation.
- (b) That the Contractor shall post in conspicuous places where they may be seen by every employee or applicant for employment notices, in such form as shall be prescribed by the City Manager, the provisions set forth above.
- (c) That the Contractor shall in all solicitations or advertisements for employment applications include in such solicitation or advertisement language which will reasonably convey notice that every qualified applicant will receive consideration for employment without regard to his race religious creed, color, sex, national origin, or ancestry, disability, medical condition, age, marital status or sexual orientation.
- (d) That the Contractor shall give written notice, in such form as shall be prescribed by the City Manager, of the Contractor's commitments under this contract to any labor union or employee association with which the Contractor has a collective bargaining contract, or other employer - employee labor agreement or understanding."

Contractor shall include the provisions of this Nondiscrimination Clause in every subcontract, including subcontracts for the provision of materials or equipment.

By submitting a bid, the Contractor agrees to comply with all the non-discrimination provisions contained in the Vallejo Municipal Code.

BIDDER'S SIGNATURE

DATE

CITY OF VALLEJO
WATER DEPARTMENT

**CONTRACT
FOR**

LAKE MADIGAN & LAKE FREY IMPROVEMENTS

THIS CONTRACT ("Contract") made and concluded in duplicate this _____ day of _____, 20__, at Vallejo, California, by and between the City of Vallejo, a municipal corporation of the State of California, acting by and through its City Council, hereinafter called City, and _____, a California Corporation, hereinafter called CONTRACTOR.

WITNESSETH:

WHEREAS, the City Council of said City heretofore caused plans and specifications for the work hereinafter mentioned to be prepared, and thereafter did approve and adopt said plans and specifications; and,

WHEREAS, the City Council of said City did cause to be noticed for the time and in the manner required by law a notice inviting sealed bids for the performance of said work; and,

WHEREAS, Contractor, in response to such notice, submitted to the City Council of said City within the time specified in said notice, and in the manner provided for therein, a sealed bid for the performance of the work specified in said plans and specifications, which said bid and proposal, and the other bids and proposals submitted in response to said notice, the City Council of City, by and through its authorized representatives, publicly opened and canvassed in the manner provided by law; and,

WHEREAS, Contractor was the lowest responsible bidder for the performance of said work, and said City Council of City, as a result of the canvass of said bids, did determine and declare Contractor to be the lowest responsible bidder for the work and award to it a contract therefore.

NOW, THEREFORE, in consideration of the above, it is mutually agreed between the parties hereto as follows, to wit:

1. SCOPE OF WORK

Lake Madigan - Installation of bonneted knife gate valve on the outlet pipe with a flanged coupling adapter, a cast in place vault with concrete foundation, and concrete stairs. Lake Frey – Demolishing the existing platform and ladder and installing a new platform, ladder and hoist and trolley system. The Contractor shall provide all labor, tools, and materials for a complete and working project in conformance with the intent shown on the drawings and specified herein and as provided for and set

forth in said plans, specifications, and any addendum that may be issued prior to the date of bid, or in either of them, which said plans and specifications are hereby referred to by such reference, incorporated herein, and made a part of this Contract.

The following documents shall constitute the Contract Documents:

- (a) Notice to Contractors;
- (b) Instructions to Bidders;
- (c) Proposal Form;
- (d) Plans;
- (e) Specifications, special provisions;
- (f) Change Orders thereto;
- (g) Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation, 2010 edition, Sections 10 through 95, all as modified herein;
- (h) City of Vallejo Regulations and Standard Specifications for Public Improvements, December 2011 edition;
- (i) Vallejo Sanitation & Flood Control District Master Bid Document, dated March 2007;
- (j) Any other documents identified as such in the Contract Documents.

2. TERMS AND CONDITIONS

This Contract consists of the Contract Documents identified as such, all of which are incorporated herein by reference as though set forth in full, and all of which are part of this Contract, and Contractor and City agree to comply with and fulfill all obligations, promises, covenants and conditions imposed upon each of them in the Contract Documents. All of said work done under this Contract shall be performed to the satisfaction of the City Council, or its representative, who shall have the right to reject any and all materials and supplies furnished by Contractor which do not strictly comply with said plans and specifications, together with the right to require Contractor to replace any and all work furnished by Contractor which shall not either in workmanship or material be in strict accordance with said plans and specifications.

The said Contractor agrees to receive and accept the prices set forth in the proposal as full compensation for furnishing all materials and for doing all the work contemplated and embraced in this agreement, also for all loss or damage arising out of the nature of the work aforesaid, or from the action of the elements or from any foreseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by the City and for all risks of every description, connected with the work; also for all discontinuance of work, and for well and faithfully completing the work, and the whole thereof, in the manner and according to the Plans and Specifications and the requirements of the Engineer under them.

By my signature as Contractor, I certify that I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for Worker's Compensation or to undertake self-insurance in accordance with the provisions

of that Code, and I will comply with such provisions before commencing the performance of the work of this contract.

Pursuant to Section 1700, and following, of the California Labor Code, the Contractor shall pay not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations. Copies of such prevailing rate of per diem wages are on file at the office of the City Clerk, City of Vallejo, City Hall, 555 Santa Clara Street, Vallejo, California CA. Those copies shall be made available to any interested party upon request. The Contractor shall forfeit, as penalty to the City, Fifty Dollars (\$50.00) for each calendar day or portion thereof, for each workman paid less than the stipulated prevailing rates for any work done under the contract by it or by any subcontractor under it, in violation of the provisions of such Labor Code.

City shall pay Contractor the sums set forth on Exhibit A, hereto, in accordance with all of the terms and conditions of the Contract Documents.

The Contractor shall be permitted to substitute designated securities for any moneys withheld by the City of Vallejo to insure performance under the Contract. This right of substitution shall be exercised in the manner and subject to the conditions specified in the Contract Documents. The provisions of Public Contract Code section 22300 are incorporated herein by reference as though set forth in full, and shall govern the substitution of securities and/or escrow account.

The person signing this Agreement for Contractor hereby represents and warrants that he/she is fully authorized to sign this Agreement on behalf of Contractor.

SIGNATURES ARE ON THE FOLLOWING PAGE

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands and affixed their seal the day and year first above written.

CITY OF VALLEJO,
a municipal corporation

Company Name.
entity type,

By: _____
Daniel E. Keen
City Manager

By: _____
Name: _____

Attest: _____
Dawn G. Abrahamson
City Clerk

Title: _____
(Corporate Seal)

(City Seal)

Approved as to Content:

Mike Malone
Water Director

Approved as to Form and Insurance

Claudia Quintana
City Attorney

EXHIBIT A

[BID SHEET TO BE INSERTED]

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CITY OF VALLEJO
WATER DEPARTMENT

FAITHFUL PERFORMANCE BOND

KNOW ALL MEN/WOMEN BY THESE PRESENTS, that we, _____

_____, as Principal, and

_____, as Surety, are held and firmly bound unto the City of Vallejo, a municipal corporation of the State of California, hereinafter called the City, in the penal sum of _____ DOLLARS (\$ _____), and no more, for the work described below, for the payments of which sum in lawful money of the United States of America well and truly to be made to the City of Vallejo, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents as herein above provided.

THAT WHEREAS, the Principal has entered into a contract with said City for the construction of:

LAKE MADIGAN AND LAKE FREY IMPROVEMENTS

NOW, THEREFORE, the condition of this obligation is such that if the above bounded Principal shall in all things stand to abide by, and well and truly keep and perform the covenants, conditions and agreements in the foregoing contract agreed on his/her or their part to be kept and performed at the time and in the manner herein specified, and shall indemnify and save harmless the City of Vallejo, its officers, agents and employees as therein stipulated, then this obligation shall become null and void; otherwise, it shall remain in full force and virtue to guarantee Contractor's faithful performance of its obligations in the Contract Documents, and Principal and Surety, in the event suit is brought on this bond, will pay to the Obligee such reasonable attorneys' fees as may be fixed by the Court.

The Surety herein, for value received, hereby stipulates and agrees that no change, extension of time, alteration, addition or modification to the terms and conditions of said contract, or the specifications accompanying the same shall in any manner affect its obligations on this bond, and said Surety does hereby waive notice of any such change, extension, alteration or addition. Said Surety hereby waives the provisions of Section 2819 and 2845 of the Civil Code of the State of California.

Faithful Performance Bond

Bond Number: _____

Premium: _____

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

PRINCIPAL

SURETY

SURETY INFORMATION:

Contact Person: _____

Name of Company: _____

Address: _____

Telephone: (_____) _____ Fax no. : (_____) _____

- NOTE:
- (1) Signatures of those executing for the Surety must be properly acknowledged.
 - (2) This Bond must be in an amount equal to 100% of the amount bid.

APPROVED AS TO FORM:

Claudia Quintana
City Attorney

CITY OF VALLEJO
WATER DEPARTMENT

PAYMENT (LABOR AND MATERIALS) BOND

KNOW ALL MEN/WOMEN BY THESE PRESENTS, that whereas, the City of Vallejo, a municipal corporation of the State of California, acting through its City Council, has awarded: hereinafter designated as the Principal, a contract for:

WATER MADIGAN AND LAKE FREY IMPROVEMENTS

AND WHEREAS, said Principal is required to furnish a bond in connection with said contract, provided that if said Contractor, or any of his/her or its subcontractors, shall fail to pay for any materials, provisions, provender or other supplies, or teams, used in, upon, for or about the performance of the work contracted to be done, or any work or labor done thereon of any kind, or for amounts due under the Unemployment Insurance Code with respect to such labor, the Surety of this bond will pay the same.

NOW, THEREFORE, we, _____

as Principal and _____,

as Surety, are held firmly bound unto the City of Vallejo, a municipal corporation, hereinafter called City, in the penal sum of _____
_____ DOLLARS (\$ _____), and no more, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents, as herein provided.

The condition of this obligation is such that, if said Principal, or his/her or its Subcontractors, shall fail to pay for any materials, provisions, provender or other supplies or teams used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code with respect to such work or labor, as required by the provisions of California Civil Code, commencing with Section 9550, and providing that the persons, companies or corporations so furnishing said materials, provisions, or other supplies, appliances or power used in, for or about the performance of the work contracted to be executed or performed, or any person, company, or corporation, renting, or hiring implements, or machinery, or power, for, or contributing to said work to be done, or any person who performs work or labor upon the same, or any person who supplies both work and materials therefor, shall have complied with the provisions of said Title 15, the Surety, or Sureties, hereon will pay the same in an amount not exceeding the sum specified in his/her or its bond, and also, in case suit is brought upon this bond, a reasonable attorney's fee to be fixed by the Court, then this obligation shall become null and void; otherwise, it shall remain in full force and virtue.

Payment (Labor and Materials) Bond
Page 2

This bond shall inure to the benefit of any and all persons, companies and corporations entitled to file claims under Section 9100 of the Civil Code of the State of California so as to give a right of action to them or their assigns in any suit brought upon this bond.

The Surety herein, for value received, hereby stipulates and agrees that no change, extension of time, alteration, addition or modification to the terms and conditions of said contract, or the specifications accompanying the same, shall in any manner affect its obligation on this bond, and said Surety does hereby waive notice of any such change, extension, alteration or addition.

IN WITNESS WHEREOF, the above bounden parties have executed this Instrument under several seals this _____ day of _____, 20_____. The name and Corporate Seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representatives, pursuant to authority of its governing body.

PRINCIPAL:

SURETY:

SURETY INFORMATION:

Contact Person: _____

Name of Company: _____

Address: _____

Telephone: (_____) _____ Fax no.: (_____) _____

- NOTE: (1) Signatures of those executing for the Surety must be properly acknowledged.
- (2) This Bond must be in an amount equal to 100% of the amount bid.

APPROVED AS TO FORM:

Claudia Quintana
City Attorney

CITY OF VALLEJO
WATER DEPARTMENT

CONTRACTOR QUALIFICATION QUESTIONNAIRE

If requested by City, bidder agrees to complete, sign and return this Contractor Qualification Questionnaire, including all required supporting documentation, within five (5) days of being requested by City. If bidder fails or refuses to complete the Contractor Qualification Questionnaire, furnish all required attachments, sign the Contractor Qualification Questionnaire, or return it to the City within five (5) days of City's request, bidder will not be considered for award of the contract, and further, bidder agrees that the City of Vallejo may award the work to another bidder or call for new bids. In such event, the bidder shall be liable to the City for the difference between the amount of the disqualified bid and the larger amount for which the City procures the work plus all of the City's costs, damages, expenses and liabilities.

Bidder shall fully and completely answer each question set forth below. If necessary attach additional sheets. Print or type each response. If your response to any question is "no" or "none," you must state "no" or "none." "Not applicable" or other similar response will not be accepted.

1. State the full legal name of the bidder.

2. State the nature of the bidder's business entity. (Sole proprietorship, joint venture, partnership, corporation, or other [describe]).

3. State the name and address of each person or other legal entity, which has a legal or equitable ownership of ten percent (10%) or more of the bidder. For each such person or legal entity, state that person or entity's ownership interest, title and responsibilities, if any.

4. Has any person or legal entity holding a legal or equitable ownership of the bidder, ever been accused of a civil violation of California Government Code section 12650, et seq., (False Claims Act)? If so, describe in detail all facts, circumstances and the outcome.

5. Has any person or legal entity holding a legal or equitable ownership of ten percent (10%) or more of the bidder, ever been determined by a public agency to not be a

responsible bidder? If so, state the name, address and telephone number of the public agency, including the name of the agencies' contact person.

6. State the bidder's contractor's license number.
7. State the date bidder first began business.
8. State any other names that bidder has used or done business under in the past five (5) years.
9. Describe in general, bidder's experience.
10. Has bidders ever failed to complete a construction contract?
11. Has bidder's control over a work of improvement, ever been terminated?
12. For site and facility improvements in the equal or greater scale than described in the scope of work that bidder has furnished labor, services, materials or equipment in the past five years, state: the name of each project; the contract amount for each project; the name, address and telephone number of the owner and owner's representative, for each project; and a general description of the work performed by bidder on each project.
13. For every public work of improvement upon which bidder has furnished labor, services, materials or equipment in the past five years, whether completed or not, for which the bidder's original contract was greater than \$500,000, but not more than \$5,000,000, state the name, address and telephone number of the owner and principal designer (architect or engineer).

14. For every lawsuit or arbitration between bidder and the owner of any work of improvement, limited to such lawsuits or arbitrations initiated or completed within the past five (5) years, state the name and address of the tribunal, the matter number, the parties, a general description of the nature of the dispute, and the outcome, if any.
15. Has bidder ever been charged with a felony? If so, describe in detail all facts, circumstances and the outcome, furnishing the name and address of the court in which the charge(s) were filed, including the matter name and case number.
16. Has anyone ever alleged that bidder violated California Government Code section 12650, et seq., (False Claims Act)? If so, describe in detail all facts, circumstances and the outcome.
17. Has bidder ever been accused of presenting false claims to a public agency or public owner, as such claims are defined in California Government Code section 12650, et seq, or 31 United States Code section 3729, et seq.?
18. Has any public agency ever determined or ruled that bidder is not a responsible bidder? If so, state the name, address and telephone number of the public agency, including the name of the agencies' contact person.
19. Has any public agency ever issued a letter, ruling or determination debaring bidder or anyone holding a legal or equitable interest in bidder, from bidding public works? (This includes debarments that are simultaneously or subsequently suspended, revoked or withdrawn.)
20. Has bidder ever entered into an agreement with any public agency, to not bid work for that public agency?
21. Within the past seven (7) years, has bidder ever failed to complete a public works construction project, within the time allowed by the contract, plus written agreed upon contract time extensions? If so, state the name, address and telephone

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

EXECUTED ON THE DATE INDICATED BELOW, AT THE LOCATION INDICATED BELOW.

Dated: _____

Bidder

By:

(Printed name of signor)

(Title of signor)

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CITY OF VALLEJO
WATER DEPARTMENT

CONTRACT CHANGE ORDER NO.: _____ **DATE:** _____

TO: _____

PROJECT: LAKE MADIGAN AND LAKE FREY IMPROVEMENTS

FROM: CITY OF VALLEJO

This change order modifies and amends the provisions of that certain Contract dated _____ by and between the City and _____ ("Contractor").

REFERENCE: Contract Plans, Sheet No.
or other Plans attached

Contractor is hereby directed to make the following changes to the Work:

By signing this Change Order, Contractor understands and agrees that it is accepting the specified sums and adjustment of contract time of completion (if any) set forth herein as full, final and complete satisfaction of any and all claims by Contractor for all costs and expenses of Contractor and anyone for whom Contractor may be responsible for the work referred to herein, including but not limited to costs or expenses of the Contractor or any of its subcontractors, materials suppliers, vendors or anyone else for whom Contractor is responsible, for labor, materials, services or equipment, no matter how characterized, whether known or unknown to Contractor, including but not limited to, all field and home office overhead, delay costs/claims, acceleration costs/claims, unabsorbed or under-absorbed home office overhead, extended field costs, general conditions, claim preparation costs, inefficiencies, or the like, no matter how characterized. Contractor further understands and agrees by signing this Change Order that any attempt by Contractor to purportedly reserve rights to claim additional time or compensation for the work referred to herein, is void.

ADJUSTMENT OF CONTRACT TIME OF COMPLETION: _____

AGREED PRICE: _____

FORCE ACCOUNT

BASE CONTRACT PRICE: _____

PREVIOUS CONTRACT CHANGE ORDER: _____

NEW ADJUSTED CONTRACT PRICE: _____

EXCEPT AS SET FORTH ABOVE, ALL TERMS AND PROVISIONS OF THE CONTRACT AND ALL PRIOR CHANGE ORDERS REMAIN IN FULL FORCE AND EFFECT.

RECOMMENDED: _____
NAME TITLE

Execution of this Change Order by both parties constitutes a binding agreement. This document constitutes the entire agreement between the parties. The person signing this Change Order for Contractor hereby represents and warrants that he/she is fully authorized to sign this Agreement on behalf of Contractor.

ACCEPTED AND AGREED

Contractor: _____ DATE _____
[Type in name and title]

City: _____ DATE _____
WATER SUPERINTENDENT

SECTION A - SPECIAL PROVISIONS

1. Location of Work – At lakes Madigan and Frey which are located 2.5 to 3.5 miles north of Green Valley and approximately 4 miles east of Napa in Solano County, California.
2. Scope of Work - For all work on this project the Contractor shall furnish all labor, materials, tools, equipment, transportation, appliances and services required to completely execute the work as set forth on the Contract Documents. The subdivision of these specifications into divisions is not intended to strictly set forth or limit the scope of any subcontractor and shall not relieve the Contractor of the responsibility for executing all work on the project as a whole.
3. Pre-Construction Conference - The Contractor, Water Director or a designee and other interested parties shall meet at a pre-construction conference to be scheduled after execution of the construction Contract and prior to the start of construction. The purpose of this conference is to review job schedules, traffic control, affirmative action, and to discuss various other aspects of the work and to clarify procedures.

The Contractor shall submit the following to the Water Director or a designee by the date of the pre-construction conference:

- A. Detailed CPM Construction Schedule for review and approval.
 - B. Detail Stage Construction and Traffic Handling Plan for review
 - C. A plan and documentation for legal disposal of trench spoils and materials for review and approval.
 - D. "Notice" to homeowners, residents, commuters and/or affected parties for review and approval.
 - E. Construction safety plan, material shop drawings, any and all other material or required submittals for review and approval. All submittals shall be in writing.
4. Underground Utilities - The Contractor shall locate all underground obstructions and utilities - gas, electric, water lines, etc. Repair of damage of any utility lines shall be made at the Contractor's expense. See applicable drawings, if any.
 5. Materials and Tests -The Contractor shall furnish written laboratory reports from a reputable testing or inspection agency acceptable to City of Vallejo, or written certification from the manufacturer as to compliance with the Specifications as to the composition, durability and performance of the all materials used in the project. Certain specification sections may require special items or materials to be included

in the submittal.

6. City Furnished Materials - The City will furnish to the Contractor free of charge for use under these Specifications the following materials: **(NOT APPLICABLE)**
7. Construction Upon Private Property - The Contractor shall note that the work may be performed on or in the vicinity of private property. The Contractor shall, at all times, remove all litter, debris, and construction waste, minimize noise, dust, standing water, vibrations, hazardous conditions and provide safe access to these properties. The Contractor is prohibited from using any and all privately owned utilities. The Contractor's materials and equipment shall not be stored upon private property without written approval from the resident and/or owner.

Construction on private property during overtime, weekend, holiday or any other irregular period shall be performed only when the Contractor has requested and received written approval from the adjacent residents and the Assistant Public Works Director-Water.

No separate payment shall be made for the above considerations. Full compensation for the above construction restrictions shall be considered as included in the price paid for the various items of work involved.

8. As-Built Drawings - The Contractor will keep up to date at all times, a complete and accurate set of record prints, which shall be corrected regularly, showing every change from the Contract Documents, including all addendum, Change Orders, job decisions, etc. Upon completion of the work, a set of as-built prints shall be made by the Contractor after consultation with the project Engineer and all changes noted. All changes shall be neatly and legibly drawn to scale on the set of prints using standard architectural or engineering drafting practices.
9. Hazardous Waste in Excavation – If the Contractor encounters material in excavation, which the contractor has reason to believe may be hazardous waste as defines by Section 25117 of the Health and Safety Code, the contractor shall immediately so notify the Water Distribution Superintendent in writing. Excavation in the immediate area of the suspected hazardous material shall be suspended until the Water Distribution Superintendent authorizes it to be resumed. If such suspension delays the current controlling operation by more than one (1) working day, the Contractor shall be granted an extension of time as provided in Section 8-1.07, "Liquidated Damages," of the General Provisions. Upon authorization from the Water Distribution Superintendent to proceed, the Contractor shall resume excavation operations per the requirements of the plans and specifications.

If such suspension delays the current controlling operation by more than two (2) working days, the delay shall be considered a right of way delay and the Contractor shall be compensated for such delay as provided in Section 8-1.09, "Right of Way Delays," of the General Provisions.

The City reserves the right to use other forces for exploratory work to identify and determine the extent of hazardous material and for removing such material.

SECTION B - GENERAL PROVISIONS

SECTION 1: DEFINITIONS AND TERMS

1-1.01 General

Unless the context otherwise requires, wherever in the Specifications and other Contract Documents the following abbreviations and terms, or pronouns in place of them, are used, the intent and meaning shall be interpreted as provided in this Section One. Working titles having a masculine gender, such as "workman" and "journeyman" and the pronoun "he," are utilized in the Specifications for the sake of brevity, and are intended to refer to persons of either gender.

1-1.02 ABBREVIATIONS

AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Transportation Officials
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
APHA	American Public Health Association
API	American Petroleum Institute
AREA	American Railway Engineering Association
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWG	American Wire Gage
AWPA	American Wood Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association
EIA	Electronic Industries Association
IEEE	Institute of Electrical and Electronics Engineers
NEMA	National Electrical Manufacturers Association
UL	Underwriters' Laboratories Inc.

1-1.02A UNITS OF MEASUREMENT

These General Provisions contain units in two systems of measurement: units shown in the International System of Units (SI or "metric") and units in the United States Standard Measures are shown in braces "{}". The Department does not warrant the accuracy of the units shown in United States Standard Measures, and any use of United States Standard Measures is at the sole risk of those agencies and others that specify United States Standard Measures units in their contracts. The measurements expressed in the two systems are not necessarily equal, and items constructed or fabricated in one system are not necessarily interchangeable with items constructed or fabricated in the other

system. The project Special Provisions designate the system of units that will apply to contracts referencing these Standard Specifications.

Some of the symbols for metric units of measurement used in the Specifications and in the Water Distribution Superintendent's Estimate are defined as follows. The symbols for other units of measurement used in the Specifications are as defined in ASTM Designation: E-380, or in the various Specifications and test referenced in the Specifications.

Symbols as used in the Specifications	Symbols as used in the Water Distribution Superintendent's Estimate	Definitions
A	—	amperes
—	EA	each
g	G	gram
kg	KG	kilogram
ha	HA	hectare (10 000 m ²)
h	H	hour
J	—	joule
—	LNKM	lane kilometer
L	L	liter
—	LS	lump sum
m	M	meter
km	KM	kilometer
mm	MM	millimeter
µm	—	micrometer
nm	—	nanometer
m ²	M ²	square meter
m ³	M ³	cubic meter
N	—	newton
N·m	—	newton meter
Ω	—	ohm
Pa	—	pascal
kPa	—	kilopascal
MPa	—	megapascal
s	—	second
—	STA	station (100 m)
—	TAB	tablet
tonne	TONN	metric ton (1000 kg)
W	—	watt
V	—	volt

Some of the symbols for United States Standard Measures units of measurement used in the Specifications and in the Water Distribution Superintendent's Estimate are defined as follows.

Symbol Used	Definitions
A	amperes
EA	each
LB	pound
ACRE	acre
h	hour
LNMI	lane mile
GAL	gallon
LS	lump sum
LF	linear foot
MI	mile
MSYD	thousand station yard
SF	square foot
CF	cubic foot
SY	square yard
CY	cubic yard
Ω	ohm
s	second
STA	100 feet
TAB	tablet
TON	2,000 pounds
W	watt
V	volt
MFBM	thousand foot board measure

1-1.03 ACCEPTANCE

The formal written acceptance by the Vallejo City Council of an entire contract which has been completed in all respects in accordance with the plans and Specifications and any modifications thereof previously authorized in writing.

1-1.04 (BLANK)

1-1.05 BASE

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

1-1.06 BASEMENT MATERIAL

The material in excavation or embankments underlying the lowest layer of subbase, base, pavement, surfacing or other specified layer which is to be placed.

1-1.07 BIDDER

Any individual, firm, partnership, corporation, or combination thereof, submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.

1-1.08 BRIDGE

Any structure, with a bridge number, which carries a utility facility, or railroad, highway, pedestrian or other traffic, over a water course or over or under or around any obstruction.

1-1.085 CONDUIT

A pipe or tube in which smaller pipes, tubes or electrical conductors are inserted or are to be inserted.

1-1.09 CONTRACT

The written agreement covering the performance of the work and the furnishing of labor, materials, tools and equipment in the construction of the work. The Contract shall include:

- (a) Notice to Contractors,
- (b) Instructions to Bidders,
- (c) Proposal Form,
- (d) Plans, Specifications, special provisions;
- (e) Addenda and Change Orders thereto;
- (f) Standard Specifications, State of California, Business, Transportation and Housing Agency, Department of Transportation, 2010 edition, Sections 10 through 95, all as modified herein;
- (g) City of Vallejo Standard Specifications and Standard Drawings , December 2011 edition;
- (h) Vallejo Sanitation & Flood Control District Master Bid Document, dated March 2007.

All documents comprising the Contract may also be referred to as the "Contract Documents."

1-1.10 CONTRACTOR

The person or persons, firm, partnership, corporation, or combination thereof, private or municipal, who have entered into a Contract with the City of Vallejo, as party or parties of the second part or their legal representatives.

1-1.11 CULVERT

Any structure, other than a bridge, which provides an opening under a roadway for drainage or other purposes.

1-1.12 DAYS

Unless otherwise designated, days as used in the Specifications will be understood to mean calendar days.

1-1.13 DEPARTMENT

The City of Vallejo Water Department

1-1.14 DETOUR

A temporary route for traffic around a closed portion of a road.

1-1.15 DIRECTOR

The City of Vallejo Water Department Director, or his/her authorized representative.

1-1.16 DIVIDED HIGHWAY

A highway with separated traveled ways for traffic, generally in opposite directions.

1-1.17 (BLANK)

1-1.18 ENGINEER

The City of Vallejo, Water Department, Project Engineer, acting either directly or through properly authorized agents, the agents acting within the scope of the particular duties delegated to them, unless otherwise specified or implied in the specification section

Design Engineer – BKF Engineer, Yousra Tilden, or authorized representative

1-1.19 WATER DISTRIBUTION SUPERINTENDENT'S ESTIMATE

The list of estimated quantities of work to be performed as contained in the "Proposal Form."

1-1.20 FEDERAL AGENCIES

Whenever, in the Specifications, reference is made to any Federal agency or officer, the reference shall be deemed made to any agency or officer succeeding in accordance with law to the powers, duties, jurisdiction and authority of the agency or officer mentioned.

1-1.21 FIXED COSTS

Any necessary labor, material and equipment costs directly expended on the item or items under consideration which remain constant regardless of the quantity of the work done.

1-1.22 FRONTAGE ROAD

A local street or road auxiliary to and located generally on the side of an arterial highway for service to abutting property and adjacent areas and for control of access.

1-1.23 GRADING PLANE

The surface of the basement material upon which the lowest layer of subbase, base, pavement, surfacing or other specified layer is placed.

1-1.24 HIGHWAY

The whole right of way or area which is reserved for and secured for use in constructing the roadway and its appurtenances.

1-1.25 LABORATORY

Any testing laboratory identified as such by City of Vallejo.

1-1.255 LEGAL HOLIDAYS

Those days designated as City observed holidays specifically:

a) New Year's Day, b) Martin Luther King, Jr. Day, c) President's Day, d) Memorial Day, e) Independence Day, f) Labor Day, g) Columbus Day, h) Veterans' Day, i) Thanksgiving Day, j) Day after Thanksgiving, k) Christmas Day

1-1.26 LIQUIDATED DAMAGES

The amount prescribed in the Contract Documents, to be paid to the City of Vallejo or to be deducted from any payments due or to become due the Contractor for each day's delay in completing the whole or any specified portion of the work beyond the time allowed in the Contract Documents.

1-1.265 MUTCD OR CAMUTCD

The State of California, Department of Transportation publication entitled "California Manual on Uniform Traffic Control Devices."

1-1.27 MEDIAN

That portion of a divided highway separating the traveled ways for traffic in opposite directions including inside shoulders.

1-1.275 OFFICE OF STRUCTURE DESIGN

The State of California Office of Structure Design of the Department of Transportation.

When the Specifications require working drawings to be submitted to the State Office of Structure Design, the drawings shall be submitted to: Office of Structure Design, Documents Unit, Mail Station 9, 1801 30th Street, Sacramento, CA 95816, Telephone (916) 227-8252.

1-1.28 PAVEMENT

The uppermost layer of material placed on the traveled way or shoulders. This term is used interchangeably with surfacing.

1-1.29 PLANS

The official project plans and Standard Plans, profiles, typical cross sections, working drawings and supplemental drawings, or reproductions thereof, approved by the Engineer, which show the location, character, dimensions and details of the work to be performed. These documents are to be considered as a part of the plans. In the above definition, the following terms are defined as follows:

- Project Plans

The project plans are specific details and dimensions peculiar to the work and are supplemented by the Standard Plans insofar as the same may apply.

- Standard Plans

The Standard Plans issued by the State of California, Business, Transportation and Housing Agency, Department of Transportation.

1-1.30 PROCESSING

Any operation or operations of whatever nature and extent required to produce a specified material.

1-1.31 PROPOSAL

The offer of the Bidder for the work when made out and submitted on the prescribed proposal form, properly signed and guaranteed.

1-1.32 PROPOSAL FORM

The approved form upon which the City of Vallejo requires formal bids be prepared and submitted for the work.

1-1.33 PROPOSAL GUARANTY

The cash, cashier's check, certified check or bidder's bond accompanying the proposal submitted by the bidder, as a guaranty that the bidder will enter into a contract with the City of Vallejo for the performance of the work if the Contract is awarded to the bidder.

1-1.34 ROADBED

The roadbed is that area between the intersection of the upper surface of the roadway and the side slopes or curb lines. The roadbed rises in elevation as each increment or layer of subbase, base, surfacing or pavement is placed. Where the medians are so wide as to include areas of undisturbed land, a divided highway is considered as including 2 separate roadbeds.

1-1.35 ROADWAY

That portion of the highway included between the outside lines of sidewalks, or curbs, slopes, ditches, channels, waterways, and including all the appertaining structures, and other features necessary to proper drainage and protection.

1-1.36 SHOULDERS

The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of base and surface courses.

1-1.37 SPECIAL PROVISIONS

The special provisions are specific clauses setting forth conditions or requirements peculiar to the work and supplementary to these Specifications.

1-1.38 SPECIFICATIONS

The directions, provisions and requirements contained in the General Provisions, Wage and Equipment Rate and Technical Specifications section as supplemented by the Standard Specifications, City of Vallejo Standard Specifications and Standard Drawings. Whenever the term "these Specifications" or "these Standard Specifications" is used in this Contract, it means the provisions set forth in this Contract. "Specifications" or "Standard Specifications" also means the State of California, Department of Transportation, Standard Specifications, 2010 edition, Sections 10 through 95 only.

1-1.39 STATE

The State of California.

1-1.40 (BLANK)

1-1.41 SUBBASE

A layer of specified material of planned thickness between a base and the basement material.

1-1.42 SUBGRADE

That portion of the roadbed on which pavement, surfacing, base, subbase, or a layer of any other material is placed.

1-1.43 SUBSTRUCTURE

All that part of the bridge below the bridge seats, tops of piers, haunches of rigid frames, or below the spring lines of arches. Backwalls and parapets of abutments and wingwalls of bridges shall be considered as parts of the substructure.

1-1.44 SUPERSTRUCTURE

All that part of the bridge except the bridge substructure.

1-1.45 SURFACING

The uppermost layer of material placed on the traveled way, or shoulders. This term is used interchangeably with pavement.

1-1.46 TRAFFIC LANE

That portion of a traveled way for the movement of a single line of vehicles.

1-1.47 TRAVELED WAY

That portion of the roadway for the movement of vehicles, exclusive of shoulders.

1-1.48 WORK

All the work specified, indicated, shown, contemplated or inferable from the Contract Documents to construct the improvement, including all alterations, amendments or extensions thereto made by Contract change order.

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SECTION 2: PROPOSAL REQUIREMENTS AND CONDITIONS

2-1.01 CONTENTS OF PROPOSAL FORMS

Prospective bidders must use City of Vallejo proposal forms which will refer to the special provisions and project plans for the work to be done and will include a schedule of items for which bid prices are asked, showing the approximate estimate of the various quantities and kinds of work to be performed or materials to be furnished.

2-1.02 APPROXIMATE ESTIMATE

The quantities given in the proposal form and Contract are approximate only, being given as a basis for the comparison of bids. The City of Vallejo does not, expressly or by implication, agree that the actual amount of work will correspond therewith, and reserves the right to increase or decrease the amount of any class or portion of the work, or to omit portions of the work.

2-1.03 EXAMINATION OF PLANS, SPECIFICATIONS, CONTRACT, AND SITE OF WORK

All bidders shall carefully and completely examine the site of the work contemplated, the plans and Specifications, and the proposal and Contract forms therefor, and perform all tests and inspections necessary to inform bidder of all conditions that may be encountered, the character, quality and scope of work to be performed, and the quantities of materials to be furnished. The submission of a bid shall be conclusive evidence that the bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality and scope of work to be performed, the quantities of materials to be furnished and as to the requirements of the proposal, plans, Specifications and the Contract.

Where the City of Vallejo has made investigations of site conditions, including subsurface conditions in areas where work is to be performed under the Contract, or in other areas, some of which may constitute possible local material sources, bidders and Contractor may, upon written request, inspect the records of the City of Vallejo as to those investigations subject to and upon the conditions hereinafter set forth. The investigations are made only for the purpose of study and design.

The records of investigations, project records, log of test borings, record of geotechnical data, investigation of subsurface conditions, "Materials Information," cross-sections, contour maps, and any other investigations provided by City of Vallejo, are not a part of the Contract and are available solely for the convenience of the bidder or Contractor. It is expressly understood and agreed that the City of Vallejo assumes no responsibility whatsoever in respect to the sufficiency or accuracy of the above described documents or of the interpretations set forth therein or made by the City of Vallejo in its use thereof and there is no warranty or guaranty, either express or implied, as to the completeness or accuracy of the documents, that the conditions indicated by the documents are representative of those existing in or throughout those areas, or any part thereof, or that

unlooked-for developments may not occur, or that materials other than, or in proportions different from those indicated, may not be encountered.

The availability or use of information described in this section is not to be construed in any way as a waiver of the provisions of the first paragraph in this section and a bidder or Contractor shall make their own investigation and examination to be satisfied as to conditions to be encountered in the performance of the work.

No information derived from the inspection of investigations or compilation thereof made by the City of Vallejo or from the Water Distribution Superintendent, or their consultants, will in any way relieve the bidder or Contractor from any risk or from properly fulfilling the terms of the Contract.

2-1.04 ADDENDUM

If discrepancies or apparent errors are found in the Contract Documents prior to the date of bid opening, bidders shall submit a written request for clarification to Water Superintendent, which response to said request will be given in the form of addenda to all bidders, if time permits.

The correction of any discrepancies in, or omissions from the plans, Specifications, or other Contract Documents, or any interpretation thereof, during the bidding period will be made only by an addendum issued in writing by the City of Vallejo. A copy of each such addendum issued by the City of Vallejo will be electronically mailed, faxed or delivered to each person receiving a set of the Contract Documents, and shall be made a part of the Contract. Any other interpretation or explanation of such documents will not be considered binding.

2-1.05 PROPOSAL FORMS

The City of Vallejo will furnish to each bidder a standard proposal form, which, when filled out and executed may be submitted as that bidder's bid. Bids not presented on forms so furnished, and copies or facsimiles of the bidder's completed and executed proposal forms submitted as a bid may be rejected.

2-1.054 (BLANK)

2-1.056 (BLANK)

2-1.06 (BLANK)

2-1.07 PROPOSAL GUARANTY

The proposal must be accompanied by cash, a bidder's bond, certified check, or cashier's check in an amount not less than ten percent (10%) of the amount bid. The bidder's bond must be signed in favor of the City of Vallejo, and the certified check or cashier's check must be made payable to the City of Vallejo.

2-1.08 WITHDRAWAL OF PROPOSALS

Any bid may be withdrawn at any time prior to the date and time fixed for the opening of bids only by written request for the withdrawal of the bid filed at the location at which the bid was received by the City of Vallejo. The request shall be executed by the bidder or the bidder's duly authorized representative. The withdrawal of a bid does not prejudice the right of the bidder to file a new bid. Whether or not bids are opened exactly at the time fixed for opening bids, a bid will not be received after that time, nor may any bid be withdrawn after the time fixed for the opening of bids.

2-1.09 PUBLIC OPENING OF PROPOSALS

Proposals will be opened and read publicly at the time and place indicated in the "Notice to Contractors." Bidders or their authorized agents are invited to be present.

2-1.095 RELIEF OF BIDDERS

Attention is directed to the provisions of Public Contract Code Sections 5100 to 5107, inclusive, concerning relief of bidders and in particular to the requirement therein, that if the bidder claims a mistake was made in the bid presented, the Bidder shall give the City of Vallejo written notice within 5 days after the opening of the bids of the alleged mistake, specifying in the notice in detail how the mistake occurred.

2-1.10 DISQUALIFICATION OF BIDDERS

More than one proposal from an individual, firm, partnership, corporation, or combination thereof under the same or different names will not be considered. Reasonable grounds for believing that any individual, firm, partnership, corporation or combination thereof is interested in more than one proposal for the work contemplated may cause the rejection of all proposals in which that individual, firm, partnership, corporation or combination thereof is interested. If there is reason for believing that collusion exists among the Bidders any or all proposals may be rejected. Proposals in which the prices appear unbalanced may be rejected.

2-1.105 (BLANK)

2-1.108 (BLANK)

2-1.11 (BLANK)

2-1.12 (BLANK)

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SECTION 3: AWARD AND EXECUTION OF CONTRACT

3-1.01 AWARD OF CONTRACT

The right is reserved to reject any and all proposals.

The award of the Contract, if it be awarded, will be to the lowest responsible bidder whose proposal complies with all the requirements prescribed. The award, if made, will be made within 60 days after the opening of the proposals. This period will be subject to extension for such further period as may be agreed upon in writing between the City of Vallejo and the bidder concerned.

All bids will be compared on the basis of the Water Distribution Superintendent's Estimate of the quantities of work to be done.

The low bid will be determined by adding the sum of the base bid and all alternates (if any). The City of Vallejo reserves the right to include in the Contract, if a Contract is awarded, the base bid only, or the base bid plus any alternate bid or combinations of alternates bid.

3-1.02 BONDS

Within ten (10) days of Contractor's receipt of Contract from City of Vallejo, the Contractor shall furnish corporate surety bonds to the benefit of the City of Vallejo, issued by a surety company acceptable to the City of Vallejo and authorized and admitted to do business in the State of California, as follows:

- A. Faithful Performance Bond -- In a sum not less than one hundred percent (100%) of the total contract price as set forth in the Contract to guarantee the Contractor's faithful performance of all covenants and stipulations of the Contract. The bond shall contain a provision that the surety thereon waives the provisions of Sections 2819 and 2845 of the Civil Code of the State of California.
- B. Payment (Labor and Materials) Bond -- In a sum not less than one hundred percent (100%) of the total contract price as set forth in the Contract to guarantee the payment of wage, and bills contracted for materials, supplies, or equipment used in the performance of the Contract. The bond shall be in accordance with the provisions of Sections 3225, 3226, and 3247 to 3252, inclusive, of the Civil Code of the State of California, and Section 13020 of the Unemployment Insurance Code of the State of California. Said bond shall also contain a provision that the surety thereon waives the provisions of Sections 2819 and 2845 of the Civil Code of the State of California.

Faithful Performance Bond and Payment Bond shall be on the forms provided by City of Vallejo.

The surety companies shall familiarize themselves with all provisions and conditions of

the Contract. It is understood and agreed that the surety or sureties waive the right of special notification of any modifications or alterations, omissions or reductions, extra or additional work, extensions of time, or any other act or acts by the City of Vallejo or its authorized agents under the terms of the Contract; and failure to so notify the surety companies of such changes shall in no way relieve the surety or sureties of their obligations under this Contract. The surety expressly waives the provisions of Sections 2819 and 2845 of the Civil Code of the State of California.

3-1.03 EXECUTION OF CONTRACT

The Contract shall be signed by the successful bidder and returned, together with the Contract bonds, within 10 days after the bidder has received the Contract for execution.

3-1.04 FAILURE TO EXECUTE CONTRACT

The Contractor shall pay to the City of Vallejo such sums from said cash, bond, certified check, or cashier's check as necessary to reimburse the City of Vallejo for costs incurred for failure of the successful bidder to complete, sign and return in strict compliance with these Contract Documents, if requested to do so, Contractor's Qualification Questionnaire, or enter into a Contract. The amount of said cash, bond, certified check, or cashier's check shall not be deemed to constitute a penalty or liquidated damages. The City of Vallejo shall not be precluded by such cash, bond, certified check, or cashier's check from recovering from the defaulting bidder damages in excess of the amount of said cash, bond, certified check, or cashier's check incurred as a result of the failure of the successful bidder to complete, sign and return in strict compliance with these Contract Documents, if requested to do so, Contractor's Qualification Questionnaire, or enter into a Contract.

3-1.05 RETURN OF PROPOSAL GUARANTIES

The proposal guaranties accompanying the proposals of the first, second and third lowest bidders will be retained until the Contract has been finally executed, after which those proposal guaranties, may be returned to the respective bidders whose proposals they accompany. The proposal guaranties, other than bidder's bonds, submitted by all other unsuccessful bidders will be returned upon determination, by the City of Vallejo, of the first, second and third lowest responsible Bidders.

SECTION 4: SCOPE OF WORK

4-1.01 INTENT OF PLANS AND SPECIFICATIONS

All work and materials shall be in full accordance with the latest adopted standards and regulations of the State Fire Marshal; the California Building Code; Title 24 of the California Code of Regulations; the California Electrical Code; the California Plumbing Code; Americans with Disabilities Act; and all other applicable codes, laws, rules or regulations. Nothing in these Contract Documents is to be construed to permit work not conforming to these requirements. Contractor agrees that immediately upon signing of the Contract, Contractor will diligently review the Contract Documents and determine if any work described or inferred within the Contract Documents is not in conformance with these requirements. Should Contractor discover work within the Contract Documents not in conformance with these requirements, Contractor agrees to immediately notify Water Distribution Superintendent in writing of said nonconformance, and to not proceed with nonconforming work. When the work detailed in the Contract Documents differs from governing codes, it is understood and agreed that the Contract sum is based upon the more costly or expensive standard.

The intent of the plans and Specifications is to prescribe the details for the construction and completion of the work which the Contractor undertakes to perform in accordance with the terms of the Contract, and that the work performed under the Contract results in a complete operating system in satisfactory working condition with respect to the functional purposes of the installation, and no extra compensation will be allowed for anything omitted but fairly implied. The prices paid for the various items in the proposal shall include full compensation for furnishing all labor, materials, tools, equipment, overhead, profit, incidentals, and doing all work necessary to complete the finished product as provided in the Contract Documents. Where the plans or Specifications describe portions of the work in general terms, but not in complete detail, it is understood that only the best general practice is to prevail and that only materials and workmanship of the first quality are to be used. The Contractor shall furnish all labor, materials, tools, equipment, and incidentals, and do all the work involved in executing the Contract to the highest possible standard of workmanship.

Should it appear that the work to be done, or any of the matters relative thereto, are not sufficiently detailed or explained in the Contract Documents, or in the event of any doubt or question arising respecting the true meaning of the Contract Documents, the Contractor shall apply to the Water Distribution Superintendent in writing for such further explanations as may be necessary, and the Water Distribution Superintendent shall render his or her decisions thereon. The Contractor shall thoroughly review all Requests for Information (RFI's) submitted by subcontractors prior to submission to the Water Distribution Superintendent to determine whether such RFI's is already answered in the Contract Documents. Contractor represents to City of Vallejo, that by submission of an RFI, Contractor has thoroughly reviewed the RFI and thoroughly reviewed the Contract Documents, and determined that the RFI is not answered or reasonably inferable in the Contract Documents, and that the RFI pertains to an unforeseen condition or circumstance that is not described in the Contract Documents, that there is a conflict or

discrepancy in the Contract Documents, or there is an omission in the Contract Documents. In the event any RFI is answered or reasonably inferable from the Contract Documents, Contractor agrees to pay the City of Vallejo the reasonable cost, time and expenses associated with reviewing and responding to RFI's which are already answered or reasonably inferable from the Contract Documents. In the event of a disagreement over such compensation, the judgment of the Water Distribution Superintendent shall be final.

4-1.02 FINAL CLEANING UP

Before final inspection of the work, the Contractor shall clean the project site, material sites and all ground occupied by the Contractor in connection with the work of all rubbish, excess materials, falsework, temporary structures and equipment. All parts of the work shall be left in a neat and presentable condition. Full compensation for final cleaning up will be considered as included in the prices paid for the various Contract items of work and no separate payment will be made therefore.

4 -1.03 CHANGES

The City reserves the right without changing the scope of work, to make such alterations deviations, additions to or deletions from the plans and Specifications, including but not limited to, the right to add or delete any portion of the work to be done with no additional compensation or change in lump sum or unit bid prices. The City also reserves the right without changing the scope of work, to increase or decrease the quantity of any item or portion of the work, as may be deemed by the Water Distribution Superintendent to be necessary or advisable and to require such extra work as may be determined by the Water Distribution Superintendent to be required for the proper completion or construction of the whole work contemplated. Such increases or decreases in quantities shall not be a basis for change in character of the work.

The City of Vallejo may request that Contractor provide City of Vallejo with estimated costs for proposed changes to the work. Contractor agrees to promptly provide City of Vallejo with detailed, itemized costs for proposed changes to the work and scheduling data demonstrating the impact, if any, of the proposed changes to the work and the time for completion. Adjustments, if any, in the amount to be paid the Contractor by reason of any modifications of the work as set forth in a Contract change order, Construction Change Directive, or arising from claims shall be determined by one or more of the following methods as elected by the City of Vallejo:

- A. Lump Sum Price - By an acceptable lump sum price fixed in agreement between the City of Vallejo and the Contractor.
- B. Unit Prices - By unit prices fixed by agreement between the City of Vallejo and the Contractor.
- C. Force Account - By directing the Contractor to proceed with the work and to keep and present in such form as the City of Vallejo may direct, a correct account of the cost of the change, together with all vouchers therefor. The Contractor will be paid

for labor, materials, equipment rental, etc. actually used on change order work performed under Force Account as per Section 9-1.03 of these specifications.

The amount of payment agreed upon or, in the absence of agreement, selected by the City of Vallejo shall be set forth in the change order or construction change directive.

Upon receipt of a Contract change order authorized by the Water Distribution Superintendent, the Contractor shall proceed with the ordered work. If ordered in writing by the Water Distribution Superintendent, the Contractor shall proceed with the work so ordered prior to actual receipt of an authorized Contract change order therefor. In those cases, the Water Distribution Superintendent will, as soon as practicable, issue a Contract change order for the ordered work and the provisions in Section 4-1.03A, "Procedure and Protest," shall be fully applicable to the subsequently issued Contract change order.

When the compensation for an item of work is subject to adjustment under the provisions of this Section 4-1.03, the Contractor shall, upon request, furnish the Water Distribution Superintendent with adequate detailed cost data for that item of work. If the Contractor requests an adjustment in compensation for an item of work, the cost data shall be submitted with the request.

4-1.03A PROCEDURE AND PROTEST

A Contract change order authorized by the Water Distribution Superintendent may be issued to the Contractor at any time. Should the Contractor disagree with any terms or conditions set forth in an authorized Contract change order not executed by the Contractor, the Contractor shall submit a written protest to the Water Distribution Superintendent within 15 days after the receipt of the Contract change order. The protest shall state the points of disagreement, and the Contract specification references, quantities and costs involved. If a written protest is not submitted, payment will be made as set forth in the Contract change order, and Contractor agrees that payment shall constitute full compensation for all work included therein or required thereby. Unprotested Contract change orders will be considered as executed Contract change orders.

Where the protest concerning an authorized Contract change order relates to compensation, the compensation payable for all work specified or required by that Contract change order to which the protest relates will be determined as provided in Section 4-1.03D. The Contractor shall keep full and complete records of the cost of that work and shall permit the Water Distribution Superintendent to have access thereto as may be necessary to assist in the determination of the compensation payable for that work.

Where the protest concerning an accepted Contract change order relates to the adjustment of Contract time for the completion of the work, the time to be allowed therefor will be determined as provided in Section 8-1.07, "Liquidated Damages."

Proposed Contract change orders may be presented to the Contractor for consideration prior to authorization by the Water Distribution Superintendent. If the Contractor signifies

acceptance of the terms and conditions of the proposed Contract change order by executing the document and if the Contract change order is accepted by the Water Distribution Superintendent and issued to the Contractor, payment in accordance with the provisions as to compensation therein set forth shall constitute full compensation for all work included therein or required thereby. An accepted Contract change order shall supersede a proposed, but unaccepted, Contract change order covering the same work.

The Water Distribution Superintendent may provide for an adjustment of compensation as to a Contract item of work included in a Contract change order determined as provided in Section 4-1.03D, if that item of work is eligible for an adjustment of compensation thereunder.

Change orders shall be in the form provided by City of Vallejo in the Contract Documents.

4-1.03B (NOT USED)

4-1.03C (NOT USED)

4-1.03D EXTRA WORK

New and unforeseen work will be classed as extra work when determined by the Water Distribution Superintendent that the work is not covered by any of the various items for which there is a bid price or by combinations of those items. In the event portions of this work are determined by the Water Distribution Superintendent to be covered by some of the various items for which there is a bid price or combinations of those items, the remaining portion of the work will be classed as extra work. Extra work also includes work specifically designated as extra work in the plans or Specifications.

The Contractor shall do the extra work and furnish all labor, material and equipment therefor upon receipt of an accepted Contract change order or other written order of the Water Distribution Superintendent, and in the absence of an accepted Contract change order or other written order of the Water Distribution Superintendent the Contractor shall not be entitled to payment for the extra work.

Payment for extra work required to be performed pursuant to the provisions in this Section 4-1.03D, in the absence of an executed Contract change order, will be made by force account as provided in Section 9-1.03; or as agreed to by the Contractor and the Water Distribution Superintendent.

4-1.04 DETOURS

The Contractor shall construct and remove detours and detour bridges for the use of public traffic as provided in the Contract Documents or as directed by the Water Distribution Superintendent. Payment for this work will be made as set forth in the Contract Documents or at the Contract prices for the items of work involved if the work being performed is covered by Contract items of work and no other method of payment therefor is provided in the special provisions, otherwise the work will be paid for as extra work as provided in Section 4-1.03D.

The cost of repairing damage to detours caused by public traffic will be paid for as extra work as provided in Section 4-1.03D.

When public traffic is routed through the work, provision for a passageway through construction operations will not be considered as detour construction or detour maintenance, and this work shall conform to and be paid for as provided in Section 7-1.08, "Public Convenience," unless otherwise specified in the Specifications..

Detours used exclusively by the Contractor for hauling materials and equipment shall be constructed and maintained by the Contractor at the Contractor's expense.

The failure or refusal of the Contractor to construct and maintain detours at the proper time shall be sufficient cause for closing down the work until the detours are in satisfactory condition for use by public traffic.

Where the Contractor's hauling is causing such damage to the detour that its maintenance in a condition satisfactory for public traffic is made difficult or costly, the Water Distribution Superintendent shall have authority to regulate the Contractor's hauling over the detour.

4-1.05 USE OF MATERIALS FOUND ON THE WORK

Unless designated as selected material as provided in these Specifications, the Contractor, with the acceptance of the Water Distribution Superintendent, may use in the proposed construction such stone, gravel, sand or other material suitable in the opinion of the Water Distribution Superintendent as may be found in excavation. The Contractor will be paid for the excavation of those materials at the Contract price for the excavation, but the Contractor shall replace at the Contractor's expense with other suitable material all of that portion of the material so removed and used which was contemplated for use in the work, except that the Contractor need not replace, at the Contractor's expense, any material obtained from structure excavation used as structure backfill. No charge for materials so used will be made against the Contractor. The Contractor shall not excavate or remove any material from within the highway location that is not within the excavation, as indicated by the slope and grade lines, without written authorization from the Water Distribution Superintendent.

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SECTION 5: CONTROL OF WORK

5-1.01 AUTHORITY OF WATER DISTRIBUTION SUPERINTENDENT

The Water Distribution Superintendent shall decide all questions which may arise as to the quality or acceptability of materials furnished and work performed and as to the manner of performance and rate of progress of the work; all questions which may arise as to the interpretation of the plans and Specifications; all questions as to the acceptable fulfillment of the Contract on the part of the Contractor; and all questions as to compensation. The Water Distribution Superintendent's decision shall be final, and the Water Distribution Superintendent shall have authority to enforce and make effective those decisions and orders which the Contractor fails to carry out promptly.

5-1.02 PLANS AND WORKING DRAWINGS

The Contract plans furnished consist of general drawings and show such details as are necessary to give a comprehensive idea of the construction contemplated. All authorized alterations affecting the requirements and information given on the Contract plans shall be in writing.

The Contract plans shall be supplemented by such working drawings prepared by the Contractor as are necessary to adequately control the work. No change shall be made by the Contractor in any working drawing after it has been accepted by the Water Distribution Superintendent.

Working drawings for any part of the permanent work shall include, but not be limited to stress sheets, anchor bolt layouts, shop details, erection plans, equipment lists and any other information specifically required elsewhere in the Specifications.

Working drawings for cribs, cofferdams, falsework, temporary support systems, haul bridges, centering and form work and for other temporary work and methods of construction the Contractor proposes to use, shall be submitted when required by the Contract Documents or ordered by the Water Distribution Superintendent. Working drawings shall be subject to City of Vallejo review insofar as the details affect the character of the finished work and for compliance with design requirements applicable to the construction when specified or called for, but details of design will be left to the Contractor who shall be responsible for the successful construction of the work.

Working drawings shall be reviewed by the Water Distribution Superintendent before any work involving the drawings is performed. It is expressly understood that review of the Contractor's working drawings shall not relieve the Contractor of any responsibility under the Contract for the successful completion of the work in conformity with the requirements of the plans and Specifications. Review of working drawings shall not operate to waive any of the requirements of the plans and Specifications or relieve the Contractor of any obligation thereunder, and defective work, materials and equipment may be rejected notwithstanding the review.

Full compensation for furnishing all working drawings shall be considered as included in the prices paid for the Contract items of work to which the drawings relate and no additional compensation will be allowed therefor.

5-1.02A TRENCH EXCAVATION SAFETY PLANS

Attention is directed to Section 7-1.01E, "Trench Safety." Excavation for any trench 1.5 m {5 feet} or more in depth shall not begin until the Contractor has prepared detailed plans for worker protection from the hazards of caving ground during the excavation of that trench. The detailed plan shall show the details of the design of shoring, bracing, sloping or other provisions to be made for worker protection during the excavation. No plan shall allow the use of shoring, sloping or a protective system less effective than that required by the Construction Safety Orders of the Division of Occupational Safety and Health. If the plan complies with the shoring system standards established by the Construction Safety Orders, the plan shall be submitted at least 5 days before the Contractor intends to begin excavation for the trench. If the plan varies from the shoring system standards established by the Construction Safety Orders, the plan shall be prepared and signed by an engineer who is registered as a Civil Engineer in the State of California, and the plan and design calculations shall be submitted at least 3 weeks before the Contractor intends to begin excavation for the trench.

5-1.03 CONFORMITY WITH CONTRACT DOCUMENTS AND ALLOWABLE DEVIATIONS

Contractor's work and materials shall strictly conform to the lines, grades, typical cross sections, dimensions and material requirements, including tolerances, required in the Contract Documents. Although measurement, sampling and testing may be considered evidence as to conformity, the Water Distribution Superintendent shall be the sole judge as to whether the work or materials deviate from the plans and Specifications, and the Water Distribution Superintendent's decision as to any allowable deviations therefrom shall be final.

5-1.04 COORDINATION AND INTERPRETATION OF PLANS, SPECIFICATIONS AND STANDARD SPECIFICATIONS

These project plans, Specifications, special provisions, Contract change orders and all supplementary documents are essential parts of the Contract, and a requirement occurring in one Contract Document is as binding as though occurring in all. They are intended to be complementary, and to describe and provide for a complete work.

In the event of a conflict between the project plans, Specifications or special provisions, and Standard Plans and Standard Specifications of the State of California, Business, Transportation and Housing Agency, Department of Transportation, 2010 edition, City of Vallejo Standard Specifications and Standard Plans, December 2011 edition, or Vallejo Sanitation & Flood Control District Master Bid Document, dated March 2007, the project plans, and Specifications shall control. Project plans shall govern over Standard Plans; Standard Plans and project plans shall govern over the Standard Specifications; and the special provisions shall govern over both the Standard Specifications and the project

plans. The specific shall control over the general.

Should it appear that the work to be done or any of the matters relative thereto are not sufficiently detailed or explained in the Contract Documents, the Contractor shall apply in writing to the Water Distribution Superintendent for such further explanations as may be necessary and shall conform to them as part of the Contract. In the event of any doubt or question arising respecting the true meaning of the Contract Documents, reference in writing shall be made to the Water Distribution Superintendent, whose decision thereon shall be final.

In the event of any discrepancy between any drawing and the figures written thereon, the figures shall be taken as correct. Detail drawings shall prevail over general drawings.

5-1.05A ORDER OF WORK

When required by the Contract Documents, the Contractor shall follow the sequence of operations as set forth therein.

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

5-1.05B HOURS OF WORK

Regular working hours are 8:00 a.m. to 4:30 p.m., Monday through Friday, excluding holidays observed by the City. No work outside of the regular working hours shall be done unless previously requested by the Contractor in writing and approved by the Water Distribution Superintendent in writing. Contractor is subject to reimbursing the City for the costs of providing inspection outside of regular working hours.

5-1.06 SUPERINTENDENCE

The Contractor shall designate in writing before starting work, an authorized representative who shall act as Superintendent and have the authority to represent and act for the Contractor. The Superintendent shall have responsibility for overall project operations and shall not be a "working foreman."

When the Contractor is comprised of 2 or more persons, firms, partnerships or corporations functioning on a joint venture basis, the Contractor shall designate in writing before starting work, the name of one authorized representative who shall serve as the Superintendent. And shall have the authority to represent and act for the Contractor.

The Superintendent shall be present at the site of the work at all times while work is actually in progress on the Contract. When work is not in progress and during periods when work is suspended, arrangements acceptable to the Water Distribution Superintendent shall be made for any emergency work which may be required.

Whenever the Contractor or the Contractor's Superintendent is not present on any particular part of the work where it may be desired to give direction, orders will be given by the Water Distribution Superintendent, which shall be received and obeyed by the foreman or other individual who may have charge of the particular work in reference to which the orders are given.

Any order given by the Water Distribution Superintendent, not otherwise required by the Specifications to be in writing, will on request of the Contractor, be given or confirmed by the Water Distribution Superintendent in writing.

5-1.07 LINES AND GRADES

Stakes or marks for horizontal and vertical control will be set by the Water Distribution Superintendent as the Water Distribution Superintendent determines to be necessary to establish the lines and grades required for the completion of the work specified in these Contract Documents.

When the Contractor requires the stakes or marks, the Contractor shall notify the Water Distribution Superintendent of the requirements in writing a reasonable length of time in advance of starting operations that require the stakes or marks. In no event, shall a notice of less than 2 working days be considered a reasonable length of time.

Stakes and marks set by the Water Distribution Superintendent shall be carefully preserved by the Contractor. In case the stakes and marks are destroyed or damaged, the Contractor will be charged for the cost of necessary replacement or restoration of stakes and marks. This charge will be deducted from any moneys due or to become due the Contractor.

5-1.08 INSPECTION

The Water Distribution Superintendent shall, at all times, have safe access to the work during its construction, and shall be furnished with every reasonable facility for ascertaining that the materials and the workmanship are in accordance with the requirements and intentions of the Contract Documents. All work done and all materials furnished shall be subject to the Water Distribution Superintendent's inspection.

Neither the inspection by an inspector, City of Vallejo, Water Distribution Superintendent, nor any measurement, approved or unapproved modification, Submittals, shop drawing, order, or certificate, nor acceptance of any part or whole of the work, or payment of money, nor any possession or use by the City of Vallejo or its agents, shall operate as a waiver of any provisions of the Contract or of any power or authority reserved therein, or of any right to damages thereunder; nor shall the waiver of any breach of this Contract be held to be a waiver of any subsequent or other breach.

Projects financed in whole or in part with State or Federal funds shall be subject to inspection at all times by the State or Federal agency involved, or their authorized representative.

5-1.09 REMOVAL OF REJECTED AND UNAUTHORIZED WORK

All work which has been rejected shall be remedied, or removed and replaced by the Contractor in a manner acceptable to the Water Distribution Superintendent, and no compensation will be allowed to the Contractor for the removal, replacement or remedial work.

Any work done beyond the lines and grades shown on the plans or established by the Water Distribution Superintendent, or any extra work done without written authority will be considered as unauthorized work and will not be paid for. Upon order of the Water Distribution Superintendent unauthorized work shall be remedied, removed or replaced at the Contractor's expense.

Upon failure of the Contractor to comply promptly with any order of the Water Distribution Superintendent made under this Section 5-1.09, the City of Vallejo may cause rejected or unauthorized work to be remedied, removed or replaced, and to deduct the costs from any moneys due or to become due the Contractor.

5-1.10 EQUIPMENT AND PLANTS

Only equipment and plants suitable to produce the quality of work and materials required will be permitted to operate on the project.

Plants shall be designed and constructed in accordance with general practice for the equipment and shall be of sufficient capacity to ensure the production of sufficient material to carry the work to completion within the time limit.

The Contractor shall provide adequate and suitable equipment and plants to meet the above requirements, and when ordered by the Water Distribution Superintendent shall remove unsuitable equipment from the work and discontinue the operation of unsatisfactory plants.

The Contractor shall identify each piece of equipment, other than hand tools, by means of an identifying number plainly stenciled or stamped on the equipment at a conspicuous location, and shall furnish to the Water Distribution Superintendent a list giving the description of each piece of equipment and its identifying number. In addition, the make, model number and empty gross mass of each unit of compacting equipment shall be plainly stamped or stenciled in a conspicuous place on the unit. The gross mass shall be either the manufacturer's rated mass or the scale weight, expressed in metric units {United States Standard Measures}.

The make, model, serial number and manufacturer's rated capacity in metric units {United States Standard Measures} for each scale shall be clearly stamped or stenciled on the load receiving element and its indicator or indicators. All meters shall be similarly identified, rated and marked. Upon request of the Water Distribution Superintendent, the Contractor shall furnish a statement by the manufacturer, designating sectional and weighbridge capacities of portable vehicle scales.

5-1.11 ALTERNATIVE EQUIPMENT

While certain of the Contract Documents may provide that equipment of a particular size and type is to be used to perform portions of the work, it is to be understood that the development and use of new or improved equipment is to be encouraged.

The Contractor may request, in writing, permission from the Water Distribution Superintendent to use equipment of a different size or type in place of the equipment specified.

The Water Distribution Superintendent, before considering or granting the request, may require the Contractor to furnish, at the Contractor's expense, evidence satisfactory to the Water Distribution Superintendent that the equipment proposed for use by the Contractor is capable of producing work equal to, or better than, that which can be produced by the equipment specified.

If permission is granted by the Water Distribution Superintendent, it shall be understood that the permission is granted for the purpose of testing the quality of work actually produced by the equipment and is subject to continuous attainment of results which, in the opinion of the Water Distribution Superintendent, are equal to, or better than, that which can be obtained with the equipment specified. The Water Distribution Superintendent shall have the right to withdraw permission at any time that the Water Distribution Superintendent determines that the alternative equipment is not producing work that is equal, in all respects, to that which can be produced by the equipment specified. Upon withdrawal of permission by the Water Distribution Superintendent, the Contractor will be required to use the equipment originally specified and shall, in accordance with the directions of the Water Distribution Superintendent, remove and dispose of or otherwise remedy, at the Contractor's expense, any defective or unsatisfactory work produced with the alternative equipment.

The Contractor shall not have any claim against the City of Vallejo for either the withholding or the granting of permission to use alternative equipment, or for the withdrawal of the permission.

Permission to use alternative equipment in place of equipment specified will only be granted where the equipment is new or improved and its use is deemed by the Water Distribution Superintendent to be in furtherance of the purposes of this Section 5-1.11. The permission for use of particular equipment on any project shall in no way be considered as permission of the use of the equipment on any other project.

Nothing in this Section 5-1.11 shall relieve the Contractor of the responsibility for furnishing materials or producing finished work of the quality specified in the Contract Documents

5-1.12 ALTERNATIVE METHODS OF CONSTRUCTION

Whenever the plans or Specifications provide that more than one specified method of

construction or more than one specified type of material or construction equipment may be used to perform portions of the work and leave the selection of the method of construction or the type of material or equipment to be used up to the Contractor, it is understood that the City of Vallejo does not guarantee that every or any specified method of construction or type of material or equipment can be used successfully throughout all or any part of any project. It shall be the Contractor's responsibility to select and use the alternative or alternatives which will satisfactorily perform the work under the conditions encountered. In the event some of the alternatives are not feasible or it is necessary to use more than one of the alternatives on any project, full compensation for any additional cost involved shall be considered as included in the Contract price paid for the item of work involved and no additional compensation will be allowed therefor.

5-1.13 DIFFERING SITE CONDITIONS

During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the Contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract, are encountered at the site, the Contractor shall promptly notify the Water Distribution Superintendent in writing of the specific differing conditions before they are disturbed and before the affected work is performed.

Upon written notification, the Water Distribution Superintendent will investigate the conditions, and if the Water Distribution Superintendent determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an adjustment, excluding loss of anticipated profits, will be made and the Contract modified in writing accordingly. The Water Distribution Superintendent will notify the Contractor of the Water Distribution Superintendent's determination whether or not an adjustment of the Contract is warranted.

No Contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice. Contractor agrees that failure to provide written notice to Water Distribution Superintendent as required herein, or failure to otherwise abide by this Section, shall be a waiver by Contractor of any claim, demand, compensation or adjustment in the Contract time or working days.

No Contract adjustment will be allowed under the provisions specified in this section for any effects caused on unchanged work.

Any Contract adjustment warranted due to differing site conditions will be made in conformance with the provisions in Section 4-1.03, "Changes," except as otherwise provided.

5-1.14 CHARACTER OF WORKERS

If any subcontractor or person employed by the Contractor shall appear to the Water

Distribution Superintendent to be incompetent or to act in a disorderly or improper manner, they shall be discharged immediately on the request of the Water Distribution Superintendent, and that person shall not again be employed on the work.

5-1.15 FINAL INSPECTION

When the work has been completed, the Water Distribution Superintendent will make the final inspection.

5-1.16 MEANS AND METHODS

City of Vallejo will not have control over, be in charge of, nor be responsible for construction means, methods, techniques, sequences, or procedures, or for the safety precautions and programs in connection with the work, since these are solely Contractor's responsibility.

The City of Vallejo or adjacent property owner may perform other work adjacent to or within the project area, concurrent with the Contractor's operations. The Contractor shall cooperate fully with City of Vallejo in all operations which coincide with other work being performed, and provide City of Vallejo with such scheduling and other information as may be required by City of Vallejo to perform such other work. The Contractor shall conduct operations to minimize interference with the work of other forces or contractors performing such work. This work performed by a second contractor may include work which is incomplete or in dispute with the Contractor.

Any disputes or conflicts which may arise between the Contractor and any other forces or contractors retained by the City of Vallejo, causing delays or hindrance to each other, shall be referred to the Water Distribution Superintendent for resolution.

The City of Vallejo shall have the right at any time during the progress of this work to take over and place in service any completed or partially completed portion of the work, notwithstanding the time for completion of the entire work or such portions which may not have expired; but such taking possession thereof shall not be deemed an acceptance of any of the work, nor work on those portions not completed in accordance with the Contract Documents.

SECTION 6: CONTROL OF MATERIALS

6-1 GENERAL

6-1.01 SOURCE OF SUPPLY AND QUALITY OF MATERIALS

The Contractor shall furnish all materials required to complete the work, except materials that are designated in the Specifications to be furnished by the City of Vallejo and materials furnished by the City of Vallejo in conformance with the provisions in Section 9-1.03, "Force Account Payment."

Only materials conforming to the requirements of the Contract Documents shall be incorporated in the work.

The materials furnished and used shall be new, except as may be provided elsewhere in the Contract Documents. The materials shall be manufactured, handled and used in a workmanlike manner to ensure completed work in accordance with the plans and Specifications.

Materials to be used in the work will be subject to inspection and tests by the Water Distribution Superintendent or the Water Distribution Superintendent's designated representative. The Contractor shall furnish without charge such samples as may be required.

The Contractor shall furnish the Water Distribution Superintendent a list of the Contractor's sources of materials and the locations at which those materials will be available for inspection. The list shall be submitted on a form acceptable to the Water Distribution Superintendent and shall be furnished to the Water Distribution Superintendent in sufficient time to permit inspecting and testing of materials to be furnished to the listed sources in advance of their use. The Water Distribution Superintendent may inspect, sample or test materials at the source of supply or other locations, but the inspection, sampling or testing will not be undertaken until the Water Distribution Superintendent is assured by the Contractor of the cooperation and assistance of both the Contractor and the supplier of the material. The Contractor shall assure that the Water Distribution Superintendent or the Water Distribution Superintendent's authorized representative has free access at all times to the material to be inspected, sampled or tested. It is understood that the inspections and tests if made at any point other than the point of incorporation in the work in no way shall be considered as a guaranty of acceptance of the material nor of continued acceptance of material presumed to be similar to that upon which inspections and tests have been made, and that inspection and testing performed by the City of Vallejo shall not relieve the Contractor or the Contractor's suppliers of responsibility for quality control.

Manufacturers' warranties, guaranties, instruction sheets and parts lists, which are furnished with certain articles or materials incorporated in the work, shall be delivered to the Water Distribution Superintendent before acceptance of the Contract.

Reports and records of inspections made and tests performed, when available at the site of the work, may be examined by the Contractor.

6-1.02 CITY FURNISHED MATERIALS

Materials which are listed as City of Vallejo-furnished materials in the special provisions will be available to the Contractor free of charge.

The Contractor shall submit a written request to the Water Distribution Superintendent for the delivery of City of Vallejo-furnished material at least 15 days in advance of the date of its intended use. The request shall state the quantity and the type of each material.

The City of Vallejo-furnished materials will be available to the Contractor free of charge will be designated in the special provisions. In those cases the materials shall be hauled to the site of the work by the Contractor at the Contractor's expense, including any necessary loading and unloading that may be involved. All costs of handling and placing City of Vallejo-furnished material shall be considered as included in the price paid for the Contract item involving the City of Vallejo-furnished material.

The Contractor shall be responsible for all City of Vallejo-furnished materials furnished to the Contractor, and shall pay all demurrage and storage charges. City of Vallejo-furnished materials lost or damaged from any cause whatsoever shall be replaced by the Contractor at the Contractor's expense. The Contractor shall be liable to the City of Vallejo for the cost of replacing City of Vallejo-furnished material, and those costs may be deducted from any moneys due or to become due the Contractor. All City of Vallejo-furnished material that is not used on the work shall remain the property of the City of Vallejo and shall be delivered to the Water Distribution Superintendent's designated location at no cost to the City.

6-1.03 STORAGE OF MATERIALS

Articles or materials to be incorporated in the work shall be stored in such a manner as to ensure the preservation of their quality and fitness for the work, and to facilitate inspection.

6-1.04 DEFECTIVE MATERIALS

All materials which the Water Distribution Superintendent has determined do not strictly conform to the requirements of the Contract Documents will be rejected whether in place or not. The rejected materials shall be removed immediately from the site of the work, unless otherwise permitted in writing by the Water Distribution Superintendent. No rejected material, the defects of which have been subsequently corrected, shall be used in the work, unless authorization in writing has been given by the Water Distribution Superintendent. Upon failure of the Contractor to comply promptly with any order of the Water Distribution Superintendent made under the provisions in this section, the Water Distribution Superintendent shall have authority to cause the removal and replacement of rejected material and to deduct the cost thereof from any moneys due or to become due the Contractor.

If nonconforming work, materials, or equipment not meeting the requirements and intent of the Contract Documents is discovered, and the Contractor fails to remedy the nonconforming work, materials, or equipment, or the City of Vallejo agrees in writing to accept the nonconforming work, materials, or equipment, Contractor agrees to sign a Contract Change Order or otherwise reimburse City of Vallejo in a sum equal to the cost to remedy the nonconforming work, materials, or equipment. It is expressly understood and agreed that the City of Vallejo will be entitled to recover from Contractor the full cost of remedying nonconforming work, materials, or equipment, and that diminution in value will not be considered as a method for valuing the City of Vallejo's damages for nonconforming work, materials, or equipment, and further that the doctrine of economic waste will not be a defense to the City of Vallejo's recovery from Contractor of the full and complete cost and expense of remedying nonconforming work, materials, or equipment.

Re-examination of any work may be ordered by the Water Distribution Superintendent, and such work must be uncovered by the Contractor. The Contractor shall pay the entire cost of such uncovering, re-examination, and replacement if the work does not conform to the Contract Documents.

6-1.05 TRADE NAMES AND ALTERNATIVES

For convenience in designation on the Contract Documents, certain articles or materials to be incorporated in the work may be designated under a trade name or the name of a manufacturer and the manufacturer's catalogue information. The use of an alternative article or material which is of equal or superior quality and of the required characteristics for the purpose intended will be permitted, subject to the following requirements:

The burden of proof as to the quality and suitability of alternatives shall be upon the Contractor, and the Contractor shall furnish all information necessary as required by the Water Distribution Superintendent. The Water Distribution Superintendent shall be the sole judge as to the quality and suitability of alternative articles or materials, and the Water Distribution Superintendent's decision shall be final.

Whenever the Contract Documents permit the substitution of a similar or equivalent material or article, no tests or action relating to the acceptance of the substitute material will be made until the request for substitution is made in writing by the Contractor accompanied by complete data as to the equality of the material or article proposed. Request for such substitution shall be made in writing by the Contractor within thirty (30) days of the Notice to Proceed. Failure by the Contractor to request substitution within thirty (30) days of the Notice to Proceed constitutes an agreement by Contractor to furnish only the materials or equipment listed in the Contract Documents. Until and unless such substitutions are authorized in writing by the Water Distribution Superintendent, no deviations from the specifications shall be allowed.

6-1.06 PLANT INSPECTION

The Water Distribution Superintendent may inspect the production of material or the manufacture of products at the source of supply.

Plant inspection, however, will not be undertaken until the Water Distribution Superintendent is assured of the cooperation and assistance of both the Contractor and the material producer. The Water Distribution Superintendent or the Water Distribution Superintendent's authorized representative shall have free entry at all times to those parts of the plant as concerns the manufacture or production of the materials. Adequate facilities shall be furnished free of charge to make the necessary inspection. The City of Vallejo assumes no obligation to inspect materials at the source of supply.

6-1.07 CERTIFICATES OF COMPLIANCE

A Certificate of Compliance shall be furnished prior to the use of any materials for which the Contract Documents require that a certificate be furnished. In addition, when so authorized in the Contract Documents, the Water Distribution Superintendent may permit the use of certain materials or assemblies prior to sampling and testing if accompanied by a Certificate of Compliance. The certificate shall be signed by the manufacturer of the material or the manufacturer of assembled materials and shall state that the materials involved comply in all respects with the requirements of the Contract Documents. A Certificate of Compliance shall be furnished with each lot of material delivered to the work and the lot so certified shall be clearly identified in the certificate.

Materials used on the basis of a Certificate of Compliance may be sampled and tested at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the Contractor of responsibility for incorporating material in the work which conforms to the requirements of the Contract Documents, and any material not conforming to the requirements will be subject to rejection whether in place or not.

The City of Vallejo reserves the right to refuse to permit the use of material on the basis of a Certificate of Compliance.

The form of the Certificate of Compliance and its disposition shall be as directed by the Water Distribution Superintendent.

6-1.08 FOREIGN MATERIALS

Materials which are manufactured, produced or fabricated outside of the United States shall be delivered to a distribution point in California, unless otherwise required in the Contract Documents, where they shall be retained for a sufficient period of time to permit inspection, sampling and testing.

Attention is directed to the provisions in Section 8-1.07, "Liquidated Damages." The Contractor shall not be entitled to an extension of time for acts or events occurring outside of the United States, and it shall be the Contractor's responsibility to deliver materials obtained from outside of the United States to the point of entry into the continental United States in sufficient time to permit timely delivery to the job site.

The Contractor, at no cost to the City of Vallejo, shall supply the facilities and arrange for any testing required in California which the City of Vallejo is not equipped to perform. All

testing by the Contractor shall be subject to witnessing by the Water Distribution Superintendent.

The manufacturer, producer or fabricator of foreign material shall furnish to the Water Distribution Superintendent a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance." In addition, certified mill test reports clearly identifiable to the lot of material shall be furnished where required in the Contract Documents or otherwise requested by the Water Distribution Superintendent.

If the welding of steel for structural steel members or the casting and prestressing of precast, prestressed concrete members is to be performed outside of the United States, the following requirements shall apply:

- A. The fabrication shall be performed only within the plants and by fabricators who have previously established, to the satisfaction of the Water Distribution Superintendent, that they have the experience, knowledge, trained manpower, quality controls, equipment and other facilities required to produce the quality and quantity of work required. At the option of the Water Distribution Superintendent, prequalification of the plant and fabricator will be established either by the submission of detailed written proof thereof or through in-plant inspection by the Water Distribution Superintendent or the Water Distribution Superintendent's representative, or both.
- B. The Contractor shall make written application to the Water Distribution Superintendent for acceptance for the foreign fabrication at the earliest possible time and in no case later than 50 days in advance of the planned start of fabrication. The application shall list the specific units or portion of a work which will be fabricated outside of the United States.
- C. The Contractor shall advise the Water Distribution Superintendent, in writing, at least 20 days in advance of the actual start of any of the foreign fabrication.
- D. All documents pertaining to the Contract, including but not limited to, correspondence, bid documents, working drawings and data shall be written in the English language and all numerical data shall use the International System of Units (SI) {United States Standard Measures} for measurement.

The use of steel manufactured outside of the United States as unidentified stock material, as provided in Section 55-2.07, "Unidentified Stock Material," will not be allowed.

6-1.09 STATE SPECIFICATION NUMBERS

The State Specification number of material furnished on the Contract shall conform to the number specified in these Specifications or the special provisions for the material involved, except that material conforming to a later specification issue will be acceptable.

6-2 LOCAL MATERIALS

6-2.01 GENERAL

Local material is rock, sand, gravel, earth or other mineral material, other than local borrow or selected material, obtained or produced from sources in the vicinity of the work specifically for use on the project. Local material does not include materials obtained from established commercial sources.

Local materials shall be furnished by the Contractor from any source the Contractor may elect, except that when mandatory local material sources of certain materials are designated in the Contract Documents, the Contractor shall furnish material from those designated mandatory sources.

The Contractor shall be responsible for making all arrangements necessary to obtain materials from any local material source other than a mandatory local material source. If the Contractor elects to obtain materials from a possible local material source, subject to the provisions in Section 6-2.02, "Possible Local Material Sources," the Contractor shall comply with the requirements of that section. If the Contractor elects to obtain material from any other non-mandatory source, the Contractor shall furnish the Water Distribution Superintendent with satisfactory evidence that the Contractor has entered into an agreement with the property owner for obtaining material from that source and with copies of any necessary permits, licenses and environmental clearances before removing any material from those sources.

The furnishing of local materials from any source is subject to the provisions in Section 2-1.03, "Examination of Plans, Specifications, Contract, and Site of Work," and in Section 6-2, "Local Materials."

Unless described in the Contract Documents as a mandatory local material source, or authorized in writing by the Water Distribution Superintendent, material sources shall not be excavated at locations where the resulting scars will present an unsightly appearance from any highway. No payment will be made for material obtained in violation of this provision.

The Contractor shall, at the Contractor's expense, make any arrangements necessary for hauling over local public and private roads from any source.

When requested by the Contractor in writing, the City of Vallejo will test materials from any local material source, which has not been previously tested, at Contractor's cost and expense.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in conforming to the provisions in this Section 6-2.01, for furnishing and producing materials from any source shall be considered as included in the price paid for the Contract item of work involving the material and no additional compensation will be allowed therefor.

6-2.02 POSSIBLE LOCAL MATERIAL SOURCES

Where the City of Vallejo has made arrangements with owners of land in the vicinity of a project for the obtaining of material from an owner's property, the arrangements are made solely for the purpose of providing all Bidders an equal opportunity to obtain material from that property. Bidders or Contractors may, upon written request, inspect the documents evidencing those arrangements between property owners and the City of Vallejo. The Contractor may, if the Contractor so elects, exercise any rights that have been obtained, which may be exercised by a Contractor under the arrangements, subject to and upon the conditions hereinafter set forth.

Arrangements made by the City of Vallejo are not a part of the Contract, and it is expressly understood and agreed that the City of Vallejo assumes no responsibility to the Bidder or Contractor whatsoever in respect to the arrangements made with the property owner to obtain materials therefrom and that the Contractor shall assume all risks in connection with the use of the property, the terms upon which the use shall be made, and there is no warranty or guaranty, either express or implied, as to the quality or quantity of materials that can be obtained or produced from the property or the type or extent of processing that may be required in order to produce material conforming to the requirements of the Contract Documents.

In those instances in which the City of Vallejo has compiled "Materials Information" as referred to in Section 2-1.03, "Examination of Plans, Specifications, Contract, and Site of Work," the compilation may include the documents setting forth the arrangement made with some of the property owners for the obtaining of material from those owners' properties. The inclusion of these documents therein shall not in any respect operate as a waiver of any of the provisions in this Section 6-2.02 concerning the documents.

All necessary permits, licenses and environmental clearances needed to enable the Contractor to use a possible local material source for which the "Materials Information" compilation for the project does not include permits, licenses and environmental clearances issued to the City of Vallejo (whether or not the arrangement made by the City of Vallejo with the owner of the property is included in the compilation) shall be obtained by the Contractor, and copies thereof shall be furnished the Water Distribution Superintendent before any material is removed from the source.

The Bidder and Contractor shall make such independent investigation and examination as the Contractor deems necessary to be satisfied as to the quality and quantity of materials available from the property, the type and extent of processing that may be required in order to produce material conforming to the requirements of the Contract Documents and the rights, duties and obligations acquired or undertaken under the arrangement with the property owner.

Notwithstanding that the Contractor may elect to obtain materials from any such property owner's property, no material may be obtained from the property unless the Contractor has first either:

- A. Executed a document that will guarantee to hold the owner harmless from all claims for injury to persons or damage to property resulting from the Contractor's operations on the property owner's premises and also agree to conform to all other provisions set forth in the arrangement made between the City of Vallejo and the property owner, or
- B. Entered into an agreement with the owner of the material source on any terms mutually agreeable to the owner and the Contractor, provided that the Contractor shall furnish to the Water Distribution Superintendent a release, in a form satisfactory to the Water Distribution Superintendent, executed by the owner, relieving the City of Vallejo of any and all obligations under the City of Vallejo's arrangement with the owner.

If the Contractor elects to obtain material under (1), the use of the site shall be subject to the terms, conditions and limitations of the arrangement made between the property owner and the City of Vallejo, and the Contractor shall pay the charges as are provided for in the arrangement made by the City of Vallejo with the property owner. Deductions will be made from any moneys due or that may become due the Contractor under the Contract sufficient to cover the charges for the material removed.

If the Contractor elects to obtain material under (2), the Contractor shall pay the charges as are provided for in the agreement between the owner and the Contractor, and deductions will not be made from any moneys due or that may become due the Contractor under the Contract to cover the charges.

Before acceptance of the Contract, the Water Distribution Superintendent may require the Contractor to submit written evidence that the owner of the material source is satisfied that the Contractor has satisfactorily complied with the provisions of either— (1), the arrangement between the City of Vallejo and the owner, or (2), the agreement between the owner and the Contractor, as the case may be.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing and producing specified materials from possible local material sources, including the construction of any access roads or fences and any clearing, grubbing and stripping of material sources, and all processing of whatever nature and extent required, shall be considered as included in the price paid for the Contract item of work involving the material and no additional compensation will be allowed therefor.

6-2.03 MANDATORY LOCAL MATERIAL SOURCES

The Contractor shall perform all work required to obtain and produce acceptable materials from the mandatory local material sources designated in the Contract Documents and shall have no right to obtain the materials from any other source or sources. As part of the work in producing acceptable materials from the mandatory sources, it will be necessary for the Contractor to perform certain processing of the material as set forth in the Contract Documents. Any processing of the material required in addition to that specified in the Contract Documents which, in the opinion of the Water Distribution

Superintendent, is necessary to produce acceptable material from the mandatory sources will be paid for as extra work as provided in Section 4-1.03D.

If the Water Distribution Superintendent determines that the designated mandatory local material source or sources are no longer to be used because they are exhausted or for other reasons, the Water Distribution Superintendent will designate an alternative mandatory local material source or sources from which the Contractor shall obtain the balance of the material required.

In this case the City of Vallejo will pay the Contractor for the cost of moving the Contractor's plant to the new mandatory source and erecting the plant as extra work as provided in Section 4-1.03D. Construction of access roads, fences, clearing and grubbing or stripping of the new mandatory source, ordered by the Water Distribution Superintendent to be performed, will be paid for as extra work as provided in Section 4-1.03D. The City of Vallejo will also allow or deduct, as the case may be, the increase or decrease in haul cost due to an increase or decrease in the length of haul involved. Increased haul costs will be paid for as extra work as provided in Section 4-1.03D, and deductions for decreased haul will be determined in the same manner. No allowance or additional compensation will be made for lost time or for delay in completing the work due to moving the Contractor's plant from the designated mandatory source to the alternative mandatory source, other than an extension of time pursuant to the provisions in Section 8-1.07, "Liquidated Damages." Any processing of the material required in addition to that specified in the special provisions for the originally designated mandatory source which, in the opinion of the Water Distribution Superintendent, is necessary to produce acceptable material from the alternative mandatory source will be paid for as extra work as provided in Section 4-1.03D. The Contractor will be charged the same royalty as provided in the special provisions for the original designated mandatory local material source.

The Contractor shall, prior to entering a mandatory local material source or an alternative mandatory local material source, execute a document that will guarantee to hold the owner of the property harmless from all claims for injury to persons or damage to property resulting from the Contractor's operations on the property owner's premises. The document will be prepared by the Water Distribution Superintendent for execution by the Contractor.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in obtaining and producing specified materials from mandatory sources, including the construction of any access roads or fences and any clearing, grubbing and stripping of mandatory local material sources, except as otherwise provided for in this Section 6-2.03, shall be considered as included in the price paid for the Contract item of work involving the material and no additional compensation will be allowed therefor.

6-3 TESTING

6-3.01 GENERAL

All materials incorporated in the project shall meet the requirements of tests specified in the Standard Specifications and other minimum requirements specified herein or in the Contract documents.

The Contractor shall furnish written laboratory reports from a reputable testing or inspection agency, or written certification from the manufacturer as to compliance with the Specifications as to the composition, durability and performance of the all materials used in the project. Certain specification sections may require special items or materials to be included in the submittal. Reference is made to the technical specifications Section D for specific instructions.

These reports on any material must be submitted to the Water Distribution Superintendent in writing and approved by the Water Distribution Superintendent before incorporating that material in the work. All materials shall be adequately identified by tags or other means as that material which has been tested and approved. Lack of proper identification shall be considered adequate cause for rejection of any material, which cannot be properly inspected on the job.

The City reserves the right to make such additional inspections or tests as it may require prior to acceptance of any materials, and also reserves the right to reject any material previously approved because of serious defects or damage discovered subsequent to such acceptance. Any material rejected by the City shall immediately be removed from the job site, and no payment will be allowed therefor.

The Contractor shall bear the expense for all unsatisfactory tests and deductions will be made from any moneys due or to become due the Contractor, sufficient to cover the cost of the tests.

Unless otherwise specified, all tests shall be performed in accordance with the methods used by the City of Vallejo Water Department and shall be made by the Water Distribution Superintendent or the Water Distribution Superintendent's designated representative.

The State of California has developed methods for testing the quality of materials and work. These methods are identified by number and are referred to in the Specifications as California Test. Copies of individual California Tests are available at the Transportation Laboratory, Sacramento, California, and will be furnished to interested persons upon request.

Whenever the Specifications require compliance with specified values for the following properties, tests will be made by the California Test indicated unless otherwise specified:

Properties	California Test
Relative Compaction	216 or 231
Sand Equivalent	217
Resistance (R-value)	301
Grading (Sieve Analysis)	202
Durability Index	229

Whenever a reference is made in the Specifications to a California Test by number, it shall mean the California Test in effect on the day the Notice to Contractors for the work is dated.

Whenever the Specifications provide an option between 2 or more tests, the Water Distribution Superintendent will determine the test to be used.

Whenever a reference is made in the Specifications to a specification, manual or test designation either of the American Society for Testing and Materials, the American Association of State Highway and Transportation Officials, Federal Specifications or any other recognized national organization, and the number or other identification representing the year of adoption or latest revision is omitted, it shall mean the specification, manual or test designation in effect on the day the Notice to Contractors for the work is dated. Whenever the specification, manual or test designation provides for test reports (such as certified mill test reports) from the manufacturer, copies of those reports, identified as to the lot of material, shall be furnished to the Water Distribution Superintendent. The manufacturer's test reports shall supplement the inspection, sampling and testing provisions in Section 6, "Control of Materials," and shall not constitute a waiver of the City of Vallejo's right to inspect. When material which cannot be identified with specific test reports is proposed for use, the Water Distribution Superintendent may, at the Water Distribution Superintendent's discretion, select random samples from the lot for testing. Test specimens from the random samples, including those required for retest, shall be prepared in accordance with the referenced specification and furnished by the Contractor at the Contractor's expense. The number of the samples and test specimens shall be entirely at the discretion of the Water Distribution Superintendent. Unidentified metal products, such as sheet, plate and hardware shall be subject to the requirements of Section 55-2.07, "Unidentified Stock Material."

When requested by the Water Distribution Superintendent, the Contractor shall furnish, without charge, samples of all materials entering into the work, and no material shall be used prior to acceptance by the Water Distribution Superintendent, except as provided in Section 6-1.07, "Certificates of Compliance." Samples of material from local sources shall be taken by or in the presence of the Water Distribution Superintendent; otherwise, the samples will not be considered for testing.

6-3.02 TESTING BY CONTRACTOR

The Contractor shall be responsible for controlling the quality of the material entering the work and of the work performed, and shall perform testing as necessary to ensure control. The test methods used for quality control testing shall be as determined by the Contractor. The results of the testing shall be made available to the Water Distribution Superintendent upon request. These tests are for the Contractor's use in controlling the work and will not be accepted for use as acceptance tests.

Full compensation for performing quality control tests and making the results available to the Water Distribution Superintendent shall be considered as included in the Contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

SECTION 7: LEGAL RELATIONS AND RESPONSIBILITY

7-1.01 LAWS TO BE OBSERVED

The Contractor shall keep fully informed of all existing and future laws, ordinances and regulations which in any manner affect those engaged or employed in the work, or the materials used in the work, or which in any way affect the conduct of the work, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. The Contractor shall at all times observe and comply with, and shall cause all the Contractor's agents and employees to observe and comply with all existing and future laws, ordinances, regulations, orders and decrees of bodies or tribunals having any jurisdiction or authority over the work; and shall protect and indemnify the City of Vallejo, and all officers and employees thereof connected with the work, including but not limited to the Director and the Water Distribution Superintendent, against any claim or liability arising from or based on the violation of any law, ordinance, regulation, order or decree, whether by the Contractor or the Contractor's employees. If any discrepancy or inconsistency is discovered in the Contract Documents for the work in relation to any law, ordinance, regulation, order or decree, each Bidder and the Contractor shall forthwith report the same to the Water Distribution Superintendent in writing.

7-1.01A LABOR CODE REQUIREMENTS

Attention is directed to the following requirements of the Labor Code:

7-1.01A(1) HOURS OF LABOR

Eight hours labor constitutes a legal day's work. The Contractor or any subcontractor under the Contractor shall forfeit, as a penalty to the State of California, \$25 for each worker employed in the execution of the Contract by the respective Contractor or subcontractor for each calendar day during which that worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week in violation of the requirements of the Labor Code, and in particular, Section 1810 to Section 1815, thereof, inclusive, except that work performed by employees of Contractors in excess of 8 hours per day, and 40 hours during any one week, shall be permitted upon compensation for all hours worked in excess of 8 hours per day at not less than one and one-half times the basic rate of pay, as provided in Section 1815 thereof.

7-1.01A(2) PREVAILING WAGE

The Contractor and any subcontractor under the Contractor shall comply with Labor Code Sections 1774 and 1775. Pursuant to Section 1775, the Contractor and any subcontractor under the Contractor shall forfeit to the City of Vallejo or political subdivision on whose behalf the Contract is made or awarded a penalty of not more than fifty dollars (\$50) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the Director of Industrial Relations for the work or craft in which the worker is employed for any public work done under the Contract by the Contractor or by any subcontractor under the Contractor in violation of the requirements

of the Labor Code and in particular, Labor Code Sections 1770 to 1780, inclusive. The amount of this forfeiture shall be determined by the Labor Commissioner and shall be based on consideration of the mistake, inadvertence, or neglect of the Contractor or subcontractor in failing to pay the correct rate of prevailing wages, or the previous record of the Contractor or subcontractor in meeting their respective prevailing wage obligations, or the willful failure by the Contractor or subcontractor to pay the correct rates of prevailing wages. A mistake, inadvertence, or neglect in failing to pay the correct rate of prevailing wages is not excusable if the Contractor or subcontractor had knowledge of the obligations under the Labor Code. In addition to the penalty and pursuant to Labor Code Section 1775, the difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by the Contractor or subcontractor. If a worker employed by a subcontractor on a public works project is not paid the general prevailing per diem wages by the subcontractor, the prime Contractor of the project is not liable for the penalties described above unless the prime Contractor had knowledge of that failure of the subcontractor to pay the specified prevailing rate of wages to those workers or unless the prime Contractor fails to comply with all of the following requirements:

- A. The Contract executed between the Contractor and the subcontractor for the performance of work on the public works project shall include a copy of the requirements in Sections 1771, 1775, 1776, 1777.5, 1813 and 1815 of the Labor Code.
- B. The Contractor shall monitor the payment of the specified general prevailing rate of per diem wages by the subcontractor to the employees, by periodic review of the certified payroll records of the subcontractor.
- C. Upon becoming aware of the subcontractor's failure to pay the specified prevailing rate of wages to the subcontractor's workers, the Contractor shall diligently take corrective action to halt or rectify the failure, including, but not limited to, retaining sufficient funds due the subcontractor for work performed on the public works project.
- D. Prior to making final payment to the subcontractor for work performed on the public works project, the Contractor shall obtain an affidavit signed under penalty of perjury from the subcontractor that the subcontractor has paid the specified general prevailing rate of per diem wages to the subcontractor's employees on the public works project and any amounts due pursuant to Section 1813 of the Labor Code.

Pursuant to Section 1775 of the Labor Code, the Division of Labor Standards Enforcement shall notify the Contractor on a public works project within 15 days of the receipt by the Division of Labor Standards Enforcement of a complaint of the failure of a subcontractor on that public works project to pay workers the general prevailing rate of per diem wages. If the Division of Labor Standards Enforcement determines that employees of a subcontractor were not paid the general prevailing rate of per diem wages and if the City of Vallejo did not retain sufficient money under the Contract to pay those

employees the balance of wages owed under the general prevailing rate of per diem wages, the Contractor shall withhold an amount of moneys due the subcontractor sufficient to pay those employees the general prevailing rate of per diem wages if requested by the Division of Labor Standards Enforcement. The Contractor shall pay any money retained from and owed to a subcontractor upon receipt of notification by the Division of Labor Standards Enforcement that the wage complaint has been resolved. If notice of the resolution of the wage complaint has not been received by the Contractor within 180 days of the filing of a valid notice of completion or acceptance of the public works project, whichever occurs later, the Contractor shall pay all moneys retained from the subcontractor to the City of Vallejo. These moneys shall be retained by the City of Vallejo pending the final decision of an enforcement action.

Pursuant to the requirements in Section 1773 of the Labor Code, the City of Vallejo has obtained the general prevailing rate of wages (which rate includes employer payments for health and welfare, pension, vacation, travel time and subsistence pay as provided for in Section 1773.8 of the Labor Code, apprenticeship or other training programs authorized by Section 3093 of the Labor Code, and similar purposes) applicable to the work to be done, for straight time, overtime, Saturday, Sunday and holiday work. The holiday wage rate listed shall be applicable to all holidays recognized in the collective bargaining agreement of the particular craft, classification or type of workmen concerned.

General prevailing wage rates are also available from the California State Department of Industrial Relations' Internet Web Site at:

<http://www.dir.ca.gov/OPRL/dprevagedetermination.htm>

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

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

Changes in general prevailing wage determinations which conform to Labor Code Section 1773.6 and Title 8 California Code of Regulations Section 16204 shall apply to the project when issued by the Director of Industrial Relations at least 10 days prior to the date of the Notice to Contractors for the project.

The City of Vallejo will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the prevailing wage rate set forth in the Contract. The possibility of wage increases is one of the elements to be considered by the Contractor in determining the bid, and will not under any circumstances be considered as the basis of a claim against the City of Vallejo on the Contract by

Contractor.

7-1.01A(2)(A) TRAVEL AND SUBSISTENCE PAYMENTS

Attention is directed to the requirements in Section 1773.8 of the Labor Code. The Contractor shall make travel and subsistence payments to each workman, needed to execute the work, in conformance with the requirements in Labor Code Section 1773.8.

Full compensation for conforming to the requirement of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed, therefore.

7-1.01A(3) PAYROLL RECORDS

Attention is directed to the requirements in Labor Code Section 1776, a portion of which is quoted below. Regulations implementing Labor Code Section 1776 are located in Sections 16016 through 16019 and Sections 16207.10 through 16207.19 of Title 8, California Code of Regulations.

- A. Each Contractor and subcontractor shall keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work. Each payroll record shall contain or be verified by a written declaration that it is made under penalty of perjury, stating both of the following:
 - 1. The information contained in the payroll record is true and correct.
 - 2. The employer has complied with the requirements of Sections 1771, 1811, and 1815 for any work performed by his or her employees on the public works project.

- B. The payroll records enumerated under subdivision (a) shall be certified and shall be available for inspection at all reasonable hours at the principal office of the Contractor on the following basis:
 - 1. A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.
 - 2. A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection or furnished upon request to a representative of the body awarding the Contract, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.

3. A certified copy of all payroll records enumerated in subdivision (a) shall be made available upon request by the public for inspection or for copies thereof. However, a request by the public shall be made through either the body awarding the Contract, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to paragraph (2), the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the Contractor, subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of the Contractor.
- C. The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the division.
 - D. A Contractor or subcontractor shall file a certified copy of the records enumerated in subdivision (a) with the entity that requested the records within 10 days after receipt of a written request.
 - E. Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the awarding body, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement shall be marked or obliterated in a manner so as to prevent disclosure of an individual's name, address and social security number. The name and address of the Contractor awarded the Contract or the subcontractor performing the Contract shall not be marked or obliterated.
 - F. The Contractor shall inform the body awarding the Contract of the location of the records enumerated under subdivision (a), including the street address, city and county, and shall, within five working days, provide a notice of a change of location and address.
 - G. The Contractor or subcontractor shall have 10 days in which to comply subsequent to receipt of a written notice requesting the records enumerated in subdivision (a). In the event that the Contractor or subcontractor fails to comply within the 10-day period, he or she shall, as a penalty to the state or political subdivision on whose behalf the Contract is made or awarded, forfeit twenty-five dollars (\$25) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. A Contractor is not subject to a penalty assessment pursuant to this section due to the failure of a subcontractor to comply with this section."

The penalties specified in subdivision (g) of Labor Code Section 1776 for noncompliance with the requirements in Section 1776 may be deducted from any moneys due or which may become due to the Contractor.

All contractors and subcontractors must furnish electronic certified payroll records directly to the Labor Commissioner (aka Division of Labor Standards Enforcement). Payrolls shall contain the full name, address and social security number of each employee, the employee's correct classification, rate of pay, daily and weekly number of hours worked, itemized deductions made and actual wages paid. They shall also indicate apprentices and ratio of apprentices to journeymen. The employee's address and social security number need only appear on the first payroll on which that name appears. The payroll shall be accompanied by a "Statement of Compliance" signed by the employer or the employer's agent indicating that the payrolls are correct and complete and that the wage rates contained therein are not less than those required by the Contract. The "Statement of Compliance" shall be on forms furnished by the City of Vallejo or on any form with identical wording. The Contractor shall be responsible for the submission of copies of payrolls of all subcontractors.

If by the 15th of the month, the Contractor has not submitted satisfactory payrolls for all work performed during the monthly period ending on or before the 1st of that month, the City of Vallejo may retain an amount equal to 10 percent of the estimated value of the work performed (exclusive of Mobilization) during the month from the next monthly estimate, except that this retention shall not exceed \$10,000 nor be less than \$1,000. Retentions for failure to submit satisfactory payrolls shall be additional to all other retentions provided for in the Contract. The retention for failure to submit payrolls for any monthly period will be released for payment on the monthly estimate for partial payments next following the date that all the satisfactory payrolls for which the retention was made are submitted.

The Contractor and each subcontractor shall preserve their payroll records for a period of 3 years from the date of completion of the Contract.

7-1.01A(4) LABOR NONDISCRIMINATION

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

"No discrimination shall be made in the employment of persons upon public works because of the race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status, or sex of such persons, except as provided in Section 12940 of the Government Code, and every Contractor for public works violating this section is subject to all the penalties imposed for a violation of this chapter."

Attention is directed to the following "Nondiscrimination Clause" that is required by Chapter 5 of Division 4 of Title 2, California Code of Regulations.

NONDISCRIMINATION CLAUSE

"During the performance of this Contract, Contractor and its SUBCONTRACTORS shall not unlawfully discriminate against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status, age (over 40) or sex. Contractors and

SUBCONTRACTORS shall ensure that the evaluation and treatment of their employees and applicants for employment are free of such discrimination. Contractors and SUBCONTRACTORS shall comply with the provisions of the Fair Employment and Housing Act (Gov. Code, Section 12990 et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285.0 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code, Section 12990, set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations are incorporated into this Contract by reference and made a part hereof as if set forth in full. Contractor and its SUBCONTRACTORS shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.”

The Contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under the Contract.

7-1.01A(5) APPRENTICES

Attention is directed to Sections 1777.5, 1777.6 and 1777.7 of the California Labor Code and Title 8, California Code of Regulations Section 200 et seq. To ensure compliance and complete understanding of the law regarding apprentices, and specifically the required ratio thereunder, each Contractor or subcontractor should, where some question exists, contact the Division of Apprenticeship Standards, 455 Golden Gate Avenue, San Francisco, CA 94102, or one of its branch offices prior to commencement of work on the public works Contract. Responsibility for compliance with this section lies with the Contractor.

It is City of Vallejo policy to encourage the employment and training of apprentices on public works Contracts as may be permitted under local apprenticeship standards.

- A. Only registered apprentices within a written agreement in an approved apprentice-training program providing no less than 2,000 hours of continuous employment and education are eligible for employment on public works (in compliance with Labor Section 3077).
- B. A contractor is no longer required to submit Form DAS-7, but must submit award information to the local applicable joint apprenticeship committee. The award information must include:
 - an estimate of the journeyman hours;
 - the number of apprentices to be employed; and
 - the approximate dates of apprentice employment.
- C. The minimum statutory 1:5 hourly ratio of work stipulates that no less than one hour of apprentice work for every five hours of journeyman labor on any day of

work. (Any journeyman work performed beyond 8 hours per day or 40 hours per week shall not be used to calculate the hourly ratio).

This section shall not apply to specialty contractors or general contractors whose contracts involve less than Thirty Thousand Dollars (\$30,000.00) or 20 working days.

The Division of Apprenticeship Standards may grant a certificate exempting the contractor from the minimum 1:5 hourly ratios under any one of the following:

Unemployment exceeds an average of 15% in the area for the previous 3-month period;

The number of apprentices in training in such area exceeds a ratio of 1:5;

The apprentice able craft or trade is replacing at least one-thirtieth of its journeymen annually through apprenticeship training, either locally or statewide;

The specific task would jeopardize the apprentice's life or public safety or no training can be provided to an apprentice by a journeyman for the specific task.

- D. Apprentices employed on public works projects can only be assigned to perform work of the craft or trade to which the apprentice is registered.
- E. All contractors with employees in any apprentice able occupation, regardless of the actual employment of journeymen or apprentices for the awarded public work, must either contribute to the local training trust fund or to the California Apprenticeship Council, P.O. Box 603, San Francisco, CA 94101 (as set forth in Section 227).
- F. All violations of Section 1777.5 shall pay a civil penalty of Fifty Dollars (\$50.00) for each calendar day of noncompliance.

All willful violations of Section 1777.5 shall pay the \$50.00 fine for each calendar day of noncompliance and shall be denied the right to bid on, or to receive, any public works contract for a period of up to one year for the first violation and up to three years for any additional violations.

Compliance disputes arising under Section 177.5 shall be adjudicated under 8 California Code of Regulations, Article 1.

- G. Within five (5) days of a public works contract award, the awarding agency must send a copy of the award to the Division of Apprenticeship Standards under Section 1773.3.

Within five (5) days of finding any discrepancy regarding the hourly ratio of apprentices to journeymen, the awarding agency shall notify the Division of Apprenticeship Standards.

H. The Contractor shall be responsible for compliance for all apprentice able occupations within these sections.

7-1.01A(6) WORKERS' COMPENSATION

Pursuant to the requirements in Section 1860 of the Labor Code, the Contractor will be required to secure the payment of workers' compensation to the Contractor's employees in conformance with the requirements in Section 3700 of the Labor Code.

Prior to the commencement of work, the Contractor shall sign and file with the Water Distribution Superintendent a certification in the following form:

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

This certification is incorporated in the Contract by reference, and signature and return of the Contract as provided in Section 3-1.03, "Execution of Contract," shall constitute signing and filing of the certificate.

7-1.01A(7) SUITS TO RECOVER PENALTIES AND FORFEITURES

Attention is directed to Sections 1730 to 1733, inclusive, of the Labor Code concerning suits to recover amounts withheld from payment for failure to comply with requirements of the Labor Code or Contract provisions based on those laws.

Those sections provide that a suit on the Contract for alleged breach thereof in not making the payment is the exclusive remedy of the Contractor or the Contractor's assignees with reference to amounts withheld for those penalties or forfeitures; and that the suit must be commenced and actual notice thereof received by the awarding authority prior to 90 days after completion of the Contract and the formal acceptance of the job.

7-1.01B FAIR LABOR STANDARDS ACT

The attention of Bidders is invited to the fact that the City of Vallejo has been advised by the Wage and Hour Division, U.S. Department of Labor, that Contractors engaged in highway construction work are required to meet the provisions of the Fair Labor Standards Act of 1938 and as amended (52 Stat. 1060).

7-1.01C CONTRACTOR'S LICENSING LAWS

Attention is directed to the provisions of Chapter 9 of Division 3 of the Business and Professions Code concerning the licensing of Contractors. Contractor shall be properly licensed at all times during the performance of the work and performance of the Contract.

All Bidders and Contractors shall be licensed in accordance with the laws of this State and any bidder or Contractor not so licensed is subject to the penalties imposed by those laws.

Attention is also directed to the requirements in Public Contract Code Section 10164. In all projects where Federal funds are involved, the Contractor shall be properly licensed at the time the Contract is awarded.

7-1.01D VEHICLE CODE

Pursuant to the authority contained in Vehicle Code Section 591, the City of Vallejo has determined that within those areas that are within the limits of the project and are open to public traffic, the Contractor shall comply with all the requirements set forth in Divisions 11, 12, 13, 14 and 15 of the Vehicle Code.

Attention is directed to the statement in Vehicle Code Section 591 that this section shall not relieve the Contractor or any person from the duty of exercising due care. The Contractor shall take all necessary precautions for safe operation of the Contractor's equipment and the protection of the public from injury and damage from the Contractor's equipment.

7-1.01E TRENCH SAFETY

Attention is directed to the requirements in Section 6705 of the Labor Code concerning trench excavation safety plans.

The Contractor is warned that when the work involves existing sewers and appurtenances that have been exposed to sewage and industrial wastes, these facilities shall be considered contaminated with disease-causing organisms. Personnel in contact with contaminated facilities, debris, waste water, or similar items shall be advised by the Contractor of the necessary precautions that must be taken to avoid becoming diseased. It is the Contractor's responsibility to urge his/her personnel to observe a strict regimen of proper hygienic precautions, including any inoculations recommended by the local public health officer.

Because of the potential danger of solvents, gasoline, and other hazardous material in the existing sewers and storm drain pipes, these areas shall be considered hazardous. The Contractor shall be aware of these dangers and shall comply with Article 108, "Confined Spaces," of the General Industrial Safety Orders contained in Title 8 of the California Administrative Code.

In the event that this Contract requires the excavation of any trench or trenches in excess of five feet in depth, Contractor shall prepare a detailed design plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trenches. Said detailed design plan and subsequent excavating operations shall fully comply with all local, state and federal regulations including, but not limited to, the Construction Safety Orders, Section 1539, Permits and Section 1540 et seq., Excavation.

7-1.01F AIR POLLUTION CONTROL

The Contractor shall comply with all air pollution control rules, regulations, ordinances and statutes which apply to any work performed pursuant to the Contract, including any air pollution control rules, regulations, ordinances and statutes, specified in Section 11017 of the Government Code.

Unless otherwise provided in the special provisions, material to be disposed of shall not be burned, either inside or outside the highway right of way.

7-1.01G WATER POLLUTION CONTROL

7-1.01G(1) GENERAL

The intent of these requirements is to enforce federal, state, and other local agency regulation prohibiting storm water pollution from construction sites. The storm drain system discharges directly to creeks and the San Francisco Bay without treatment. Therefore, pollutant discharge into the storm drain system is strictly prohibited. Here pollutant discharge means any substance, material, or waste, and discharges NOT permitted under the National Pollutant Discharge Elimination System (NPDES) regulated by the State of California Regional Water Quality Control Board (RWQCB) or the United States Environmental Protection Agency (EPA) other than uncontaminated stormwater.

The Contractor shall conform to all applicable local, state and Federal regulations and laws pertaining to water pollution control. As applicable, the Contractor shall obtain Water Pollution Control Permits and file all documents including, but not limited to, the State of California Construction General Permit, Stormwater Pollution Prevention Plan. The Contractor shall conduct and schedule operations and follow and implement Best Management Practices (BMPs) in such a manner as to prevent water pollution. The Contractor shall also conform to the following requirements:

- 1) Sediments shall not be discharged to a storm drain system or receiving waters. In this subsection, the term "storm drain system" shall include storm water conduits, storm drain inlets and other storm drain structures, street gutters and paved surfaces. In this subsection "receiving waters" shall include channels, watercourses, creeks, lakes, the Mare Island Strait, the Carquinez Strait, and the San Francisco Bay.
- 2) Sediments generated on the Work site shall be contained within the Work site using appropriate BMPs.
- 3) No construction-related materials, waste, spill or residue shall be discharged from the Work site to streets, drainage facilities, receiving waters or adjacent property by wind or runoff.
- 4) Non-storm water runoff from equipment, vehicle washing or any other activity shall

be contained within the Work site using appropriate BMPs.

- 5) Erosion shall be prevented. Erosion-susceptible slopes shall be covered, planted or otherwise protected in a way that prevents discharge from the Work site.

In this subsection, the term “storm drain system” shall include water conduits, storm drain inlets and other storm drain structures, street gutters and paved surfaces, channels, watercourses, creek, lakes, the estuary, and the San Francisco Bay.

The Water Distribution Superintendent will notify the Contractor of the acceptance or rejection of any submitted or revised water pollution control program.

The City of Vallejo will not be liable to the Contractor for failure to accept all or any portion of an originally submitted or revised water pollution control program, nor for any delays to the work due to the Contractor's failure to submit an acceptable water pollution control program.

Nothing in the terms of the Contract Documents nor in the provisions in this Section 7 1.01G Water Pollution Control shall relieve the Contractor of the responsibility for compliance with Sections 5650 and 12015 of the Fish and Game Code, or other applicable statutes relating to prevention or abatement of water pollution.

7-1.01G(2) BEST MANAGEMENT PRACTICES (BMP)

For the purpose of eliminating stormwater pollution, the Contractor shall implement effective control measures known as Best Management Practices (BMPs). BMPs include schedules of activities, prohibition of practices, general good housekeeping practices, operational practices, pollution prevention practices, maintenance procedures, and other management procedures to prevent pollutant discharge directly or indirectly into the storm drain system. BMPs also include the construction of some facilities that may be required to prevent, control, and abate stormwater pollution.

The Contractor shall implement and maintain such BMPs as are relevant to the work, and as are specifically required by the project plans or Specifications. The Contractor shall be responsible throughout the Contract duration for installing, constructing, inspecting, maintaining, removing and disposing of BMPs for wind erosion control, tracking control, erosion and sediment control, non-storm water control, and waste management and materials pollution control. Unless otherwise directed by the Water Distribution Superintendent, the Contractor shall be responsible for BMP implementation and maintenance throughout any temporary suspension of the Work. Guidance for appropriate implementation of BMPs can be found in the 7-1.01G(5) Reference Publications, below.

7-1.01G(3) STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

When so specified in the Specifications, or if so required by a jurisdictional regulatory agency, the Contractor shall prepare and submit a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall conform to the requirements specified in the Specifications

and those of the jurisdictional regulatory agency. The Notice of Intent will be filed by the City.

7-1.01G(4) DEWATERING

Dewatering shall be performed by the Contractor when specifically required by the project plans or Specifications, and as necessary for construction of the Work. Dewatering shall be performed in conformance with all applicable local, state and Federal laws and permits issued by jurisdictional regulatory agencies. Permits necessary for treatment and disposal of accumulated water shall be obtained by the Contractor or the Agency as specified in the Special Provisions. Accumulated water shall be treated prior to disposal if so specified in the Specifications or required by a permit. The contractor shall submit a working drawing and related supporting information detailing its proposed plan and methodology and treatment and disposal of accumulated water. To the maximum extent practical, the Contractor shall reuse non-toxic, de-silted water for other onsite needs, such as dust control and irrigation.

The plan shall identify the location, type and size of dewatering devices and related equipment, the size and type of materials composing the collection system, the size and type of equipment to be used to retain and, if required, treat accumulated water, and the proposed disposal locations. If the proposed disposal location is a sanitary sewer, the Contractor shall submit to the Water Distribution Superintendent written evidence of permission from the owner. If the proposed disposal location is a storm drain system or receiving body of water, the Contractor shall submit written evidence of permission from the owner of the storm drain system and, if not obtained by the City, original signed permits from jurisdictional regulatory agencies or written evidence that such permits are not required.

7-1.01G(5) REFERENCE PUBLICATIONS

Reference publications are as follows:

1. California State Water Resources Control Board (SWRCB) Construction General Permit Order 2009-009-DWQ adopted on September 2, 2009. Available at: the following website:
http://www.swrcb.ca.gov/board_decisions/adopted_orders/water_quality/2012/wq_o2012_0006_dwq.pdf
2. California Stormwater Quality Association (CASQA) Stormwater Best Management Practice Handbook. Available at: the following website:
www.casqa.org/resources/bmp-handbooks/construction
3. Erosion and Sediment Control Field Manual, San Francisco Regional Water Quality Control Board (SFRWQCB) Available from Friends of the San Francisco Estuary, 1515 Clay Street, Suite 1400, Oakland, CA 94612 (510) 622-2419 or (510) 622-2337. Available at: the following website:
www.abag.ca.gov/abag/overview/pub/erosion.html

4. Manual of Standards for Erosion and Sediment Control Measures. Association of Bay Area Governments (ABAG.) Available from ABAG, 101 8th Street, Oakland, CA 94607, (510) 464-7900. Available at: the following website:
www.abag.ca.gov/abag/overview/pub/erosion.html
5. CalTrans Stormwater Quality Handbooks. Available at: the following website:
www.dot.ca.gov/hq/construc/stormwater/CSBMPM_303_Final.pdf

7-1.01G(6) MATERIAL STORAGE

Storage and exposure of raw materials, by-products, finished products, and containers shall be controlled as described below:

1. All construction materials shall be stored at least ten feet away from inlets, catch basins, and curb returns. The Contractor shall not allow any material to enter the storm drain system. Measures shall be taken to maintain a neat and protected pile. At the end of each working day, the Contractor shall collect and dispose of all scrap, debris, and waste material excluding materials set aside for recycling and salvage. Materials set aside for recycling and salvage shall be delivered to the recycling station within five days.
2. Materials that can contaminate rainwater or be transported by storm water or other runoff to the storm drain system require special storage. During wet weather or when rain is forecast, the Contractor shall store such materials inside a building or cover them with a tarp or other waterproof material secured with weighted tires or sandbags to prevent contact with rain.
3. The Contractor is reminded that storage and disposal of all hazardous materials such as paints, thinners, solvents, and fuels; and all hazardous wastes such as waste oil, must meet all federal, state and local standards and requirements.

7-1.01G(7) PAVEMENT SAW CUTTING OPERATIONS

The Contractor shall prevent any saw cutting debris from entering the storm drain system. The Contractor shall preferably use dry cutting techniques and sweep up residue. If wet methods are used, the Contractor shall vacuum slurry as cutting proceeds or collect all wastewater by constructing a sandbag sediment barrier. The bermed area shall be of adequate size to collect all wastewater and solids. The Contractor shall allow collected water to evaporate, as approved by the Water Distribution Superintendent, if the wastewater volume is minimal and if maintaining the ponding area does not interfere with public use of the street area, create a safety hazard, or does not create standing water that remains longer than 72 hours. If the Water Distribution Superintendent approves, the Contractor may direct or pump saw cutting wastewater to a dirt area for infiltration. This dirt area shall be adequate to contain all the wastewater. After wastewater has infiltrated, all remaining saw cutting residue must be removed and disposed of properly.

With the approval of Vallejo Sanitation and Flood Control District (VSFCD) and the Water

Distribution Superintendent, de-silted water may be pumped to the sanitary sewer to assist in the evaporation or infiltration process. Remaining silt and debris from the ponding or bermed area shall be removed or vacuumed and disposed of properly. If a suitable dirt area is not available or discharge to the sanitary sewer is not feasible, with the Water Distribution Superintendent's approval the Contractor shall filter the saw-cutting wastewater through filtering materials and methods meeting ABAG Standards for Erosion and Sedimentation Control Measures (latest edition) before discharging this wastewater to the storm drain.

7-1.01G(8) PAVEMENT OPERATIONS

The Contractor shall prevent the discharge of pollutants from paving operations by using measures to prevent run-on and runoff pollution, properly disposing of wastes, and by implementing the following Best Management Practices:

- a. No paving during wet weather.
- b. Store materials as required by 7-1.01G(6) Material Storage,
- c. Cover inlets and manholes when applying asphalt, seal coat, tack coat, slurry seal, fog seal, etc.
- d. Place drip pans or absorbent materials under paving equipment when not in use. During wet weather store contaminated paving equipment indoors or cover with tarp or other waterproof covering.
- e. Sweep work site daily to prevent sand, gravel or excess asphalt from entering, or being transported by rain, into the storm drain system.
- f. Keep ample supplies of drip pans or absorbent materials on-site.
- g. If paving involves Portland cement concrete, refer to 7-1.01G(6) Material Storage.

7-1.01G(9) CONCRETE OPERATIONS

The Contractor shall prevent pollutant discharge from concrete operations by using measures to prevent run-on and runoff pollution, by properly disposing of wastes, and by implementing the following BMPs:

- a. Store all materials in waterproof containers or under cover away from drain inlets or drainage areas.
- b. Avoid mixing excess amounts of Portland cement materials.
- c. Do not wash out concrete trucks into storm drains, open ditches, streets, streams etc. Whenever possible, perform washout of concrete trucks off site where discharge is controlled and not permitted to discharge to the storm drain system.

For on-site washout:

- i. Locate washout area at least 50 feet from storm drains, open ditches or other water bodies, preferably in a dirt area. Prevent runoff from this area by constructing a temporary pit or bermed area large enough to store the liquid and solid waste.
 - ii. Wash out concrete wastes into the temporary pit where the concrete can set, be broken up and then disposed of properly. If the water volume greater than what will allow concrete to set, allow the wash water to infiltrate and/or evaporate, if possible. Otherwise, allow wash water to settle, then filter and pump it to the sanitary sewer with approval from VSFC and the Water Distribution Superintendent. Remove or vacuum the remaining silt and debris from the ponding or bermed area and dispose of it properly.
- d. Dispose of wastewater from exposed aggregate washing to a dirt area adequate to contain all the wastewater. Once the wastewater has infiltrated, remove any remaining residue. If a suitable dirt area is not available, filter the wash water through straw bales or other filtering materials meeting ABAG Standards for Erosion and Sediment Control Measures before discharging the wash water to the sanitary sewer with approval from VSFC and the Water Distribution Superintendent.
- e. Collect and return sweepings from exposed aggregate concrete to a stockpile or dispose of the waste in a trash container.

7-1.01G(10) GRADING AND EXCAVATION OPERATIONS

The Contractor shall implement sedimentation and erosion control measures to prevent sediments or excavated material from entering the storm drain system.

The erosion and sedimentation control materials and methods shall be in accordance with ABAG Standards for Erosion and Sediment Control Measures and/or the procedures and methods described in the SFRWQCB Erosion and Sediment Control Field Manual.

At a minimum, the Contractor shall install filter materials (such as sandbags, filter fabric, etc.) at storm drain inlet(s) located in and downstream of the project site. These materials must be in place between October 15 and April 15 and also when rain is forecast within 24 hours. The Contractor shall install filter materials or seal all surface inlet openings during the dry season or if there is potential for sediment or excavated material to be discharged to the storm drain system during the construction operation (e.g. sediments and debris tracked by construction vehicles, wind-blown or transported by other runoff). The storm drain inlets shall be sealed such that they can be opened in an emergency and unblocked at the end of each working day, so that no property is damaged as a result of accidents or overflows.

Sedimentation and erosion control/filter materials shall be placed in a manner to restrain

any debris or sediment from flowing into the storm drain system. Said materials or control devices shall also be maintained and/or replaced as necessary to ensure effective sediment control and to prevent flooding.

7-1.01G(11) SPILL PREVENTION AND CONTROL

The Contractor shall take all precautions to prevent accidental spills during construction. However, in the event of a spill, the Contractor shall immediately contain any leaks/spills to prevent them from entering the storm drain system. The Contractor shall properly clean up and dispose of spilled wastes and resulting clean-up materials. If the spilled waste is hazardous, the Contractor shall comply with all federal, state and local hazardous waste requirements.

- a. The Contractor shall not wash any spilled material into the streets, gutters, storm drains, or creeks.
- b. The Contractor shall report any hazardous materials spill immediately to the Vallejo Fire Department, the Solano County Department of Resource Management Environmental Services Division Hazardous Materials Section and other state and local agencies as required by state and local regulations.

7-1.01G(12) VEHICLE/EQUIPMENT CLEANING

The use of soaps, solvents, de-greasers, steam cleaning equipment or equivalent methods for vehicle or equipment cleaning on-site or in the street is not permitted. Vehicle or equipment may be cleaned only with water in a designated, bermed area of adequate size. Rinse water may not runoff site or into the storm drain system. The rinse-water shall be permitted to infiltrate in dirt area or shall be discharged to the sanitary sewer with the approval of VSFCD and the Water Distribution Superintendent.

The Contractor shall dispose of wash water from the cleaning of water-based paint equipment and tools to the sanitary sewer.

When using oil-based paint the Contractor shall, to the maximum extent practicable, filter the paint thinner and solvents for reuse. Any waste thinner, solvent, and sludge from the cleaning of equipment and tools shall be disposed as hazardous waste.

7-1.01G(13) CONTRACTOR TRAINING AND AWARENESS

The Contractor shall train all employees on the water pollution prevention requirements contained in these specifications. The Contractor shall inform all subcontractors of the water pollution prevention contract requirements and include appropriate subcontract provisions to ensure that these requirements are met.

The Contractor shall mark all new catch basins constructed as part of the project with storm drain markers with the logo "No Dumping: Drains to the Bay". Storm drain markers shall be approved by the Water Director.

7-1.01G(14) GOOD HOUSEKEEPING PRACTICES

The Contractor shall implement the following applicable good housekeeping practices.

- a. Store all materials that have the potential to be transported to the storm drain system by storm runoff or by a spill under cover in a contained area or in sealed waterproof containers.
- b. Use ground tarps to collect fallen debris or splatters that could contribute to storm water pollution.
- c. Secure opened bags of cement, and other light materials or powders that can be transported by wind.
- d. Pick up litter, construction debris and other wastes daily from outside areas including the sidewalk area, gutter, street pavement and storm drains impacted by the project. Store all wastes in covered containers or dispose of immediately. Arrange for appropriate collection of those materials separated for recycling.
- e. Dispose of wash water to the sanitary sewer with the approval of VSFCO and the Water Distribution Superintendent or recycle wash water. Refer to 7-1.01G(9) Concrete Operations.
- f. Inspect vehicles and equipment arriving on-site for leaking fluids and promptly repair leaking vehicles and equipment. Use drip pans to catch leaks until repairs are made.
- g. Avoid spills by handling materials carefully. Keep a stockpile of spill materials, such as rags or absorbents, readily accessible on-site. Clean up all spills immediately to prevent any material from being discharged to the storm drain system. Refer to 7-1.01G(11) Spill Prevention and Control.
- h. Train employees regularly on good housekeeping practices and BMPs. Assign specific employees responsibility for BMPs, good housekeeping practices, and actions to take in the event of a spill. Refer to 7-1.01G(13) Contractor Training and Awareness.
- i. Maintain and replace all sediment and water pollution control devices as necessary to ensure that said controls are working effectively (e.g. inspect all sediment ponds or sandbag sedimentation/filtering systems after each rain. Remove accumulated sediment and debris and replace or repair damaged sandbags immediately.)

7-1.01G(15) PAYMENT

Unless otherwise specified in the Specifications, payment for implementation and maintenance of BMPs, implementing SWPPP measures and other work of this section (including dewatering) shall be deemed included in the price paid for associated contract

bid items, and no additional payment shall be made therefor.

7-1.01G(16) ENFORCEMENT

Various sections of the Vallejo Municipal Code^{12.41} enforce section 7.101G. City enforcement may include, but is not limited to: citations, abatement orders, bills for City cleanup costs and administration, civil suits, and criminal charges. City enforcement actions do not void or suspend any enforcement actions by other agencies. At a minimum, the Contractor shall implement the storm water Clean Water Program BMPs listed in 7-1.01G(1) General, or implement equally effective alternatives approved by the Water Distribution Superintendent on all projects within the City of Vallejo.

7-1.01H USE OF PESTICIDES

The Contractor shall comply with all rules and regulations of the Department of Food and Agriculture, the Department of Health, the Department of Industrial Relations, City of Vallejo Standard Specifications and all other agencies which govern the use of pesticides required in the performance of the work on the Contract.

Pesticides shall include but shall not be limited to herbicides, insecticides, fungicides, rodenticides, germicides, nematocides, bactericides, inhibitors, fumigants, defoliant, desiccants, soil sterilants and repellents.

Any substance or mixture of substances intended for preventing, repelling, mitigating, or destroying weeds, insects, diseases, rodents, or nematodes and any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant shall be considered a pesticide.

7-1.01I SOUND CONTROL REQUIREMENTS

The Contractor shall comply with all local sound control and noise level rules, regulations and ordinances which apply to any work performed pursuant to the Contract.

Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without the muffler.

The noise level from the Contractor's operations, between the hours of 9:00 p.m. and 7:00 a.m. shall not exceed 50 dBA and between the hours of 7:00 a.m. and 9:00 p.m. shall not exceed 80 dBA at a distance of 50 feet.

Said noise level requirement shall apply to all equipment on the job or related to the job, including but not limited to trucks, transit mixers or transient equipment that may or may not be owned by the Contractor. The use of loud sound signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel.

Full compensation for conforming to the requirements of this section shall be considered

as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

7-1.01J ASSIGNMENT OF ANTITRUST ACTIONS

The Contractor's attention is directed to the following requirements in Public Contract Code 7103.5 and Government Code Sections 4553 and 4554, which shall be applicable to the Contractor and the Contractor's subcontractors:

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

If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action."

7-1.02 LOAD LIMITATIONS

Unless expressly permitted in the special provisions, construction equipment or vehicles of any kind which, laden or unladen, exceed the maximum weight limitations set forth in Division 15 of the Vehicle Code, shall not be operated over completed or existing treated bases, surfacing, pavement or structures in any areas within the limits of the project, whether or not the area is subject to weight limitations under Section 7-1.01D, "Vehicle Code," except as hereinafter provided in this Section 7-1.02.

After application of the curing seal, no traffic or Contractor's equipment will be permitted on cement treated base or lean concrete base for a period of 72 hours. After 72 hours, traffic and equipment operated on the base shall be limited to that used in paving operations and placing additional layers of cement treated base. No traffic or Contractor's equipment will be permitted on treated permeable base except for that equipment required to place the permeable base and the subsequent layer of pavement. Trucks

used to haul treated base, Portland cement concrete, or asphalt concrete shall enter onto the base to dump at the nearest practical entry point ahead of spreading equipment. Empty haul trucks shall exit from the base at the nearest practical exit point. Entry and exit points shall not be more than 300 m {1,000 feet} ahead of spreading equipment except in locations where Specifications prohibit operation of trucks outside the area occupied by the base or where steep slopes or other conditions preclude safe operation of hauling equipment. In those locations, entry and exit points shall be established at the nearest point ahead of spreading equipment permitted by Specifications and allowing safe operation of hauling equipment. Damage to curing seal or base shall be repaired promptly by the Contractor, at the Contractor's expense, as directed by the Water Distribution Superintendent.

Within the limits of the project and subject to the control of the Water Distribution Superintendent, and provided that the Contractor, at the Contractor's expense, shall provide such protective measures as are deemed necessary by the Water Distribution Superintendent and shall repair any damage caused by the operations, the Contractor will be permitted to:

Make transverse crossings of those portions of an existing public road or street that are within the highway right of way, with construction equipment which exceeds the size or weight limitations set forth in Division 15 of the Vehicle Code.

Make transverse crossings of treated bases, surfacing or pavement which are under construction or which have been completed, with construction equipment which exceeds the size or weight limitations set forth in Division 15 of the Vehicle Code.

Cross bridge structures that are not open to public traffic and which are designed for HS20-44 Live Loading (culverts and pipes excluded), with construction equipment which exceeds the size or weight limitations set forth in Division 15 of the Vehicle Code, but not exceeding the load limitations hereinafter specified, provided that the Contractor furnishes to the Water Distribution Superintendent the dimensions and maximum axle loadings of equipment proposed for use on bridge structures:

The maximum loading on bridge structures due to pneumatic-tired truck and trailer combinations shall not exceed (1) 12,700 kg {28,000 pounds} for single axles, (2) 21,700 kg {48,000 pounds} for tandem axles, nor (3) 27,200 kg {60,000 pounds} total gross load for single vehicles or 50,000 kg {110,000 pounds} total gross load for truck and trailer or semi-trailer combinations.

The loading on bridge structures due to 2 and 3 axle pneumatic-tired earthmovers shall not exceed that shown in the following table.

Allowable Construction Loading On Bridges For 2 and 3 Axle Earthmovers	
Spacing of Bridge Girders (center to center in meters {feet})	Maximum Axle Loading (in kilograms {pounds})
1.2 {4}	12,700 {28,000}

1.5 {5}	13,100 {29,000}
1.8 {6}	13,600 {30,000}
2.1 {7}	14,500 {32,000}
2.4 {8}	15,400 {34,000}
2.7 {9}	16,700 {37,000}
3.0 {10} and over	18,000 {40,000}
Minimum axle spacing: For 3-axle earthmovers Axles 1 to 2 = 2.4 m {8 feet} Axles 2 to 3 = 6.1 m {20 feet} For 2-axle earthmovers Axles 1 to 2 = 6.1 m {20 feet}	

Move equipment within the limits of the project over completed or existing base, surfacing, pavement and structures, whether or not open to the public, in accordance with the limitations and conditions in the "Permit Policy" of the City of Vallejo of Transportation.

Within the limits of the project and subject to the condition that the Contractor shall repair, at the Contractor's expense, any damage caused thereby, the Contractor will be permitted to cross culverts and pipes with construction equipment which exceeds the size or weight limitations set forth in Division 15 of the Vehicle Code in accordance with the conditions set forth on the plans. If the conditions are not set forth on the plans, the provisions in the first paragraph in this Section 7-1.02 will apply.

Should the Contractor desire to increase the load carrying capacity of a structure or structures which are to be constructed as a part of the Contract, in order to facilitate the Contractor's own operations, the Contractor may request the Water Distribution Superintendent to consider redesigning the structure or structures. Proposals by the Contractor to increase the load carrying capacity of structures above 59 000 kg {130,000 pounds} per single axle or pair of axles less than 2.4 m {8 feet} apart, or above 149 000 kg {330,000 pounds} total gross vehicle weight, will not be approved. The request shall include a description of the structure or structures involved and a detailed description of the overloads to be carried, the date the revised plans would be required, and a statement that the Contractor agrees to pay all costs involved in the strengthening of the structure or structures, including the cost of revised plans, and further that the Contractor agrees that no extension of time will be allowed by reason of any delay to the work which may be due to the alteration of the structure or structures. If the Water Distribution Superintendent determines that strengthening the structure or structures will be permitted, the Water Distribution Superintendent will inform the Contractor of the estimated cost of the alterations, including engineering, and the date that revised plans could be furnished. If the cost and date are satisfactory to the Contractor, the Water Distribution Superintendent will prepare a change order providing for the agreed upon alterations.

Pursuant to the authority contained in Section 591 of the Vehicle Code, the Department has determined that, within such areas as are within the limits of the project and are open to public traffic, the Contractor shall comply with all of the requirements set forth in Divisions 11, 12, 13, 14, and 15 of the Vehicle Code. Attention is directed to the

statements in Section 591 that this section shall not relieve him or any person from the duty of exercising due care. The Contractor shall take all necessary precautions for safe operation of his/her equipment and the protection of the public from injury and damage from such equipment.

7-1.03 PAYMENT OF TAXES

The Contract prices paid for the work shall include full compensation for all taxes which the Contractor is required to pay, whether imposed by Federal, State or local government, including, without being limited to, Federal excise tax. No tax exemption certificate or any document designed to exempt the Contractor from payment of any tax will be furnished to the Contractor by the City of Vallejo, as to any tax on labor, services, materials, transportation, or any other items furnished pursuant to the Contract.

7-1.04 PERMITS AND LICENSES

The City will waive all required City of Vallejo permit fees for this project.

The Contractor and all subcontractors shall obtain and keep current for the duration of the project a City of Vallejo Business License.

The Contractor shall give all notices required by and comply with all laws, codes, ordinances and regulations. Before installing any work, the Contractor shall carefully examine the Contract Documents for compliance with all laws, codes, ordinances and regulations and shall immediately report any discrepancy to the Water Distribution Superintendent.

Should the Contractor proceed with the construction and/or install any utility variance, notwithstanding the fact that such installation is in compliance with the Contract Documents, or should the Contractor install any work not in compliance with all laws, codes, ordinances and regulations, the Contractor shall remove such work without cost to the City of Vallejo.

The Contractor shall commit no trespass on any public or private property in any operation due to or connected with the improvements embraced in this contract.

The Environmental Quality Act (Public Resources Code, Sections 21000 to 21176, inclusive) may be applicable to permits, licenses and other authorizations which the Contractor must obtain from local agencies in connection with performing the work of the Contract. The Contractor shall comply with the provisions of those statutes in obtaining the permits, licenses and other authorizations and they shall be obtained in sufficient time to prevent delays to the work.

In the event that the City of Vallejo has obtained permits, licenses or other authorizations, applicable to the work, in conformance with the requirements in the Environmental Quality Act or any other authority, the Contractor shall comply with the provisions of those permits, licenses and other authorizations.

7-1.05 PATENTS

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices or processes used on or incorporated in the work, and agrees to indemnify and save harmless the City of Vallejo, the Director, the Water Distribution Superintendent, and their duly authorized representatives, from all suits at law, or actions of every nature for, or on account of the use of any patented materials, equipment, devices or processes.

7-1.06 SAFETY AND HEALTH PROVISIONS

The Contractor shall conform to all applicable occupational safety and health standards, rules, regulations and orders established by the State of California.

Working areas utilized by the Contractor to perform work during the hours of darkness, shall be lighted to conform to the minimum illumination intensities established by California Division of Occupational Safety and Health Construction Safety Orders.

All lighting fixtures shall be mounted and directed in a manner precluding glare to approaching traffic.

Full compensation for conforming to the provisions in this section shall be considered as included in the Contract prices paid for the various items of work involved and no separate payment will be made therefor.

7-1.07 (BLANK)

7-1.08 PUBLIC CONVENIENCE

This Section 7-1.08 defines the Contractor's responsibility with regard to convenience of the public and public traffic in connection with the Contractor's operations.

Attention is directed to Section 4-1.04, "Detours," for provisions relating to the passage of traffic around the work over detours.

Attention is directed to Section 7-1.09, "Public Safety," for provisions relating to the Contractor's responsibility for the safety of the public. The provisions in Section 7-1.09 are in addition to the provisions in this Section 7-1.08, and the Contractor will not be relieved of the responsibilities as set forth in Section 7-1.09 by reason of conformance with any of the provisions in this Section 7-1.08.

Attention is directed to Section 12, "Construction Area Traffic Control Devices," for provisions concerning flagging and traffic-handling equipment and devices used in carrying out the provisions in this Section 7-1.08 and Section 7-1.09.

In the event of a suspension of the work, attention is directed to Section 8-1.05, "Temporary Suspension of Work."

The Contractor shall so conduct operations as to offer the least possible obstruction and inconvenience to the public and shall have under construction no greater length or amount of work than can be prosecuted properly with due regard to the rights of the public.

Unless otherwise provided in the special provisions, all public traffic shall be permitted to pass through the work with as little inconvenience and delay as possible. Where possible, public traffic shall be routed on new or existing paved surfaces.

Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately by the Contractor at the Contractor's expense.

Existing traffic signals and highway lighting shall be kept in operation for the benefit of the traveling public during progress of the work, and other forces will continue routine maintenance of existing systems.

Construction operations shall be conducted in such a manner as to cause as little inconvenience as possible to abutting property owners.

Convenient access to driveways, houses, and buildings along the line of the work shall be maintained and temporary approaches to crossings or intersecting highways shall be provided and kept in good condition. When the abutting property owner's access across the right of way line is to be eliminated, or to be replaced under the Contract by other access facilities, the existing access shall not be closed until the replacement access facilities are usable.

The Contractor may be required to cover certain signs which regulate or direct public traffic to roadways that are not open to traffic. The Water Distribution Superintendent will determine which signs shall be covered. Except as otherwise provided for construction area signs in Section 12, "Construction Area Traffic Control Devices," furnishing, installing and removing covers will be paid for as extra work as provided in Section 4-1.03D.

Roadway excavation and the construction of embankments shall be conducted in such a manner as to provide a reasonably smooth and even surface satisfactory for use by public traffic at all times; sufficient fill at culverts and bridges to permit traffic to cross shall be placed in advance of other grading operations; and if ordered by the Water Distribution Superintendent roadway cuts shall be excavated in lifts and embankments constructed part width at a time, construction being alternated from one side to the other and traffic routed over the side opposite the one under construction. Culvert installation or culvert construction shall be conducted on but one-half the width of the traveled way at a time, and that portion of the traveled way being used by public traffic shall be kept open and unobstructed until the opposite side of the traveled way is ready for use by traffic.

Upon completion of rough grading at the grading plane, or placing any subsequent layer thereon, the surface of the roadbed shall be brought to a smooth, even condition free of humps and depressions, satisfactory for the use of public traffic.

After the surface of the roadbed has been brought to a smooth and even condition for the passage of public traffic as above provided, any work ordered by the Water Distribution Superintendent for the accommodation of public traffic prior to commencing subgrade operations will be paid for as extra work as provided in Section 4-1.03D. After subgrade preparation for a specified layer of material has been completed, the Contractor shall, at the Contractor's expense, repair any damage to the roadbed or completed subgrade, including damage caused by the Contractor's operations or use by public traffic.

While subgrade and paving operations are underway, public traffic shall be permitted to use the shoulders and, if half-width paving methods are used, shall also be permitted to use the side of the roadbed opposite the one under construction. When sufficient width is available, a passageway wide enough to accommodate at least 2 lanes of traffic shall be kept open at locations where subgrade and paving operations are in active progress. Any shaping of shoulders or reshaping of subgrade necessary for the accommodation of public traffic thereon during subgrade preparation and paving operations will be paid for as extra work as provided in Section 4-1.03D.

Water or dust palliative shall be applied if ordered by the Water Distribution Superintendent for the alleviation or prevention of dust nuisance as provided in Section 10, "Dust Control."

The Contractor will be required to pay the cost of replacing or repairing all facilities installed under extra work for the convenience or direction or warning of public traffic that are lost while in the Contractor's custody, or are damaged by reason of the Contractor's operations to such an extent as to require replacement or repair, and deductions from any moneys due or to become due the Contractor will be made to cover the cost.

Whenever a section of surfacing, pavement or the deck of a structure has been completed, the Contractor shall open it to use by public traffic if the Water Distribution Superintendent so orders or may open it to use by public traffic if the Water Distribution Superintendent so consents. In either case the Contractor will not be allowed any compensation due to any delay, hindrance or inconvenience to the Contractor's operations caused by public traffic, but will thereupon be relieved of responsibility for damage to completed permanent facilities caused by public traffic, within the limits of that use. The Contractor will not be relieved of any other responsibility under the Contract nor will the Contractor be relieved of cleanup and finishing operations.

Except as otherwise provided in this Section 7-1.08 or in the special provisions, full compensation for conforming to the provisions in this Section 7-1.08 shall be considered as included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefor.

Contractor shall furnish, install and maintain all traffic warning and directional signs necessary to maintain the facility in a passable condition at all times. Traffic control shall meet the requirements of the latest State of California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones. The contractor shall submit a Traffic Control Plan for review and acceptance by the Water Distribution Superintendent at the pre-construction meeting.

The Contractor shall designate in writing the name, address and telephone number of the employee and the superintendent to contact after working hours for the proper maintenance of barriers and signs.

Barricades of the flashing beacon variety shall be placed at each excavation site and left until the Water Distribution Superintendent deems there is no longer a hazard.

Full compensation for furnishing all flag persons necessary for the direction of public traffic either through or around the work shall be considered as included in the various contract items of work, and no additional compensation will be allowed therefor.

7-1.09 PUBLIC SAFETY

It is the Contractor's responsibility to provide for the safety of traffic and the public during construction.

Attention is directed to Section 7-1.12, "Indemnification and Insurance."

Attention is directed to Section 7-1.08, "Public Convenience," for provisions relating to the Contractor's responsibility for providing for the convenience of the public in connection with the Contractor's operations.

Attention is directed to Section 12, "Construction Area Traffic Control Devices," for provisions concerning flagging and traffic-handling equipment and devices used in carrying out the provisions of Section 7-1.08 and this Section 7-1.09.

Whenever the Contractor's operations create a condition hazardous to traffic or to the public, the Contractor shall, at the Contractor's expense and without cost to the City of Vallejo, furnish, erect and maintain those fences, temporary railing (Type K), barricades, lights, signs and other devices and take such other protective measures that are necessary to prevent accidents or damage or injury to the public.

Fences, temporary railing (Type K), barricades, lights, signs, and other devices furnished, erected and maintained by the Contractor, at the Contractor's expense, are in addition to any construction area traffic control devices for which payment is provided for elsewhere in the Contract Documents.

The Contractor shall also furnish such flaggers as are necessary to give adequate warning to traffic or to the public of any dangerous conditions to be encountered, and payment therefor will be made as provided in Section 12-2.02, "Flagging Costs."

Signs, lights, flags, and other warning and safety devices and their use shall conform to the requirements set forth in the current Manual of Traffic Controls. Signs or other protective devices furnished and erected by the Contractor, at the Contractor's expense, as above provided, shall not obscure the visibility of, nor conflict in intent, meaning and function of either existing signs, lights and traffic control devices or any construction area

signs and traffic control devices for which furnishing of, or payment for, is provided elsewhere in the Specifications. Signs furnished and erected by the Contractor, at the Contractor's expense, shall be approved by the Water Distribution Superintendent as to size, wording and location.

The installation of general roadway illumination shall not relieve the Contractor of the responsibility for furnishing and maintaining any of the protective facilities herein before specified.

Construction equipment shall enter and leave the highway via existing ramps and crossovers and shall move in the direction of public traffic. All movements of workmen and construction equipment on or across lanes open to public traffic shall be performed in a manner that will not endanger public traffic.

The Contractor's trucks or other mobile equipment which leave a freeway lane, that is open to public traffic, to enter the construction area, shall slow down gradually in advance of the location of the turnoff to give following public traffic an opportunity to slow down.

When leaving a work area and entering a roadway carrying public traffic, the Contractor's equipment, whether empty or loaded, shall in all cases yield to public traffic.

Lanes, ramps and shoulders shall be closed in accordance with the details shown on the plans, the provisions of Section 12, "Construction Area Traffic Control Devices," and as provided in the special provisions.

The Contractor shall notify the Water Distribution Superintendent not less than 15 days before the anticipated start of each falsework and girder erection operation whenever the falsework or girders will reduce clearances available to public traffic.

Pedestrian openings through falsework shall be paved or provided with full width continuous wood walks and shall be kept clear. Pedestrians shall be protected from falling objects and curing water for concrete. Overhead protection for pedestrians shall extend not less than 1.2 m {4 feet} beyond the edge of the bridge deck. All pedestrian openings through falsework shall be illuminated in conformance with the provisions in Section 86-6.11, "Falsework Lighting."

Where the height of vehicular openings through falsework is less than 4.6 m {15 feet}, a W34B "Vertical Clearance" sign shall be provided above each opening facing approaching traffic. The signs shall have black letters and numbers on an orange reflectorized background and shall be illuminated so that the signs are clearly visible. The minimum height of the letters and numbers shall be 150 mm {6 inches} and 250 mm {10 inches}, respectively.

No material or equipment shall be stored where it will interfere with the free and safe passage of public traffic, and at the end of each day's work and at other times when construction operations are suspended for any reason, the Contractor shall remove all equipment and other obstructions from that portion of the roadway open for use by public traffic.

Temporary facilities which the Contractor uses to perform the work shall not be installed or placed where they will interfere with the free and safe passage of public traffic.

Temporary facilities which could be a hazard to public safety if improperly designed shall comply with design requirements specified in the Contract for those facilities or, if none are specified, with standard design criteria or codes appropriate for the facility involved. Working drawings and design calculations for the temporary facilities shall be prepared and signed by an engineer who is registered as a Civil Engineer in the State of California and shall be submitted to the Water Distribution Superintendent for review pursuant to Section 5-1.02, "Plans and Working Drawings." The submittals shall designate thereon the standard design criteria or codes used. Installation of the temporary facilities shall not start until the Water Distribution Superintendent has reviewed and accepted the drawings.

Should the Contractor appear to be neglectful or negligent in furnishing warning devices and taking protective measures as above provided, the Water Distribution Superintendent may direct attention to the existence of a hazard and the necessary warning devices shall be furnished and installed and protective measures taken by the Contractor at the Contractor's expense. Should the Water Distribution Superintendent point out the inadequacy of warning devices and protective measures, that action on the part of the Water Distribution Superintendent shall not relieve the Contractor from responsibility for public safety or abrogate the obligation to furnish and pay for these devices and measures.

Provision for the payment for signs, lights, flares, temporary railing (Type K), barricades, and other facilities by extra work as provided in Section 7-1.08, "Public Convenience," or by Contract item as provided in Section 12, "Construction Area Traffic Control Devices," shall in no wise relieve the Contractor from the responsibility as provided in this Section 7-1.09.

Except as otherwise provided in this Section 7-1.09 or in the special provisions, full compensation for conforming to all of the provisions in this Section 7-1.09 shall be considered as included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefor.

The Contractor shall note that the work may be performed on or in the vicinity of private property. The Contractor shall, at all times, remove all litter, debris, and construction waste, minimize noise, dust, standing water, vibrations, hazardous conditions and provide safe access to these properties. The Contractor is prohibited from using any and all privately owned utilities. The Contractor's materials and equipment shall not be stored upon private property without written approval from the resident and/or owner.

Construction on private property during overtime, weekend, holiday or any other irregular period shall be performed only when the Contractor has requested and received written approval from the adjacent residents and the Water Director.

No separate payment shall be made for the above considerations. Full compensation for the above construction restrictions shall be considered as included in the price paid for the various items of work involved.

7-1.10 USE OF EXPLOSIVES

Explosives shall not be used unless explicitly required in the Contract documents.

When explosives are used, the Contractor shall exercise the utmost care not to endanger life or property.

In advance of doing any blasting work within 60 m {200 feet} of any railroad's tracks or structures, the Contractor shall notify the railroad of the location, date, time and approximate duration of the blasting operations.

7-1.11 PRESERVATION OF PROPERTY

Attention is directed to Section 7-1.12, "Indemnification and Insurance," and to Section 8-1.10, "Utility and Non-Highway Facilities." Due care shall be exercised to avoid injury to existing highway improvements or facilities, utility facilities, adjacent property, and roadside trees, shrubs and other plants that are not to be removed.

Roadside trees, shrubs and other plants that are not to be removed, and pole lines, fences, signs, markers and monuments, buildings and structures, conduits, pipelines under or above ground, sewer and water lines, all highway facilities and any other improvements or facilities within or adjacent to the highway shall be protected from injury or damage, and if ordered by the Water Distribution Superintendent, the Contractor shall provide and install suitable safeguards, accepted by the Water Distribution Superintendent, to protect the objects from injury or damage. If the objects are injured or damaged by reason of the Contractor's operations, the objects shall be replaced or restored at the Contractor's expense. The facilities shall be replaced or restored to a condition as good as when the Contractor entered upon the work, or as good as required by the Specifications accompanying the Contract, if any of the objects are a part of the work being performed under the Contract. The Water Distribution Superintendent may make or cause to be made those temporary repairs that are necessary to restore to service any damaged highway facility. The cost of the repairs shall be borne by the Contractor and may be deducted from any moneys due or to become due to the Contractor under the Contract.

The fact that any underground facility is not shown upon the plans shall not relieve the Contractor of the responsibility under Section 8-1.10, "Utility and Non-Highway Facilities." It shall be the Contractor's responsibility, pursuant thereto, to ascertain the location of those underground improvements or facilities which may be subject to damage by reason of the Contractor's operations.

Any damage to private property caused by the Contractor and adjudged to be the responsibility of the Contractor by the Water Distribution Superintendent shall be rectified to the satisfaction of the Water Distribution Superintendent within a reasonable time,

depending upon the extent of the damage. Said reasonable time shall be as determined by the Water Distribution Superintendent, and if the condition is not rectified, the Water Distribution Superintendent shall have the power and authority to rectify said damage and the cost thereof to be paid for by the Contractor, either by direct payment to the City of Vallejo, or by deducting said amount from moneys due the Contractor.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in protecting or repairing property as specified in this Section 7-1.11, shall be considered as included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefor.

7-1.12 INDEMNIFICATION AND INSURANCE

The Contractor's obligations regarding indemnification of the City of Vallejo and the requirements for insurance shall conform to the provisions in Sections 7-1.12A, "Indemnification," and 7-1.12B, "Insurance," of this Section 7-1.12.

7-1.12A INDEMNIFICATION

Contractor shall defend, indemnify, and save harmless City of Vallejo (including its inspectors, project managers, trustees, officers, agents, members, employees, affiliates, consultants, subconsultants, and representatives), and each of them, of and from any and all claims, demands, suits, causes of action, damages, costs, expenses, attorneys' fees, losses, or liability, in law or in equity, of every kind and nature whatsoever arising out of, or in connection with, Contractor's operations to be performed under this Contract, including, but not limited to:

- A. Personal injury (including, but not limited to, bodily injury, emotional injury or distress, sickness, or disease) or death to persons, including, but not limited to, any employees or agents of Contractor, City of Vallejo, or any subcontractor, or damage to property of anyone including the work itself (including loss of use thereof), caused or alleged to be caused in whole or in part by any negligent act or omission of Contractor, City of Vallejo, or anyone directly or indirectly employed by them, or anyone for whose acts they may be liable;
- B. Penalties threatened, sought, or imposed on account of the violation of any law, order, citation, rule, regulation, standard, ordinance, or statute, caused by the action or inaction of Contractor;
- C. Alleged infringement of any patent rights which may be brought arising out of Contractor's work;
- D. Claims and liens for labor performed or materials used or furnished to be used on the job, including all incidental or consequential damages from such claims or liens;
- E. Contractor's failure to fulfill any of the covenants set forth in these Contract

Documents;

- F. Failure of Contractor to comply with the provisions of the Contract Documents relating to insurance; and,
- G. Any violation or infraction by Contractor of any law, order, citation, rule, regulation, standard, ordinance, or statute in any way relating to the occupational, health, or safety of employees.

The indemnities set forth in this section shall not be limited by the insurance requirements set forth in these Contract Documents.

Contractor's indemnification of City of Vallejo will not include indemnification for claims which arise as the result of the active negligence of City of Vallejo, or the sole negligence or willful misconduct of City, its agents, servants or independent contractors who are directly responsible to City, or for defects in design furnished by such persons.

7-1.12B INSURANCE

Insurance shall conform to the following requirements: The Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his/her agents, representatives, employees or SUBCONTRACTORS. Such insurance shall not be construed to relieve the Contractor of any liability in excess of such coverage. The cost of such insurance shall be included in the Contractor's bid.

A.. Minimum Scope of Insurance Coverage shall be at least as broad as:

1. Comprehensive General Liability Insurance Services.
2. Automobile Liability insurance.
3. Umbrella/Excess Liability insurance.
4. Workers' Compensation insurance as required by the Labor Code of the State of California and Employers Liability insurance.
5. Pollution Liability Insurance.

B. Minimum Limits of Insurance

Contractor shall maintain limits no less than:

1. General Liability: **\$1,000,000** per occurrence. **\$2,000,000** general aggregate for bodily injury, personal injury, and property damage including blanket contractual liability. **\$2,000,000** completed operations aggregate that shall extend a minimum of three (3) years'

beyond project completion..

2. Automobile Liability: **\$1,000,000** per occurrence, including owned, non-owned and hired vehicles.
3. Umbrella/Excess Liability: **\$4,000,000**; for bodily injury, personal injury and property damage liability coverage at least as broad as the primary coverages above, including commercial general liability and employer's liability, to include the following terms and conditions:
 - a. A drop down feature requiring the policy to respond in the event that any primary insurance that would otherwise have applied proves to be uncollectable in whole or in part for any reason;
 - i. Pay on Behalf of Insured" wording (NOT reimbursement)
 - ii. Concurrency of effective dates with primary policies; and
 - iii. Policies shall follow form to the underlying primary policies.
4. Workers' Compensation and Employers Liability: Workers' compensation limits as required by the Labor Code of the State of California and Employers Liability limits of **\$1,000,000** per accident.
5. Pollution Liability Insurance: **\$1,000,000** per claim and in the aggregate.

C. Deductibles and Self Insured Retention

Any deductibles or self - insured retention must be declared to and accepted by the City. At the option of the City, either: the insurer shall reduce or eliminate such deductibles or self - insured retention as respects the City, its officers, officials, employees and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

D. Other Insurance Provisions

1. General Liability and Automobile Liability Coverage
 - a. The City must be named an additional insured on the ACORD form and on an endorsement form using the following language: "The City, its officers, officials, employees and volunteers are to be covered as insured as respects: liability arising out of activities performed by or on behalf of the

Contractor, including the insured's general supervision of the Contractor; products and completed operations of the Contractor, premises owned, occupied or used by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the City, its officers, officials, employees or volunteers and the Water Distribution Superintendent, its officers, directors, employees and subconsultants.”

- b. The endorsement must state that the Contractor's insurance coverage shall be primary insurance as respects the City, its officers, officials, employees, and volunteers. Any insurance or self - insurance maintained by the City, its officers, officials, employees or volunteers and the Water Distribution Superintendent, its officers, directors, employees and subconsultants shall be excess of the Contractor's insurance and shall not contribute with it.
- c. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the City, its officers, officials, employees or volunteers and the Water Distribution Superintendent, its officers, directors, employees and subconsultants.
- d. The Contractor's coverage applies separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

2. Workers' Compensation and Employers Liability Coverage

- a. The insurer shall agree to waive all rights of subrogation against the City, its officers, officials, employees and volunteers for losses arising from work performed by the Contractor for the City and the Water Distribution Superintendent, its officers, directors, employees and subconsultants.

3. All Coverage

- a. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice has been given to the City.

E. Acceptability of Insurers

Insurance is to be placed with insurers with a Best's rating of no less than

A:VII.

F. Verification of Coverage

Contractor shall furnish the City with certificates of insurance and with original endorsements effecting coverage required by this section. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. All certificates and endorsements are to be received and accepted by the City before work commences. The City reserves the right to require complete, certified copies of all required insurance policies, at any time.

Include insurer's NAIC numbers on ACCORD form.

G. Subcontractors

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

I. Exclusions

This insurance does not cover tools owned by mechanics, any tools, equipment, scaffolding, staging, towers, and forms rented or owned by the Contractor, the capital value of which is not included in the cost of the work or any shanties or other structures erected for the sole convenience of the workers.

J. Cancellation or Non-Renewal

Policies must provide that notice of cancellation or non-renewal must be received by the City at least thirty days prior to such event.

7-1.12B(4) ENFORCEMENT

The City of Vallejo may take any steps as are necessary to assure Contractor's compliance with its obligations. Should any insurance policy lapse or be canceled during the Contract period the Contractor shall, within thirty (30) days prior to the effective expiration or cancellation date, furnish the City of Vallejo with evidence of renewal or replacement of the policy. Failure to continuously maintain insurance coverage as herein provided is a material breach of Contract. In the event the Contractor fails to maintain any insurance coverage required, the City of Vallejo may, but is not required to, maintain this coverage and charge the expense to the Contractor or terminate Contractor's control over the work. The required insurance shall be subject to the review and acceptance of City of Vallejo, but any acceptance of insurance certificates by the City of Vallejo shall in no way limit or relieve the Contractor of the Contractor's duties and responsibilities under

the Contract to indemnify, defend and hold harmless the City of Vallejo, its officers, agents, and employees. Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve the Contractor for liability in excess of such coverage, nor shall it preclude the City of Vallejo from taking other actions as is available to it under any other provision of the Contract or law. Failure of the City of Vallejo to enforce in a timely manner any of the provisions of this section shall not act as a waiver to enforcement of any of these provisions at a later date.

7-1.12B(5) SELF-INSURANCE

Self-insurance programs and self-insured retentions in insurance policies are subject to separate annual review and acceptance by the City of Vallejo of evidence of the Contractor's financial capacity to respond. Additionally, self-insurance programs or retentions must provide the City of Vallejo with at least the same protection from liability and defense of suits as would be afforded by first-dollar insurance.

7-1.12B(6) MISCELLANEOUS

Nothing contained in the Contract is intended to make the public or any member thereof a third party beneficiary of the Insurance or Indemnity provisions of these Standard Specifications, nor is any term, condition or other provision of the Contract intended to establish a standard of care owed to the public or any member thereof.

7-1.125 LEGAL ACTIONS AGAINST THE CITY OF VALLEJO

In the event litigation is brought against the City of Vallejo concerning compliance by the City of Vallejo with State or Federal laws, rules or regulations applicable to public works construction, the provisions of this Section 7-1.125 shall apply.

- A. If, pursuant to court order, the City of Vallejo prohibits the Contractor from performing all or any portion of the work, the delay will be considered a right of way delay within the meaning of Section 8-1.09, "Right of Way Delays," unless the Contract is terminated as hereinafter provided.
- B. If, pursuant to court order (other than an order to show cause) the City of Vallejo is prohibited from requiring the Contractor to perform all or any portion of the work, the City of Vallejo may, if it so elects, eliminate the enjoined work pursuant to Section 4-1.03, "Changes," or terminate the Contract.
- C. If the final judgment in the action prohibits the City of Vallejo from requiring the Contractor to perform all or any portion of the work, the City of Vallejo will either eliminate the enjoined work pursuant to Section 4-1.03, "Changes," or terminate the Contract.
- D. If the Contract is to be terminated, the termination and the determination of the total compensation payable to the Contractor shall be governed by the provisions in Section 8-1.11, "Termination of Contract."

7-1.13 DISPOSAL OF MATERIAL OUTSIDE THE PUBLIC RIGHT OF WAY

If the Contractor elects to dispose of materials at locations other than those where arrangements have been made by the City of Vallejo, or, if material is to be disposed of and the City of Vallejo has not made arrangements for disposal of the material, the Contractor shall make arrangements for disposing of the materials outside the public right of way and shall pay all costs involved. Arrangements shall include, but not be limited to, entering into agreements with property owners and obtaining necessary permits, licenses and environmental clearances. Before disposing of any material outside the public right of way, the Contractor shall furnish to the Water Distribution Superintendent satisfactory evidence that the Contractor has entered into agreements with the property owners of the site(s) involved and has obtained the appropriate permits, licenses and clearances.

When any material is to be disposed of outside the public right of way, and the City of Vallejo has not made arrangements for disposal of the material, the Contractor shall first obtain written authorization from the property owner on whose property the disposal is to be made and the Contractor shall file with the Water Distribution Superintendent the authorization or a certified copy thereof together with a written release from the property owner absolving the City of Vallejo from any and all responsibility in connection with the disposal of material on the property. Before any material is disposed of on the property, the Contractor shall obtain written permission from the Water Distribution Superintendent to dispose of the material at the location designated in the authorization.

When material is disposed of as above provided and the disposal location is visible from public view, the Contractor shall dispose of the material in a neat and uniform manner to the satisfaction of the Water Distribution Superintendent.

Where the City of Vallejo has made arrangements with owners of land in the vicinity of a project for the disposal of materials on an owner's property, the arrangements are made solely for the purpose of providing all Bidders an equal opportunity to dispose of the materials on the property. Bidders or Contractors may, upon written request, inspect the documents evidencing the arrangements between property owners and the City of Vallejo. The Contractor may, if the Contractor so elects, exercise any rights that have been obtained, which may be exercised by a Contractor under the arrangements, subject to and upon the conditions hereinafter set forth.

Such arrangements are not a part of the Contract and it is expressly understood and agreed that the City of Vallejo assumes no responsibility to the Bidder or Contractor whatsoever in respect to the arrangements made with the property owner to dispose of materials thereon and that the Contractor shall assume all risks in connection with the use of the property, the terms upon which the use shall be made, and there is no warranty or guaranty, either express or implied, as to the quantity or types of materials that can be disposed of on the property, or that any material can be disposed of on the property.

In those instances in which the City of Vallejo has compiled "Materials Information" as referred to in Section 2-1.03, "Examination of Plans, Specifications, Contract, and Site of Work," the compilation will include the documents setting forth the arrangement made

with some of the property owners for the disposal of material on those owners' properties. The inclusion of the documents therein shall not in any respect operate as a waiver of any of the provisions in this Section 7-1.13 concerning the documents.

The Bidder or Contractor shall make such independent investigation and examination as the Bidder or Contractor deems necessary to be satisfied as to the quantity and types of materials which may be disposed of on the property (if any) and the rights, duties and obligations acquired or undertaken under the arrangement with the property owner.

Notwithstanding that the Contractor may elect to dispose of materials on any such property owner's property, no material may be disposed of on that property unless the Contractor has first either:

- A. Executed a document that will guarantee to hold the owner harmless from all claims for injury to persons or damage to property resulting from the Contractor's operations on the property owner's premises and also agree to conform to all other provisions set forth in the arrangement made between the City of Vallejo and the property owner, or
- B. Entered into an agreement with the owner of the disposal site on any terms mutually agreeable to the owner and the Contractor; provided that the Contractor shall furnish to the Water Distribution Superintendent a release, in a form satisfactory to the Water Distribution Superintendent, executed by the owner, relieving the City of Vallejo of any and all obligations under the City of Vallejo's arrangement with the owner.

If the Contractor elects to dispose of material under (1), the use of the site shall be subject to the terms, conditions and limitations of the arrangement made between the property owner and the City of Vallejo and the Contractor shall pay those charges that are provided for in the arrangement made by the City of Vallejo with the property owner, and deductions will be made from any moneys due or that may become due the Contractor under the Contract sufficient to cover the charges for the material disposed of.

If the Contractor elects to dispose of material under (2), the Contractor shall pay those charges that are provided for in the agreement between the owner and the Contractor and deductions will not be made from any moneys due or that may become due the Contractor under the Contract to cover the charges.

Before acceptance of the Contract, the Water Distribution Superintendent may require the Contractor to submit written evidence that the owner of the disposal site is satisfied that the Contractor has satisfactorily complied with the provisions of either - (1), the arrangement between the City of Vallejo and the owner, or (2), the agreement between the owner and the Contractor, as the case may be.

Full compensation for all costs involved in disposing of materials as specified in this Section 7-1.13, including all costs of hauling, shall be considered as included in the price paid for the Contract item of work involving the materials and no additional compensation will be allowed therefor.

7-1.14 COOPERATION

Should construction be under way by other forces or by other Contractors within or adjacent to the limits of the work specified or should work of any other nature be under way by other forces within or adjacent to those limits, the Contractor shall cooperate with all the other Contractors or other forces to the end that any delay or hindrance to their work will be avoided. The City reserves the right to perform, or to have performed, other or additional work at or near the site (including material sources) at any time, by the use of other forces, without changing the character of the work.

When 2 or more Contractors are employed on related or adjacent work, or obtain materials from the same material source, as provided in Section 6-2.02, "Possible Local Material Sources," or Section 6-2.03, "Mandatory Local Material Sources," each shall conduct their operations in such a manner as not to cause any unnecessary delay or hindrance to the other.

Each Contractor shall be responsible to the other for all damage to work, to persons or property caused to the other by their operations, and for loss caused the other due to unnecessary delays or failure to finish the work within the time specified for completion.

7-1.15 RELIEF FROM MAINTENANCE AND RESPONSIBILITY

Upon request of the Contractor, the Director, or the Director's designated representative, may relieve the Contractor of the duty of maintaining and protecting certain portions of the work as described below, which have been completed in all respects in accordance with the requirements of the Contract and to the satisfaction of the Water Distribution Superintendent, and thereafter except with the Contractor's consent, the Contractor will not be required to do further work thereon. In addition, the action by the Director will relieve the Contractor of responsibility for injury or damage to those completed portions of the work resulting from use by public traffic or from the action of the elements or from any other cause but not from injury or damage resulting from the Contractor's own operations or from the Contractor's negligence.

Portions of the work for which the Contractor may be relieved of the duty of maintenance and protection as provided in the above paragraph include, but are not limited to, the following:

- A. The completion of 0.5-km {0.3-mile} of roadway or 0.5-km {0.3-mile} of one roadway of a divided highway or a frontage road including the traveled way, shoulders, drainage control facilities, planned roadway protection work, lighting and any required traffic control and access facilities.
- B. A bridge or other structure of major importance.
- C. A complete unit of a traffic control signal system or of a highway lighting system.

D. Non-highway facilities constructed for other agencies.

However, nothing in this Section 7-1.15 providing for relief from maintenance and responsibility will be construed as relieving the Contractor of full responsibility for making good any defective work or materials found at any time before the formal written acceptance of the entire Contract by the Director. Furthermore, nothing in this section shall obligate the Director to relieve the Contractor for responsibility for any portion of the work and the Director may refuse to relieve the Contractor from responsibility for any reason, at the Director's (or his delagee's) sole discretion.

7-1.16 CONTRACTOR'S RESPONSIBILITY FOR THE WORK AND MATERIALS

The Contractor shall be completely responsible for the care and condition of the project improvements in their entirety until completion of the maintenance period and acceptance by the City. The Contractor shall provide all watchmen, guards, and security devices, as he/she deems necessary.

Until the acceptance of the Contract, the Contractor shall have the charge and care of the work and of the materials to be used therein (including materials for which the Contractor has received partial payment as provided in Section 9-1.06, "Partial Payments," or materials which have been furnished by the City of Vallejo) and shall bear the risk of injury, loss or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work, except as provided in Sections 7-1.08, "Public Convenience," and 7-1.15, "Relief From Maintenance and Responsibility." The Contractor shall rebuild, repair, restore, and make good all injuries, losses or damages to any portion of the work or the materials occasioned by any cause before its completion and acceptance and shall bear the expense thereof, except as otherwise expressly provided in Section 7-1.165, "Damage by Storm, Flood, Tsunami or Earthquake," and in Section 19-2.04, "Slides and Slipouts," and except for those injuries, losses, or damages that are directly and proximately caused by acts of the Federal Government or the public enemy. Where necessary to protect the work or materials from damage, the Contractor shall, at the Contractor's expense, provide suitable drainage of the roadway and erect those temporary structures that are necessary to protect the work or materials from damage. The suspension of the work from any cause whatever shall not relieve the Contractor of the responsibility for the work and materials as herein specified. If ordered by the Water Distribution Superintendent, the Contractor shall, at the Contractor's expense, properly store materials which have been partially paid for by the City of Vallejo or which have been furnished by the City of Vallejo. Storage by the Contractor shall be on behalf of the City of Vallejo and the City of Vallejo shall at all times be entitled to the possession of the materials, and the Contractor shall promptly return the materials to the site of the work when requested. The Contractor shall not dispose of any of the materials so stored except on written authorization from the Water Distribution Superintendent.

7-1.165 DAMAGE BY STORM, FLOOD, TSUNAMI OR EARTHQUAKE

Attention is directed to Section 7-1.16, "Contractor's Responsibility for the Work and Materials." In the event damage to the work is caused by a storm, flood, tsunami,

earthquake or other natural disaster which constitutes an "Occurrence," as hereinafter defined, the provisions in this Section 7-1.165 shall be applicable, and the Contractor may apply in writing to the Water Distribution Superintendent for the City of Vallejo to pay or participate in the cost of repairing damage to the work from that cause or, in lieu thereof, and at the sole discretion of the City of Vallejo, terminate the Contract and relieve the Contractor of further obligation to perform the work, subject to the following:

- A. Occurrence - "Occurrence" shall include tsunamis, earthquakes in excess of a magnitude of 3.5 on the Richter Scale, and storms, floods and other natural disasters as to which the Governor has proclaimed a state of emergency when the damaged work is located within the territorial limits to which the proclamation is applicable or, which were, in the opinion of the Water Distribution Superintendent, of a magnitude at the site of the work sufficient to have caused such a proclamation had they occurred in a populated area or in an area in which such a proclamation was not already in effect.
- B. Application by Contractor - The Contractor's written request for the City of Vallejo to pay or to participate in the cost of rebuilding, repairing, restoring or otherwise remedying the damage to the work caused by the Occurrence shall be submitted to the Water Distribution Superintendent before performing any work other than emergency work, including emergency work necessary to provide for passage of public traffic.
- C. Protecting the Work from Damage - Nothing in this section shall be construed to relieve the Contractor of the responsibility to protect the work from damage. The Contractor shall bear the entire cost of repairing damage to the work caused by the Occurrence which the Water Distribution Superintendent determines was due to the failure of the Contractor to comply with the requirements of the Contract Documents, take the best measures to protect the work or exercise the best engineering and construction practices in the conduct of the work, and those repair costs shall be excluded from consideration under the provisions of this section.
- D. Repair Work - Repair of damaged work under the provisions of this section shall be pursuant to a Contract change order issued hereunder and specifying the repair work to be performed on the damaged facility. The repair work shall consist of restoring the in-place construction (for the purposes of this section erected falsework and formwork shall be considered in-place construction) to the same state of completion to which the work had advanced prior to the Occurrence. Emergency work which the Water Distribution Superintendent determines would have been part of the repair work if it had not previously been performed, will be considered to be part of the repair work.

The City of Vallejo reserves the right to make changes in the plans and Specifications applicable to the portions of the work to be repaired, and if those changes will increase the cost of repairing the damage over the Water Distribution Superintendent's estimate of the cost of repair without the changes, the Contractor will be paid for the increased costs in accordance with Subsection E and the increased cost amount shall not be considered

in determining the cost of repair to be borne by the Contractor under Subsection F.

Nothing in this section shall be construed to relieve the Contractor of full responsibility for the risk of injury, loss or damage to materials not yet incorporated in the work and to materials, tools and equipment (except erected falsework and formwork) used to perform the work, or to relieve the Contractor of responsibility under Section 7-1.12, "Indemnification and Insurance." The provisions of this section shall not be applicable to the repair of damage caused by an Occurrence to any portion of the work as to which the Contractor has been granted relief from maintenance and responsibility pursuant to Section 7-1.15, "Relief From Maintenance and Responsibility," or to the removal of slides and slipouts or the repair and restoration of damage to the work resulting from slides and slipouts pursuant to Section 19-2.04, "Slides and Slipouts."

- E. Determination of Costs - Unless otherwise agreed between the Water Distribution Superintendent and the Contractor, the cost of the work performed pursuant to this Section 7-1.165 will be determined in conformance with the provisions in Section 9-1.03, "Force Account Payment," except there shall be no markup allowance pursuant to Section 9-1.03A, "Work Performed by Contractor," unless the Occurrence that caused the damage was a tsunami or earthquake. The cost of emergency work, which the Water Distribution Superintendent determines would have been part of the repair work if it had not previously been performed, will be determined in the same manner as the authorized repair work. The cost of repairing damaged work which was not in compliance with the requirements of the plans and Specifications shall be borne solely by the Contractor, and those costs shall not be considered in determining the cost of repair under this Subsection E.
- F. Payment for Repair Work - BLANK
- G. Termination of Contract - If the City of Vallejo elects to terminate the Contract, the termination and the determination of the total compensation payable to the Contractor shall be governed by the provisions of Section 8-1.11, "Termination of Contract."

7-1.17 ACCEPTANCE OF CONTRACT

When the Water Distribution Superintendent has made the final inspection as provided in Section 5-1.13, "Final Inspection," and determines that the Contract work has been completed in all respects in accordance with the Contract Documents, the Water Distribution Superintendent will recommend that the Director formally accept the Work as complete. Upon satisfactory completion of the Work and following the written acceptance of the Work as such by the Director or the Director's designated representative, the Water Distribution Superintendent shall recommend the acceptance of the Contract to the City Council. Upon acceptance of the Contract as complete by the City Council, the said Council shall cause a Notice of Completion to be filed and recorded in the records of the Solano County Recorder's Office.

7-1.18 PROPERTY RIGHTS IN MATERIALS

Nothing in the Contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the work or soil or after partial payment has been made as provided in Section 9-1.06, "Partial Payments," for material delivered on the ground or stored subject to or under the control of the City of Vallejo and unused. All the material shall become the property of the City of Vallejo upon being so attached or affixed or upon payment for materials delivered on the ground or stored subject to or under the control of the City of Vallejo and unused, as provided in Section 9-1.06.

7-1.19 RIGHTS IN LAND AND IMPROVEMENTS

Nothing in these Contract Documents shall be construed as allowing the Contractor to make any arrangements with any person to permit occupancy or use of any land, structure, or building within the limits of the Contract for any purpose whatsoever, either with or without compensation, in conflict with any agreement between the City of Vallejo and any owner, former owner, or tenant of the land, structure, or building.

The Contractor shall not occupy City of Vallejo-owned property outside the right of way as shown on the plans or maps, unless the Contractor enters into a rental agreement with the City of Vallejo. The agreement will be based on the fair rental values.

7-1.20 PERSONAL LIABILITY

Neither the Director, the Water Distribution Superintendent nor any other officer or authorized employee of the City of Vallejo, nor any officer or employee of any county, city or district shall be personally responsible for any liability arising under or by virtue of the Contract.

7-1.21 REPAIR OF EQUIPMENT

The work of installing, assembling, repairing or reconditioning, or other work of any nature on machinery, equipment or tools used in or upon the work shall be considered a part of the work to be performed under the Contract and any laborers, workers or mechanics working on the machinery, equipment or tools, unless employed by bona fide commercial repair shops, garages, blacksmith shops or machine shops, which have been established and operating on a commercial basis for a period of at least 2 months prior to the award of the Contract, shall be subject to all the requirements relating to labor set forth in these Contract Documents.

7-1.22 MATERIAL PLANTS

The construction, erection and operation of material production, proportioning or mixing plants from which material is used wholly on the Contract or on Contracts with the City of Vallejo shall be considered a part of the work to be performed under the Contract and any laborers, workers or mechanics working on those plants shall be subject to all of the requirements relating to labor set forth in these Contract Documents.

SECTION 8: PROSECUTION AND PROGRESS

8-1.01 SUBCONTRACTING

The Contractor shall give personal attention to the fulfillment of the Contract and shall keep the work under the Contractor's control.

No subcontractor will be recognized as such, and all persons engaged in the work of construction will be considered as employees of the Contractor and the Contractor will be held responsible for their work, which shall be subject to the provisions of the Contract Documents.

The Contractor shall perform, with the Contractor's own organization, Contract work amounting to not less than 50 percent of the original total Contract price, except that any designated "Specialty Items" may be performed by subcontract and the amount of any designated "Specialty Items" performed by subcontract may be deducted from the original total Contract price before computing the amount of work required to be performed by the Contractor with the Contractor's own organization. When items of work in the Water Distribution Superintendent's Estimate are preceded by the letters (S) or (S-F), those items are designated as "Specialty Items." Where an entire item is subcontracted, the value of work subcontracted will be based on the Contract item bid price. When a portion of an item is subcontracted, the value of work subcontracted will be based on the estimated percentage of the Contract item bid price, determined from information submitted by the Contractor, subject to acceptance by the Water Distribution Superintendent.

Subcontracts shall include provisions that the Contract between the City of Vallejo and the Contractor is part of the subcontract, and that all terms and provisions of the Contract are incorporated in the subcontract. Subcontracts shall also contain certification by the subcontractor that the subcontractor is experienced in and qualified to do, and knowledgeable about, the subcontracted work. Copies of subcontracts shall be available to the Water Distribution Superintendent upon written request, and shall be provided to the Water Distribution Superintendent within three (3) days of the Water Distribution Superintendent's request.

Before work is started on a subcontract, the Contractor shall file with the Water Distribution Superintendent a written statement showing the work to be subcontracted, the names of the subcontractors and the description of each portion of the work to be subcontracted.

Pursuant to the provisions of Section 6109 of the Public Contract Code, the Contractor shall not perform work on a public works project with a subcontractor who is ineligible to perform work on the public works project pursuant to Section 1777.1 or 1777.7 of the Labor Code.

When a portion of the work which has been subcontracted by the Contractor is not being

prosecuted in a manner satisfactory to the City of Vallejo, the subcontractor shall be removed immediately on the request of the Water Distribution Superintendent and shall not again be employed on the work.

The roadside production of materials produced by other than the Contractor's forces shall be considered as subcontracted. Roadside production of materials shall be construed to be production of aggregates of all kinds with portable, semi portable or temporary crushing or screening, proportioning and mixing plants established or reopened for the purpose of supplying aggregate or material for a particular project or projects. The erection, establishment or reopening of the plants and the operation thereof in the production of materials for use on the work shall conform to the requirements relating to labor set forth in these Specifications and in the special provisions.

When any portion of the work which has been subcontracted by the Contractor is not being prosecuted in a satisfactory manner, the subcontract for such work shall be terminated immediately by the Contractor upon written notice from the Water Distribution Superintendent, and the subcontractor shall not again be employed on the type of work in which his or her performance was unsatisfactory.

In no case shall the use of subcontractors in any way alter the position of the Contractor or Contractor's sureties with relation to this Contract. When a subcontractor is used, the responsibility for every portion of the work shall still remain with the Contractor.

The Contractor shall pay, when due, all valid claims of subcontractors, suppliers, and workmen with respect to the project.

The mention herein of any specific duty or responsibility imposed upon the Contractor shall not be construed as a limitation or restriction of any other responsibility or duty imposed upon the Contractor by the Contract, said reference being made herein merely for the purpose of explaining the specific duty or responsibility.

8-1.02 ASSIGNMENT

The performance of the Contract may not be assigned, except upon the written consent of the Director. Consent will not be given to any proposed assignment which would relieve the original Contractor or the Contractor's surety of their responsibilities under the Contract nor will the Director consent to any assignment of a part of the work under the Contract.

The Contractor may assign moneys due or to become due the Contractor under the Contract and the assignment will be recognized by the City of Vallejo, if given proper notice thereof, to the extent permitted by law, but any assignment of moneys shall be subject to all proper set-offs in favor of the City of Vallejo and to all deductions provided for in the Contract and particularly all money withheld, whether assigned or not, shall be subject and subordinate to claims of the City of Vallejo.

8-1.03 BEGINNING OF WORK

The Contractor shall begin work within 10 calendar days after the first working day stated on the Notice to Proceed, and shall diligently prosecute the same to completion within the time limit provided in the Notice to Contractors.

The Contractor shall notify the Water Distribution Superintendent, in writing, of the Contractor's intent to begin work at least 72 hours before work is begun. The notice shall be delivered to the Water Distribution Superintendent and shall specify the date the Contractor intends to start. If the project has more than one location of work, a separate notice shall be given for each location.

Should the Contractor begin work in advance of receiving written Notice to Proceed, any work performed by the Contractor in advance of the date of Notice to Proceed shall be considered as having been done by the Contractor at the Contractor's own risk and as a volunteer.

The Notice to Proceed shall constitute authority for the Contractor to enter upon the site of the work and to begin operations, upon condition that the Contractor has strictly complied with all requirements of these Contract Documents, including but not limited to, furnishing all required documentation and certificates of insurance. If Contractor has not provided City of Vallejo with all documents required by these Contract Documents as of the date of the Notice to Proceed, Contractor shall not be allowed on the site of the work or allowed to start work on the Project, notwithstanding the issuance of a Notice to Proceed.

When the Contractor has started work on the Project, the Contractor shall diligently prosecute the work to completion within the time limit provided in the Contract Documents.

The counting of working days shall begin on the date stated as the first working day on the Notice to Proceed, whether or not Contractor is allowed on the work site due to Contractor's failure to furnish City of Vallejo with all documentation required by these Contract Documents. In no event shall there be a period of time greater than thirty (30) days, from the time the Contract forms are first received by the Contractor and the commencement of the contract time, regardless of the receipt or lack thereof by City of Vallejo of all documents required by these Contract Documents. The Contractor shall, on commencing operations, take all precautions required for public safety and shall observe all the provisions in these Specifications and the special provisions.

8-1.04 (BLANK)

8-1.05 TEMPORARY SUSPENSION OF WORK

The Water Distribution Superintendent shall have the authority to suspend the work wholly or in part, for any time period as the Water Distribution Superintendent deems necessary, due to unsuitable weather, or to such other conditions considered unfavorable for the suitable prosecution of the work, or for any time period as the Water Distribution Superintendent deems necessary due to the failure on the part of the Contractor to carry

out orders given, or to perform any provision of the Contract, or for any other reason. The Contractor shall immediately comply with the written order of the Water Distribution Superintendent to suspend the work wholly or in part. The suspended work shall be resumed when conditions are favorable and methods are corrected, as ordered or accepted in writing by the Water Distribution Superintendent, or as directed by the Water Distribution Superintendent.

In the event that a suspension of work is ordered as provided above, and should that suspension be ordered by reason of the failure of the Contractor to carry out orders or to perform any provision of the Contract; or by reason of weather conditions being unsuitable for performing any item or items of work, which work, in the sole opinion of the Water Distribution Superintendent, could have been performed prior to the occurrence of the unsuitable weather conditions had the Contractor diligently prosecuted the work when weather conditions were suitable; the Contractor, at the Contractor's expense, shall do all the work necessary to provide a safe, smooth, and unobstructed passageway through construction for use by public traffic during the period of that suspension as provided in Sections 7-1.08, "Public Convenience," and 7-1.09, "Public Safety," and as specified in the special provisions for the work. In the event that the Contractor fails to perform the work above specified, the City of Vallejo will perform that work and the cost thereof will be deducted from moneys due or to become due the Contractor.

In the event that a suspension of work is ordered by the Water Distribution Superintendent due to unsuitable weather conditions, and in the sole opinion of the Water Distribution Superintendent, the Contractor has prosecuted the work with energy and diligence prior to the time that operations were suspended, the cost of providing a smooth and unobstructed passageway through the work will be paid for as extra work as provided in Section 4-1.03D or, at the option of the Water Distribution Superintendent, that work will be performed by the City of Vallejo at no cost to the Contractor.

If the Water Distribution Superintendent orders a suspension of all of the work or a portion of the work which is the current controlling operation or operations, due to unsuitable weather or to other conditions considered unfavorable to the suitable prosecution of the work, the days on which the suspension is in effect shall not be considered working days as defined in Section 8-1.06, "Time of Completion." If a portion of work at the time of the suspension is not a current controlling operation or operations, but subsequently does become the current controlling operation or operations, the determination of working days will be made on the basis of the then current controlling operation or operations.

If a suspension of work is ordered by the Water Distribution Superintendent, due to the failure on the part of the Contractor to carry out orders given or to perform any provision of the Contract, the days on which the suspension order is in effect shall be considered working days if those days are working days within the meaning of the definition set forth in Section 8-1.06, "Time of Completion."

No Contract adjustment will be allowed under the provisions specified in this section to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any term or condition of this Contract.

Any Contract adjustment warranted due to suspension of work ordered by the Water Distribution Superintendent will be made in the same manner as provided for right of way delays in Section 8-1.09, "Right of Way Delays."

In the event of a suspension of work under any of the conditions set forth in this Section 8-1.05, the suspension of work shall not relieve the Contractor of the responsibilities as set forth in Section 7, "Legal Relations and Responsibility."

8-1.06 TIME OF COMPLETION

The Contractor shall complete all or any designated portion of the work called for under the Contract Documents in all parts and requirements within the time set forth in the Contract Documents.

A working day is defined as any day, except as follows:

- A. Saturdays, Sundays and legal holidays;
- B. Days on which the Contractor is prevented by inclement weather or conditions resulting immediately therefrom adverse to the current controlling operation or operations, as determined by the Water Distribution Superintendent, from proceeding with at least 75 percent of the normal labor and equipment force engaged on that operation or operations for at least 60 percent of the total daily time being currently spent on the controlling operation or operations; or
- C. Days on which the Contractor is prevented, by reason of requirements in "Maintaining Traffic" of the special provisions, from working on the controlling operation or operations for at least 60 percent of the total daily time being currently spent on the controlling operation or operations.

Should the Contractor prepare to begin work at the regular starting time of any day on which inclement weather, or the conditions resulting from the weather, or the condition of the work, prevents the work from beginning at the usual starting time and the crew is dismissed as a result thereof and the Contractor does not proceed with at least 75 percent of the normal labor and equipment force engaged in the current controlling operation or operations for at least 60 percent of the total daily time being currently spent on the controlling operation or operations, the Contractor will not be charged for a working day whether or not conditions should change thereafter during that day and the major portion of the day could be considered to be suitable for those construction operations.

The current controlling operation or operations is to be construed to include any feature of the work (e.g., an operation or activity, or a settlement or curing period) considered at the time by the Water Distribution Superintendent and the Contractor, which, if delayed or prolonged, will delay the time of completion of the Contract.

Determination that a day is a non-working day by reason of inclement weather or

conditions resulting immediately therefrom, shall be made by the Water Distribution Superintendent. The Contractor will be allowed 15 days from the issuance of the weekly statement of working days in which to file a written protest setting forth in what respects the Contractor differs from the Water Distribution Superintendent; otherwise, the decision of the Water Distribution Superintendent shall be deemed to have been accepted by the Contractor as correct. The Water Distribution Superintendent will furnish the Contractor a weekly statement showing the number of working days charged to the Contract for the preceding week, the number of working days of time extensions being considered or accepted, the number of working days originally specified for the completion of the Contract and the number of working days remaining to complete the Contract and the extended date for completion thereof, except when working days are not being charged in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work."

8-1.07 LIQUIDATED DAMAGES

It is agreed by the parties to the Contract that in case all the work called for under the Contract in all parts and requirements is not completed within the number of working days as set forth in the Contract Documents, damage will be sustained by the City of Vallejo, and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the City of Vallejo will sustain in the event of and by reason of the delay; and it is therefore agreed that the Contractor will pay to the City of Vallejo, the sum set forth in the Contract Documents per day for each and every calendar day's delay in completing the work in excess of the number of working days prescribed; and the Contractor agrees to pay the liquidated damages herein provided for, and further agrees that the City of Vallejo may deduct the amount thereof from any moneys due or that may become due the Contractor under the Contract.

The Contractor will be granted an extension of time and will not be assessed with liquidated damages or the cost of engineering and inspection for any portion of the delay in completion of the work beyond the time named in the Contract Documents for the completion of the work caused by acts of God or of the public enemy, fire, floods, tsunamis, earthquakes, epidemics, quarantine restrictions, strikes, labor disputes, shortage of materials and freight embargoes, provided that the Contractor shall notify the Water Distribution Superintendent in writing of the causes of delay within 3 days from the beginning of that delay. The Water Distribution Superintendent shall ascertain the facts and the extent of the delay, and the Water Distribution Superintendent's findings thereon shall be final and conclusive.

No extension of time will be granted for a delay caused by a shortage of materials unless the Contractor furnishes to the Water Distribution Superintendent documentary proof that the Contractor has made every effort to obtain the materials from all known sources in a diligent and timely manner, and further proof in the form of supplementary progress schedules, as required in Section 8-1.04, "Progress Schedule," that the inability to obtain the materials when originally planned, did in fact cause a delay in final completion of the entire work which could not be compensated for by revising the sequence of the Contractor's operations. The term "shortage of materials," as used in this section, shall apply only to materials, articles, parts or equipment which are standard items and are to be incorporated in the work. The term "shortage of materials," shall not apply to materials,

parts, articles or equipment which are processed, made, constructed, fabricated or manufactured to meet the specific requirements of the Contract. Only the physical shortage of material will be considered under these provisions as a cause for extension of time. Delays in obtaining materials due to priority in filling orders will not constitute a shortage of materials.

Except for the additional compensation provided for in Section 8-1.09, "Right of Way Delays," the Contractor shall have no claim for damage or compensation for any delay or hindrance.

It is the intention of the above provisions that the Contractor shall not be relieved of liability for liquidated damages or engineering and inspection charges for any period of delay in completion of the work in excess of that expressly provided for in this Section

8-1.08 TERMINATION OF CONTROL

Whenever, in the opinion of the City of Vallejo, the Contractor has failed to supply an adequate force of labor, equipment, or materials of proper quality, or has failed in any other respect to prosecute the work with the diligence specified in the Contract; or if Contractor should refuse or fail to comply with laws, ordinances, or directions of the Water Distribution Superintendent; or if Contractor should fail to make prompt payments to subcontractors or for labor or materials; or otherwise be in breach of this Contract; the City of Vallejo may give written notice of at least five (5) calendar days to the Contractor and Contractor's sureties that if the defaults are not remedied within a time specified in such notice, the Contractor's control over the work will be terminated.

If the Contractor should be adjudged a bankrupt, or make an assignment for the benefit of Contractor's creditors, or if a receiver should be appointed on account of Contractor's insolvency, the City of Vallejo may declare the Contractor's control over the work terminated, and so notify the Contractor and Contractor's sureties.

Upon such termination, the City of Vallejo may take possession, and use all or any part, of the Contractor's materials, tools, equipment, and appliances upon the premises to complete the work; the City of Vallejo assuming responsibility for the final relinquishment of such equipment at the conclusion of the work, or sooner, at its option, in as good condition as when it was taken over, reasonable wear and tear excepted; and the City of Vallejo agrees to pay for such materials and the use of said equipment at a reasonable compensation.

Upon such termination or the City of Vallejo's declaration that the Contractor is in default, the City of Vallejo may direct the surety to complete, or cause to be completed, the Contract work, or the City of Vallejo may direct that all or any part of the work be completed by day labor, or by employment of other contractors on informal contracts, or both. If the City of Vallejo directs the surety to complete or cause to be completed, the Contract work, Contractor's performance bond surety agrees to immediately undertake to complete or cause to be completed, all Contract work. If surety fails or refuses to immediately complete or cause to be completed, all Contract work, surety agrees that

damage will be sustained by the City of Vallejo, and that it is and will be impracticable to determine the actual amount of damage by reason of such acts; and the Contractor and surety agree that in addition to any other damages City of Vallejo may sustain and may be recovered pursuant to these Contract Documents, including but not limited to, other liquidated damages for delay, or actual damages, the sum of FIVE HUNDRED DOLLARS (\$500.00) is a reasonable amount to be charged as liquidated damages for each day surety fails or refuses to complete or cause to be completed, all Contract work, and it is therefore agreed that the Contractor and surety will pay to the City of Vallejo this sum, for each and every calendar day surety fails or refuses to complete or cause to be completed, the Contract work; and the Contractor and surety further agree that the City of Vallejo may deduct and retain the amount thereof from any monies due the Contractor under the Contract.

If the Contractor's control over the work is terminated as provided above, the Contractor is not entitled to receive any portion of the amount to be paid under the Contract until it is fully completed. After completion, if the unpaid balance exceeds the sum of the amount expended by the City of Vallejo in finishing the work, plus all damages sustained, or to be sustained, by the City of Vallejo, plus any unpaid claims on account of labor, materials, tools, equipment, or supplies contracted for by the Contractor for the work herein contemplated, the excess not otherwise required by these Contract Documents to be retained shall be paid the Contractor. If the sum so expended exceeds the unpaid balance, the Contractor and Contractor's surety are liable to the City of Vallejo for the amount of such excess. If the surety completes the Contract work as provided above, such surety shall be subrogated to money due under the Contract, and to money which shall become due in the course of completion by the surety. However, Contractor and surety agree that any subrogation rights of surety are subordinate to and inferior to rights of City of Vallejo.

The City of Vallejo reserves the right to terminate the work for its convenience upon written notice to Contractor. In such event, the Contractor shall be paid its reasonable costs for that portion of the work performed to the date of termination, reasonable costs associated with demobilization, plus fifteen percent (15%) of all such costs for overhead and profit.

8-1.09 RIGHT OF WAY DELAYS

If, through the failure of the City of Vallejo to acquire or clear right of way, the Contractor sustains loss which could not have been avoided by the judicious handling of forces, equipment and plant, there shall be paid to the Contractor that amount that the Water Distribution Superintendent may find to be a fair and reasonable compensation for that part of the Contractor's actual loss, that, in the opinion of the Water Distribution Superintendent, was unavoidable, determined as follows:

Compensation for idle time of equipment will be determined in the same manner as determinations are made for equipment used in the performance of extra work paid for on a force account basis, as provided in Section 9-1.03A(3), "Equipment Rental," with the following exceptions:

- A. The right of way delay factor for each classification of equipment shown in the State Department of Transportation publication entitled Labor Surcharge And Equipment Rental Rates, which is a part of the Contract, will be applied to that equipment rental rate.
- B. The time for which the compensation will be paid will be the actual normal working time during which the delay condition exists, but in no case will exceed 8 hours in any one day.
- C. The days for which compensation will be paid will be the calendar days, excluding Saturdays, Sundays and legal holidays, during the existence of the delay, except that when rental of equipment is paid for under the provisions in Section 9-1.03A (3b), "Equipment not on the Work," no payment will be made for right of way delays in conformance with the provisions in this Section 8-1.09.

Actual loss shall be understood to include no items of expense other than idle time of equipment and necessary payments for idle time of workers, cost of extra moving of equipment and cost of longer hauls. Compensation for idle time of equipment will be determined as provided in this Section 8-1.09 and compensation for idle time of workers will be determined as provided in Section 9-1.03A(1), "Labor," and no markup will be added in either case for overhead and profit. The cost of extra moving of equipment and the cost of longer hauls will be paid for as extra work as provided in Section 4-1.03D.

If performance of the Contractor's work is delayed as the result of the failure of the City of Vallejo to acquire or clear right of way, an extension of time determined pursuant to the provisions in Section 8-1.07, "Liquidated Damages," will be granted.

8-1.10 UTILITY AND NON-HIGHWAY FACILITIES

It is anticipated that some or all of the utility and other non-highway facilities, both above ground and below ground, that are required to be rearranged (as used herein, rearrangement includes installation, relocation, alteration or removal) as a part of the highway improvement will be rearranged in advance of construction operations. Where it is not anticipated that the rearrangement will be performed prior to construction, or where the rearrangement must be coordinated with the Contractor's construction operations, the existing facilities that are to be rearranged will be indicated on the plans or in the special provisions. Where a rearrangement is indicated on the plans or in the special provisions, the Contractor will have no liability for the costs of performing the work involved in the rearrangement.

The right is reserved to the City of Vallejo and the owners of facilities, or their authorized agents, to enter upon the highway right of way for the purpose of making those changes that are necessary for the rearrangement of their facilities or for making necessary connections or repairs to their properties. The Contractor shall cooperate with forces engaged in this work and shall conduct operations in such a manner as to avoid any unnecessary delay or hindrance to the work being performed by the other forces. Wherever necessary, the work of the Contractor shall be coordinated with the

rearrangement of utility or other non-highway facilities, and the Contractor shall make arrangements with the owner of those facilities for the coordination of the work.

Attention is directed to the possible existence of underground facilities and utilities not indicated in the Contract Documents and to the possibility that utilities may be in a location different from that which is indicated in the Contract Documents. The Contractor shall ascertain the exact location of all utilities, the location of their service laterals or other appurtenances, and of existing service lateral or appurtenances of any other underground facilities prior to doing work.

If the Contractor cannot locate an underground facility or utility whose presence is indicated in the Contract Documents after a diligent search and investigation, the Contractor shall immediately so notify the Water Distribution Superintendent in writing. If the facility for which the notice is given is in a substantially different location from that indicated on the plans or in the special provisions, the additional cost of locating the facility will be paid for as extra work as provided in Section 4-1.03D.

If the Contractor discovers utilities not indicated in the Contract Documents, the Contractor shall immediately give the Water Distribution Superintendent and the Utility Company written notification of the existence of those facilities. The utilities shall be located and protected from damage as directed by the Water Distribution Superintendent, and the cost of that work will be paid for as extra work as provided in Section 4-1.03D. The Contractor shall, if directed by the Water Distribution Superintendent, repair any damage which may occur to the utilities. The cost of that repair work, not due to the failure of the Contractor to exercise reasonable care or to comply with the terms of the Contract Documents, will be paid for as extra work as provided in Section 4-1.03D. Damage due to the Contractor's failure to exercise reasonable care or comply with the Contract Documents shall be repaired at the Contractor's cost and expense.

Where it is determined by the Water Distribution Superintendent that the rearrangement of an underground facility is essential in order to accommodate the highway improvement and the plans and Specifications do not provide that the facility is to be rearranged, the Water Distribution Superintendent will provide for the rearrangement of the facility by other forces or the rearrangement shall be performed by the Contractor and will be paid for as extra work as provided in Section 4-1.03D.

When ordered by the Water Distribution Superintendent in writing, the Contractor shall rearrange any utility or other non-highway facility necessary to be rearranged as a part of the highway improvement, and that work will be paid for as extra work as provided in Section 4-1.03D.

Should the Contractor desire to have any rearrangement made in any utility facility, or other improvement, for the Contractor's convenience in order to facilitate the Contractor's construction operations, which rearrangement is in addition to, or different from, the rearrangements indicated on the plans or in the special provisions, the Contractor shall make whatever arrangements are necessary with the owners of the utility or other non-highway facility for the rearrangement and bear all expenses in connection therewith.

The Contractor shall immediately notify the Water Distribution Superintendent of any delays to the Contractor's operations as a direct result of underground main or trunk line facilities which were not indicated on the plans or in the special provisions or were located in a position substantially different from that indicated on the plans or in the special provisions, or as a direct result of utility or other non-highway facilities not being rearranged as herein provided (other than delays in connection with rearrangements made to facilitate the Contractor's construction operations or delays due to a strike or labor dispute). These delays will be considered right of way delays within the meaning of Section 8-1.09, "Right of Way Delays," and compensation for the delay will be determined in conformance with the provisions in Section 8-1.09. The Contractor shall be entitled to no other compensation for that delay.

Any delays to the Contractor's operations as a direct result of utility or other non-highway facilities not being rearranged as provided in this Section 8-1.10, due to a strike or labor dispute, will entitle the Contractor to an extension of time as provided in Section 8-1.07, "Liquidated Damages." The Contractor shall be entitled to no other compensation for that delay.

8-1.11 TERMINATION OF CONTRACT

The Contract may be terminated by the Director when termination is authorized by Section 7-1.125, "Legal Actions Against the City of Vallejo," Section 7-1.165, "Damage by Storm, Flood, Tsunami or Earthquake," or by other provisions of the Contract which authorize termination. The City of Vallejo also reserves the right to terminate the Contract at any time upon a determination by the Director that termination of the Contract is in the best interest of the City of Vallejo.

If the Director elects to terminate the Contract, the termination of the Contract and the total compensation payable to the Contractor shall be governed by the following:

- A. The Water Distribution Superintendent will issue the Contractor a written notice signed by the Director, specifying that the Contract is to be terminated. Upon receipt of the written notice, the Contractor will be relieved of further responsibility for damage to the work (excluding materials) as specified in Section 7-1.16, "Contractor's Responsibility for the Work and Materials," and, except as otherwise directed in writing by the Water Distribution Superintendent, the Contractor shall:
 - 1. Stop all work under the Contract except that specifically directed to be completed prior to acceptance.
 - 2. Perform work the Water Distribution Superintendent deems necessary to secure the project for termination.
 - 3. Remove equipment and plant from the site of the work.
 - 4. Take action that is necessary to protect materials from damage.

5. Notify all subcontractors and suppliers that the Contract is being terminated and that their Contracts or orders are not to be further performed unless otherwise authorized in writing by the Water Distribution Superintendent.
6. Provide the Water Distribution Superintendent with an inventory list of all materials previously produced, purchased or ordered from suppliers for use in the work and not yet used in the work, including its storage location, and such other information as the Water Distribution Superintendent may request.
7. Dispose of materials not yet used in the work as directed by the Water Distribution Superintendent. It shall be the Contractor's responsibility to provide the City of Vallejo with good title to all materials purchased by the City of Vallejo hereunder, including materials for which partial payment has been made as provided in Section 9-1.06, "Partial Payments," and with bills of sale or other documents of title for those materials.
8. Subject to the prior written acceptance of the Water Distribution Superintendent, settle all outstanding liabilities and all claims arising out of subcontracts or orders for materials terminated hereunder. To the extent directed by the Water Distribution Superintendent, the Contractor shall assign to the City of Vallejo all the right, title and interest of the Contractor under subcontracts or orders for materials terminated hereunder.
9. Furnish the Water Distribution Superintendent with the documentation required to be furnished by the Contractor under the provisions of the Contract including, on projects as to which Federal funds are involved, all documentation required under the Federal requirements included in the Contract.
10. Take other actions directed by the Water Distribution Superintendent.

B. Acceptance of the Contract as hereinafter specified shall not relieve the Contractor of responsibility for damage to materials. The Contractor shall continue to be responsible for damage to materials after issuance of the Notice of Termination, except as follows:

1. The Contractor's responsibility for damage to materials for which partial payment has been made as provided in Section 9-1.06, "Partial Payments," and for materials furnished by the City of Vallejo for use in the work and unused shall terminate when the Water Distribution Superintendent certifies that those materials have been stored in the manner and at the locations the Water Distribution Superintendent has directed.
2. The Contractor's responsibility for damage to materials purchased by the City of Vallejo subsequent to the issuance of the notice that the Contract is to be terminated shall terminate when title and delivery of those materials has been taken by the City of Vallejo.

When the Water Distribution Superintendent determines that the Contractor has completed the work under the Contract directed to be completed prior to termination and such other work as may have been ordered to secure the project for termination, the Water Distribution Superintendent will recommend that the Director formally accept the Contract.

- C. Termination of the Contract shall not relieve the Contractor or surety of their obligation for any claims arising out of the work performed.
- D. The total compensation to be paid to the Contractor shall be determined by the Water Distribution Superintendent on the basis of the following:
 - 1. The reasonable cost to the Contractor, without profit, for all work performed under the Contract, including mobilization, demobilization and work done to secure the project for termination. In determining the reasonable cost, deductions will be made for the cost of materials to be retained by the Contractor, amounts realized by the sale of materials, and for other appropriate credits against the cost of the work. Deductions will also be made, when the Contract is terminated under the authority of Section 7-1.165, "Damage by Storm, Flood, Tsunami or Earthquake," for the cost of materials damaged by the "occurrence."

When, in the opinion of the Water Distribution Superintendent, the cost of a Contract item of work is excessively high due to costs incurred to remedy or replace defective or rejected work, the reasonable cost to be allowed will be the estimated reasonable cost of performing that work in compliance with the requirements of the Contract Documents and the excessive actual cost shall be disallowed.

- 2. A reasonable allowance for profit on the cost of the work performed as determined under Subsection (1), provided the Contractor establishes to the satisfaction of the Water Distribution Superintendent that it is reasonably probable that the Contractor would have made a profit had the Contract been completed and provided further, that the profit allowed shall in no event exceed 4 percent of the cost.
- 3. The reasonable cost to the Contractor of handling material returned to the vendor, delivered to the City of Vallejo or otherwise disposed of as directed by the Water Distribution Superintendent.
- 4. A reasonable allowance for the Contractor's administrative costs in determining the amount payable due to termination of the Contract.

All records of the Contractor and the Contractor's subcontractors, necessary to determine compensation in conformance with the provisions in this Section 8-1.11, shall be open to

inspection or audit by representatives of the City of Vallejo at all times after issuance of the notice that the Contract is to be terminated and for a period of 3 years, thereafter, and those records shall be retained for that period.

After acceptance of the work by the Director, the Water Distribution Superintendent may make payments on the basis of interim estimates pending issuance of the Final Estimate in conformance with the provisions in Section 9-1.07B, "Final Payment and Claims," when, in the Water Distribution Superintendent's opinion, the amount thus paid, together with all amounts previously paid or allowed, will not result in total compensation in excess of that to which the Contractor will be entitled. All payments, including payment upon the Final Estimate shall be subject to deduction for prior payments and amounts, if any, to be kept or retained under the provisions of the Contract.

SECTION 9: MEASUREMENT AND PAYMENT

9-1.01 MEASUREMENT OF QUANTITIES

All work to be paid for at a Contract price per unit of measurement will be measured by the Water Distribution Superintendent in accordance with the International System of Units (SI) {United States Standard Measures. A ton shall consist of 2,000 pounds avoirdupois}.

Unless shipped by rail, material paid for by mass shall be weighed on scales furnished by and at the expense of the Contractor or on other sealed scales regularly inspected by the Division of Measurement Standards or its designated representative.

Weighing, measuring and metering devices used to measure the quantity of materials used in the work shall be suitable for the purpose intended and shall conform to the tolerances and Specifications as outlined in Title 4, Chapter 9 of the California Code of Regulations, the provisions of the California Business and Professions Code, Division 5, and these Specifications. Devices not Type-approved by the Division of Measurement Standards shall be Type-approved in conformance with the requirements in California Test 109.

Elements of the material plant controller which affect the accuracy or delivery of data shall be made available for the application of security seals. These devices will be inspected and adjusting elements sealed prior to the first production of materials for the Contract. The security seals will be furnished by the Water Distribution Superintendent. Material production shall cease when alteration, disconnection or otherwise manipulation of the security seals occur, and production shall not resume until the device is inspected and resealed by the Water Distribution Superintendent.

Weighing, measuring or metering devices used to determine the quantity of materials to be paid for will be considered to be "commercial devices" and shall be sealed by the Division of Measurement Standards or its authorized representative as often as the Water Distribution Superintendent may deem necessary. The installation of all portable vehicle scales must be accepted by the Water Distribution Superintendent prior to sealing.

Vehicle scales shall be of sufficient size to permit the entire vehicle or combination of vehicles to rest on the scale deck while being weighed. Combination vehicles may be weighed as separate units provided they are disconnected while being weighed. The maximum concentrated load shall not exceed the manufacturer's designed sectional capacity of the scale.

Weighing, measuring or metering devices required by these Specifications for the purpose of proportioning a material or product will be considered to be "non-commercial devices" and shall be tested and accepted in conformance with the requirements in California Test 109. This testing shall be done by one of the following, in the presence of the Water Distribution Superintendent, as often as the Water Distribution Superintendent deems necessary:

- A. A County Sealer of Weights and Measures;
- B. A Scale Service Agency; or
- C. A Division of Measurement Standards Official.

The Contractor shall notify the Water Distribution Superintendent at least 24 hours in advance of testing the device.

Undersupports for scale bearing points shall be constructed of Portland cement concrete produced from commercial quality aggregates and cement, which contains not less than 275 kg of cement per cubic meter {463 pounds of cement per cubic yard}. Undersupports shall be constructed in a manner to prevent any shifting or tilting of the support and shall have a minimum height of 350 mm {14 inches} above ground line. The footings shall have a minimum depth of 150 mm {6 inches} below the ground line. The bearing surface of the footings shall have a minimum width of 760 mm {30 inches} and shall be of sufficient area so the pressure does not exceed 200 kPa {4,000 pounds per square foot}. Adequate drainage shall be provided to prevent saturation of the ground under the scale. Scale bulkheads shall be of adequate material and strength to resist displacement. If timber bulkheads are used, the minimum cross section shall be 200 mm x 200 mm {8 inches x 8 inches}. Wedges shall not be used to shim the supports. If shimming is necessary, the shimming shall be done by securely attached metal shims, or by grouting. Shimming shall not exceed 75 mm {3 inches}. The approach ramps shall be level with the scale deck for a distance of not less than one-half the length of the scale deck. The mechanical indicating elements shall be installed level and plumb and shall be rigidly mounted upon a concrete foundation.

The lever system and mechanical indicating elements of hopper scales shall be rigidly attached to non-yielding supports in such a manner as to prevent any loss in weight due to bending and distortion of the supports.

When a multiple beam type scale is used in proportioning materials, an over and under indicator shall be provided which will give positive visible evidence of the amount of any over and under weight. The indicator shall be so designed that the indicator will operate during the addition of the last 90 kg {200 pounds} of any weighing. The over-travel of the indicator shall be at least one-third of the loading travel. Indicators shall be enclosed against moisture and dust.

Over and under dials, and other indicators for weighing and measuring systems used in proportioning materials shall be grouped so that the smallest increment for each indicator can be accurately read from the point at which the proportioning operation is controlled.

The Contractor shall bear the expense of all service fees for testing and approving of "non-commercial devices." The cost of the equipment, labor and materials furnished by the Contractor to assist in the testing of weighing, measuring or metering devices will be considered as included in the Contract prices paid for the various Contract items of work requiring the weighing, measuring or metering and no separate payment will be made

therefor.

Whenever pay quantities of material are determined by weighing, the scales shall be operated by a weighmaster licensed in conformance with the requirements in the California Business and Professions Code, Division 5, Chapter 7. The Contractor shall furnish a Public weighmasters certificate or certified daily summary weigh sheets. A representative of the City of Vallejo may, at the discretion of the Water Distribution Superintendent, be present to witness the weighing and to check and compile the daily record of the scale weights.

When required by the Water Distribution Superintendent, the operator of each vehicle weighed shall obtain a weight or load slip from the weigher and deliver that slip to the Water Distribution Superintendent at the point of delivery of the material.

If material is shipped by rail, the car mass will be accepted provided that actual mass of material only will be paid for and not minimum car mass used for assessing freight tariff, and provided further that car mass will not be acceptable for material to be passed through mixing plants.

Vehicles used to haul material being paid for by mass shall be weighed empty daily and at additional times as the Water Distribution Superintendent may direct. Each vehicle shall bear a plainly legible identification mark. Vehicles may from time to time be required by the Water Distribution Superintendent to have the mass of the material to be paid for verified by weighing the empty and loaded vehicle on such other scales as the Water Distribution Superintendent may designate.

Materials which are specified for measurement by volume, i.e. cubic yard, cubic foot, etc., shall be measured completed as-constructed. Whenever earthwork is to be measured by volume, it shall be measured "in-situ," unless otherwise specified in the Contract documents. Materials "measured in the vehicle" shall be hauled in vehicles of such type and size that the actual contents may be readily and accurately determined. Unless all vehicles are of uniform capacity, each vehicle must bear a plainly legible identification mark indicating its water level capacity. Vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery. Loads hauled in vehicles not meeting the above requirements or loads of a quantity less than the capacity of the vehicle, measured after being leveled off as above provided, will be subject to rejection, and no compensation will be allowed for that material.

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

Quantities of material wasted or disposed of in a manner not called for under the Contract; or rejected loads of material, including material rejected after it has been placed by reason of the failure of the Contractor to conform to the provisions of the Contract; or material not unloaded from the transporting vehicle; or material placed outside of the lines indicated on the plans or established by the Water Distribution Superintendent; or material remaining on hand after completion of the work will not be paid for, and those quantities will be deducted from the final total quantities. No compensation will be allowed for hauling and disposing of rejected material.

The mass of all aggregate or other roadway material which is to be paid for on a mass basis, except imported borrow, imported topsoil, straw, fiber, aggregate sub bases, aggregate bases or aggregate for cement treated bases, will be determined by deducting from the mass of material, the mass of water in the material at the time of weighing in excess of 3 percent of the dry mass of the material. When imported borrow, imported topsoil or aggregate subbase is being paid for on a mass basis, the mass to be paid for will be determined by deducting from the mass of the material, the mass of water in the material at the time of weighing in excess of 6 percent of the dry mass of the material. When straw is being paid for on a mass basis, the mass to be paid for will be determined by deducting from the mass of straw, the mass of water in the straw at the time of weighing in excess of 15 percent of the dry mass of the straw. When fiber is being paid for on a mass basis, the mass of water in the fiber at the time of weighing shall not exceed 15 percent of the dry mass of the fiber. No deduction will be made for the mass of water in fiber. The percentage of water in the material shall be determined by California Test 226. The mass of aggregate base and aggregate for cement treated bases which are to be paid for on a mass basis, will be determined as provided in Section 26, "Aggregate Bases," and Section 27, "Cement Treated Bases," respectively.

The mass of water deducted as provided in this Section 9-1.01 will not be paid for.

Full compensation for all expense involved in conforming to the requirements specified in this Section 9-1.01 shall be considered as included in the unit prices paid for the materials being measured or weighed and no additional compensation will be allowed therefor.

9-1.015 FINAL PAY ITEMS

When an item of work is designated as (F) or (S-F) in the Water Distribution Superintendent's Estimate, the estimated quantity for that item of work shall be the final pay quantity, unless the dimensions of any portion of that item are revised by the Water Distribution Superintendent, or the item or any portion of the item is eliminated. If the dimensions of any portion of the item are revised, and the revisions result in an increase or decrease in the estimated quantity of that item of work, the final pay quantity for the item will be revised in the amount represented by the changes in the dimensions, except as otherwise provided for minor structures in Section 5.1-1.22, "Measurement." If a final pay item is eliminated, the estimated quantity for the item will be eliminated. If a portion of a final pay item is eliminated, the final pay quantity will be revised in the amount represented by the eliminated portion of the item of work.

The estimated quantity for each item of work designated as (F) or (S-F) in the Water Distribution Superintendent's Estimate shall be considered as approximate only, and no guarantee is made that the quantity which can be determined by computations, based on the details and dimensions shown on the plans, will equal the estimated quantity. No allowance will be made in the event that the quantity based on computations does not equal the estimated quantity.

In case of discrepancy between the quantity shown in the Water Distribution Superintendent's Estimate for a final pay item and the quantity or summation of quantities for the same item shown on the plans, payment will be based on the quantity shown in the Water Distribution Superintendent's Estimate.

Under no circumstances will Contractor be entitled to payment for any final pay quantity that is greater than the unit quantity price for the final pay quantity item set forth in the proposal form.

9-1.02 SCOPE OF PAYMENT

The Contractor shall accept the compensation provided in the Contract as full payment for furnishing all labor, materials, tools, equipment, and incidentals necessary to the completed work and for performing all work required under the Contract; also for loss or damage arising from the nature of the work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the acceptance by the Director and for all risks of every description connected with the prosecution of the work, also for all expenses incurred in consequence of the suspension or discontinuance of the work as provided in the Contract; and for completing the work according to the Contract Documents.

No compensation will be made in any case for loss of anticipated profits.

9-1.03 FORCE ACCOUNT PAYMENT

When extra work is to be paid for on a force account basis, the labor, materials and equipment used in the performance of that work shall be subject to the review and acceptance of the Water Distribution Superintendent and compensation will be determined as follows:

9-1.03A WORK PERFORMED BY CONTRACTOR

The Contractor will be paid the direct costs for labor, materials and equipment used in performing the work determined as hereinafter provided in Sections 9-1.03A (1), "Labor," 9-1.03A (2), "Materials," and 9-1.03A(3), "Equipment Rental," except where agreement has been reached to pay in conformance with the provisions in Section 9-1.03B, "Work Performed by Special Forces or Other Special Services."

To the total of the direct costs computed as provided in Sections 9-1.03A(1), "Labor," 9-1.03A(2), "Materials," and 9-1.03A(3), "Equipment Rental," there will be added a

markup of 33 percent to the cost of labor, 15 percent to the cost of materials and 15 percent to the equipment rental.

The above markups shall constitute full compensation for all overhead costs which shall be deemed to include all items of expense not specifically designated as cost or equipment rental in Sections 9-1.03A(1), "Labor," 9-1.03A(2), "Materials," and 9-1.03A(3), "Equipment Rental." The total payment made as provided above shall be deemed to be the actual cost of the work and shall constitute full compensation therefor.

When extra work to be paid for on a force account basis is performed by a subcontractor, approved in conformance with the provisions in Section 8-1.01, "Subcontracting," an additional markup of 5 percent will be added to the total cost of that extra work including all markups specified in this Section 9-1.03A. The additional 5 percent markup shall reimburse the Contractor for additional administrative costs, and no other additional payment will be made by reason of performance of the extra work by a subcontractor.

9-1.03A(1) LABOR

The Contractor will be paid the cost of labor for the workers (including foremen when authorized by the Water Distribution Superintendent), used in the actual and direct performance of the work. The cost of labor, whether the employer is the Contractor, subcontractor or other forces, will be the sum of the following:

9-1.03A(1A) ACTUAL WAGES

The actual wages paid shall include any employer payments to or on behalf of the workers for health and welfare, pension, vacation and similar purposes.

9-1.03A(1B) LABOR SURCHARGE

To the actual wages, as defined in Section 9-1.03A(1a), will be added a labor surcharge set forth in the Department of Transportation publication entitled Labor Surcharge And Equipment Rental Rates, which is in effect on the date upon which the work is accomplished. The labor surcharge shall constitute full compensation for all payments imposed by State and Federal laws and for all other payments made to, or on behalf of, the workers, other than actual wages as defined in Section 9-1.03A(1A) and subsistence and travel allowance as specified in Section 9-1.03A(1C).

9-1.03A(1C) SUBSISTENCE AND TRAVEL ALLOWANCE

The actual subsistence and travel allowance paid to the workers.

9-1.03A(2) MATERIALS

The City of Vallejo reserves the right to furnish any materials it deems advisable, and the Contractor shall have no claims for costs and markup on those materials.

Only materials furnished by the Contractor and necessarily used in the performance of the work will be paid for. The cost of those materials will be the cost to the purchaser,

whether Contractor, subcontractor or other forces, from the supplier thereof, except as the following are applicable:

9-1.03A(2A)

If a cash or trade discount by the actual supplier is offered or available to the purchaser, it shall be credited to the City of Vallejo notwithstanding the fact that the discount may not have been taken.

9-1.03A(2B)

If materials are procured by the purchaser by any method which is not a direct purchase from and a direct billing by the actual supplier to the purchaser, the cost of those materials shall be deemed to be the price paid to the actual supplier as determined by the Water Distribution Superintendent plus the actual costs, if any, incurred in the handling of the materials.

9-1.03A(2C)

If the materials are obtained from a supply or source owned wholly or in part by the purchaser, the cost of those materials shall not exceed the price paid by the purchaser for similar materials furnished from that source on Contract items or the current wholesale price for those materials delivered to the jobsite, whichever price is lower.

9-1.03A(2D)

If the cost of the materials is, in the opinion of the Water Distribution Superintendent, excessive, then the cost of the material shall be deemed to be the lowest current wholesale price at which the materials were available in the quantities concerned delivered to the jobsite, less any discounts as provided in Section 9-1.03A(2a).

9-1.03A(2E)

If the Contractor does not furnish satisfactory evidence of the cost of the materials from the actual supplier thereof within 60 days after the date of delivery of the material or within 15 days after acceptance of the Contract, whichever occurs first, the City of Vallejo reserves the right to establish the cost of the materials at the lowest current wholesale prices at which the materials were available in the quantities concerned delivered to the location of the work, less any discounts as provided in Section 9-1.03A(2a).

9-1.03A(3) EQUIPMENT RENTAL

The Contractor will be paid for the use of equipment at the rental rates listed for that equipment in the Department of Transportation publication entitled Labor Surcharge And Equipment Rental Rates, which is in effect on the date upon which the work is accomplished and which is a part of the Contract, regardless of ownership and any rental or other agreement, if they may exist, for the use of that equipment entered into by the

Contractor, except that for those pieces of equipment with a rental rate of \$10.00 per hour or less as listed in the Labor Surcharge And Equipment Rental Rates publication and which are rented from a local equipment agency, other than Contractor owned, the Contractor will be paid at the hourly or daily rate shown on the rental agency invoice or agreement for the time used on force account work as provided in Section 9-1.03A(3a), "Equipment on the Work." If a minimum equipment rental amount is required by the local equipment rental agency, the actual amount charged will be paid to the Contractor.

Equipment owned by the Contractor and already on the job site shall only be paid for actual hours of usage as documented on daily extra work reports. Equipment owned by the Contractor, required to perform force account work, and not already on the job site shall only be paid for actual hours of usage as documented on daily extra work reports and the cost of mobilization to bring to the job site. The Water Distribution Superintendent shall determine if equipment not on the job site is required to be mobilized to perform extra work.

If it is deemed necessary by the Water Distribution Superintendent to use equipment not listed in the Labor Surcharge And Equipment Rental Rates publication, a suitable rental rate for that equipment will be established by the Water Distribution Superintendent. The Contractor shall furnish all cost data which might assist the Water Distribution Superintendent in the establishment of the rental rate. If the rental rate established by the Water Distribution Superintendent is \$10.00 per hour or less, the provisions above concerning rental of equipment from a local equipment agency shall apply.

The rental rates paid as above provided shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance and all incidentals.

Operators of rented equipment will be paid for as provided in Section 9-1.03A(1), "Labor."

All equipment shall, in the opinion of the Water Distribution Superintendent, be in good working condition and suitable for the purpose for which the equipment is to be used.

Unless otherwise specified, manufacturer's ratings and manufacturer approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

Individual pieces of equipment or tools not listed in the Labor Surcharge and Equipment Rental Rate publication and having a replacement value of \$500 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefor.

Rental time will not be allowed while equipment is inoperative due to breakdowns.

9-1.03A(3A) EQUIPMENT ON THE WORK

The rental time to be paid for equipment on the work shall be the time the equipment is

in operation on the extra work being performed, and in addition, shall include the time required to move the equipment to the location of the extra work and return the equipment to the original location or to another location requiring no more time than that required to return the equipment to its original location, except that moving time will not be paid for if the equipment is used at the site of the extra work on other than the extra work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power, except that no payment will be made if the equipment is used at the site of the extra work on other than the extra work.

The following shall be used in computing the rental time of equipment on the work:

- A. When hourly rates are listed, less than 30 minutes of operation shall be considered to be 0.5-hour of operation.
- B. When daily rates are listed, less than 4 hours of operation shall be considered to be 0.5-day of operation.

9-1.03A(3B) EQUIPMENT NOT ON THE WORK

When extra work, other than work specifically designated as extra work in the plans and specifications, is to be paid for on a Force Account basis and the Water Distribution Superintendent determines that such extra work requires the Contractor to move on to the work equipment which could not reasonably have been expected to be needed in the performance of the contract, the Water Distribution Superintendent may authorize payment for the use of such equipment at equipment rental rates in excess of those listed as applicable for the use of such equipment subject to the following additional conditions:

- A. The Water Distribution Superintendent shall specifically approve the necessity for the use of particular equipment on such work.
- B. The Contractor shall establish to the satisfaction of the Water Distribution Superintendent that such equipment cannot be obtained from his/her normal equipment source or sources and those of his/her subcontractors.
- C. The Contractor shall establish to the satisfaction of the Water Distribution Superintendent that the proposed equipment rental rate for such equipment from his/her proposed source is reasonable and appropriate for the expected period of use.
- D. The Water Distribution Superintendent shall approve the equipment source and the equipment rental rate to be paid by the City of Vallejo before the Contractor begins work involving the use of said equipment.

For the use of equipment moved in on the work and used exclusively for extra work paid for on a force account basis, the Contractor will be paid the rental rates listed in the Department of Transportation publication entitled Labor Surcharge And Equipment Rental Rates, which is in effect on the date upon which the work is accomplished and

which is a part of the Contract, or determined as provided in Section 9-1.03A(3) and for the cost of transporting the equipment to the location of the work and its return to its original location, all in accordance with the following provisions:

- A. The original location of the equipment to be hauled to the location of the work shall be agreed to by the Water Distribution Superintendent in advance.
- B. The City of Vallejo will pay the costs of loading and unloading the equipment.
- C. The cost of transporting equipment in low bed trailers shall not exceed the hourly rates charged by established haulers.
- D. The rental period shall begin at the time the equipment is unloaded at the site of the extra work, shall include each hour that the equipment is actually used at the site of the extra work, excluding Saturdays, Sundays and legal holidays unless the equipment is used to perform the extra work on those days, and shall terminate at the end of the day on which the Water Distribution Superintendent directs the Contractor to discontinue the use of the equipment. The rental time to be paid for equipment not on the work shall be the time the equipment is actually in operation on the extra work being performed and in accordance with the following:

The hours to be paid for equipment which is operated less than 8 hours due to breakdowns, shall not exceed 8 hours less the number of hours the equipment is inoperative due to breakdowns.

When hourly rates are listed, less than 30 minutes of operation shall be considered to be 0.5-hour of operation.

When daily rates are listed, less than 4 hours of operation shall be considered to be 4 hours of operation. No payment will be made if the equipment is not used. If the equipment is used more than 4 hours of operation, payment will be made for one day.

- E. Should the Contractor desire the return of the equipment to a location other than its original location, the City of Vallejo will pay the cost of transportation in accordance with the above provisions, provided the payment shall not exceed the cost of moving the equipment to the work.
- F. Payment for transporting, and loading and unloading equipment, as above provided, will not be made if the equipment is used on the work in any other way than upon extra work paid for on a force account basis.

9-1.03A(3C) OWNER-OPERATED EQUIPMENT

When owner-operated equipment is used to perform extra work to be paid for on a force account basis, the Contractor will be paid for the equipment and operator, as follows:

- A. Payment for the equipment will be made in conformance with the provisions in Section 9-1.03A(3), "Equipment Rental."
- B. Payment for the cost of labor and subsistence or travel allowance will be made at the rates paid by the Contractor to other workers operating similar equipment already on the project or, in the absence of other workers operating similar equipment, at the rates for that labor established by collective bargaining agreements for the type of workers and location of the work, whether or not the owner-operator is actually covered by an agreement. A labor surcharge will be added to the cost of labor described herein, in conformance with the provisions in Section 9-1.03A(lb), "Labor Surcharge."
- C. To the direct cost of equipment rental and labor, computed as provided herein, will be added the markups for equipment rental and labor as provided in Section 9-1.03A, "Work Performed by Contractor."

9-1.03A(3D) DUMP TRUCK RENTAL

Dump truck rental shall conform to the provisions in Sections 9-1.03A(3), "Equipment Rental," 9-1.03A(3a), "Equipment on the Work," and 9-1.03A(3b), "Equipment not on the Work," except as follows:

Fully maintained and operated rental dump trucks used in the performance of extra work paid for on a force account basis will be paid for at the same hourly rate paid by the Contractor for use of fully maintained and operated rental dump trucks in performing Contract item work.

In the absence of Contract item work requiring dump truck rental, the Water Distribution Superintendent will establish an hourly rental rate to be paid. The Contractor shall provide the Water Distribution Superintendent with complete information on the hourly rental rates available for rental of fully maintained and operated dump trucks.

The provisions in Section 9-1.03A(1), "Labor," shall not apply to operators of rented dump trucks.

The rental rates listed for dump trucks in the Department of Transportation publication entitled Labor Surcharge And Equipment Rental Rates shall not apply.

To the total of the rental costs for fully maintained and operated dump trucks, including labor, there will be added a markup of 15 percent. An additional markup of 5 percent will be added by reason of performance of the work by a subcontractor. No separate markup will be made for labor.

The provisions in Section 9-1.03A(3c), "Owner-Operated Equipment," shall not apply to dump truck rentals.

9-1.03B WORK PERFORMED BY SPECIAL FORCES OR OTHER SPECIAL

SERVICES

When the Water Distribution Superintendent and the Contractor, by agreement, determine that a special service or an item of extra work cannot be performed by the forces of the Contractor or those of any of the Contractor's subcontractors, that service or extra work item may be performed by a specialist.

9-1.03C RECORDS

The Contractor and all subcontractors shall maintain records in such a manner as to provide a clear distinction between the direct costs of extra work paid and the costs of other operations.

From the above records, the Contractor shall furnish the Water Distribution Superintendent completed daily extra work reports, either on forms furnished by the City of Vallejo or on computerized facsimiles of the City of Vallejo's forms acceptable to the Water Distribution Superintendent, for each day's extra work to be paid for on a force account basis. The daily extra work reports shall itemize the materials used, and shall state the direct cost of labor and the charges for equipment rental, whether furnished by the Contractor, subcontractor or other forces, except for charges described in Section 9-1.03B, "Work Performed by Special Forces or Other Special Services." The daily extra work reports shall provide names, identifications, and classifications of all workers, the hourly rate of pay and hours worked, and also the size, type and identification number of equipment, and hours operated.

Material charges shall be substantiated by valid copies of vendor's invoices. The invoices shall be submitted with the daily extra work reports, or if not available, the invoices shall be submitted within 30 days after the submittal of the daily extra work report or 30 days after the date of delivery of the material, whichever occurs first. Contractor waives payment for material charges not substantiated by valid copies of vendor's invoices submitted within the times provided.

Daily extra work reports shall be signed by the Contractor or the Contractor's authorized representative, and shall be submitted to the City on the day the work is performed, or within 24 hours if authorized by the Water Distribution Superintendent. Daily extra work reports shall be signed by the designated representative of the City to acknowledge the labor hours, materials, and equipment used to perform the work. Signature by the City's representative does not constitute approval for payment. All daily extra work reports are subject to review and approval by the Water Distribution Superintendent for conformance to the Contract Documents prior to payment. The City reserves the right to make adjustments to the amount to be paid for extra work based upon daily extra work reports at any time prior to project acceptance, even if payment has been made under a progress payment. Contractor waives payment for that portion of Force Account work in which a daily extra work report has not been signed by the City's designated representative and/or submitted to the City within the time specified above.

The Water Distribution Superintendent will compare the Water Distribution Superintendent's records with the completed daily extra work reports furnished by the

Contractor and make any necessary adjustments. When these daily extra work reports are agreed upon and signed by both parties, the reports shall become the basis of payment for the work performed, but shall not preclude subsequent adjustment based on a later audit by the City of Vallejo.

The Contractor's and all subcontractors' records pertaining to the Project shall be open to inspection or audit by representatives of the City of Vallejo, during the life of the Contract and for a period of not less than 3 years after the date of acceptance thereof, and the Contractor and all subcontractors shall retain those records for that period. Where payment for materials or labor is based on the cost thereof to forces other than the Contractor, the Contractor shall make every reasonable effort to ensure that the cost records of those other forces will be open to inspection and audit by representatives of the City of Vallejo on the same terms and conditions as the cost records of the Contractor. If an audit is to be commenced more than 60 days after the acceptance date of the Contract, the Contractor will be given a reasonable notice of the time when the audit is to begin.

9-1.03D PAYMENT

Payment as provided in Sections 9-1.03A, "Work Performed by Contractor," and 9-1.03B, "Work Performed by Special Forces or Other Special Services," shall constitute full compensation to the Contractor for performance of work paid for on a force account basis and no additional compensation will be allowed therefor. The payment will be made in conformance with the provisions in Section 9-1.06, "Partial Payments."

The Water Distribution Superintendent's receipt of a proposed progress schedule and monthly updated progress schedules, all in strict compliance with these Contract Documents shall be conditions precedent to the Water Distribution Superintendents acceptance of the Contractor's periodic pay requests and/or the City of Vallejo's obligation to pay Contractor.

9-1.04 (BLANK)

9-1.05 STOP NOTICES

The City of Vallejo, may at its option and at any time retain out of any amounts due the Contractor, sums sufficient to cover claims filed pursuant to Section 3179 et seq. of the Civil Code. In cases where the contractor chooses to Bond around the Stop Notice, the Bond shall be of a form approved by the City.

9-1.06 PARTIAL PAYMENTS

The City of Vallejo, once in each month, shall cause an estimate in writing to be made by the Water Distribution Superintendent. The estimate shall include the total amount of work done and acceptable materials furnished, provided the acceptable materials are listed as eligible for partial payment as materials in the special provisions and are furnished and delivered by the Contractor on the ground and not used or are furnished

and stored for use on the Contract, if the storage is within the City of Vallejo and the Contractor furnishes evidence satisfactory to the Water Distribution Superintendent that the materials are stored subject to or under the control of the City of Vallejo, to the time of the estimate, and the value thereof. The estimate shall also include any amounts payable for mobilization. Daily extra work reports furnished by the Contractor less than 5 calendar days, not including Saturdays, Sundays and legal holidays, prior to the preparation of the monthly progress estimate shall not be eligible for payment until the following month's estimate.

The amount of any material to be considered in making an estimate will in no case exceed the amount thereof which has been reported by the Contractor to the Water Distribution Superintendent on City of Vallejo-furnished forms properly filled out and executed, including accompanying documentation as therein required, less the amount of the material incorporated in the work to the time of the estimate. Only materials to be incorporated in the work will be considered. The estimated value of the material established by the Water Distribution Superintendent will in no case exceed the Contract price for the item of work for which the material is furnished.

Unless otherwise approved by the Water Distribution Superintendent in writing, Contractor shall submit to Water Distribution Superintendent on or before the tenth (10th) day of the month, an itemized application for payment for the cost of the work in permanent place, which has been completed in strict accordance with the Contract Documents as of the last day of the preceding month, less amounts previously paid. The application for payment shall be prepared in a form acceptable to Water Distribution Superintendent, and shall contain itemized amounts in accordance with the Contract Documents. The applications for payment shall not include requests for payment on account of changes which have not been authorized by Change Orders, or for amounts Contractor does not intend to pay a subcontractor because of a dispute or other reason.

If requested by the City of Vallejo, an application for payment shall be accompanied by a summary showing payment that will be made to subcontractors covered by such application, and unconditional waivers and releases of claims and stop notices, from each subcontractor listed in the preceding application for payment covering sums disbursed pursuant to that preceding application for payment.

Contractor warrants that upon submittal of an application for payment, all work has been performed in strict compliance with the Contract Documents, and all work for which certificates of payment have been previously issued and payment has been received from City of Vallejo, shall be free and clear of all claims, stop notices, security interests, and encumbrances in favor of Contractor, subcontractors or other persons or firms entitled to make claims by reason of having provided labor, materials, or equipment related to the work.

Payment of all, or any part, of an application for payment may be withheld, a certificate of payment may be withheld, all or part of a previous certificate for payment may be nullified and that amount withheld from a current certificate for payment, or the City of Vallejo may withhold from payment, on account of any of the following:

Defective work not remedied;

Third-party claims against Contractor or City of Vallejo arising from the acts or omissions of Contractor or subcontractors;

Stop notices;

Failure of Contractor to make timely payments due to subcontractors for material or labor;

A reasonable doubt that the work can be completed for the balance of the Contract price then unpaid;

Damage to the City of Vallejo or others for which Contractor is responsible;

Reasonable evidence that the work cannot be completed within the Contract time, and the unpaid balance of the Contract price would not be adequate to complete the work and cover City of Vallejo's damages for the anticipated delay;

Failure of Contractor to maintain, update, and submit record documents;

Failure of Contractor to submit schedules or their updates as required by the Contract Documents;

Performance of the work by Contractor without properly processed shop drawings;

Liquidated damages assessed;

Any other failure of Contractor to perform its obligations under the Contract Documents.

By resolution of the City of Vallejo's City Council, a fund has been established, money appropriated in the current budget, and assigned to the account(s) which is/are the sole source(s) of funds available for payment of the Contract price. Contractor understands and agrees that Contractor will be paid only from this special fund and if for any reason this fund is not sufficient to pay Contractor, Contractor will not be entitled to payment. The availability of money in this fund, and City of Vallejo's ability to draw from this fund, are conditions precedent to City of Vallejo's obligation to make payments to Contractor.

Within thirty (30) days of receipt of an approved certificate for payment, properly executed by the Contractor, City of Vallejo's Water Distribution Superintendent and Director, City of Vallejo agrees to pay Contractor, subject to all of the terms and conditions of these Contract Documents, an amount equal to ninety five percent (95%) of the sum of the following (less any amounts withheld as permitted by the Contract Documents):

Cost of the work in permanent place as of the end of the preceding month as set forth and approved on the certificate for payment; and

Less amounts previously paid.

9-1.065 PAYMENT OF WITHHELD FUNDS

Upon the Contractor's request, the City of Vallejo will make payment of funds withheld from progress payments to ensure performance of the Contract if the Contractor deposits in escrow with the City of Vallejo, or with a bank acceptable to the City of Vallejo, securities equivalent to the amount withheld. The Contractor shall be beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon. Upon satisfactory completion of the Contract, the securities shall be returned to the Contractor.

Alternatively, upon the Contractor's request, the City of Vallejo will make payment of retentions earned directly to the escrow agent. The Contractor may direct the investment of the payments into securities, and the Contractor shall receive the interest earned on the investments upon the same terms provided for securities deposited by the Contractor. Upon satisfactory completion of the Contract, the Contractor shall receive from the escrow agent all securities, interest and payments received by the escrow agent from the City of Vallejo.

Alternatively, and subject to the acceptance by the City of Vallejo, the payment of retentions earned may be deposited directly with a person licensed under Division 6 (commencing with Section 17000) of the Financial Code as the escrow agent. Upon written request of an escrow agent that has not been approved by the City of Vallejo under subdivision (c) of Section 10263 of the Public Contract Code, the City of Vallejo will provide written notice to that escrow agent within 10 business days of receipt of the request indicating the reason or reasons for not approving that escrow agent. The payments will be deposited in a trust account with a Federally chartered bank or savings association within 24 hours of receipt by the escrow agent. The Contractor shall not place any retentions with the escrow agent in excess of the coverage provided to that escrow agent pursuant to subdivision (b) of Section 17314 of the Financial Code. In all respects not inconsistent with subdivision (c) of Section 10263 of the Public Contract Code, the remaining provisions of Section 10263 of the Public Contract Code shall apply to escrow agents acting pursuant to subdivision (c) of Section 10263 of the Public Contract Code.

Securities eligible for investment shall include those listed in Section 16430 of the Government Code, bank or savings and loan certificates of deposit, interest-bearing demand deposit accounts, standby letters of credit or any other security mutually agreed to by the Contractor and the City of Vallejo.

The escrow agreement used pursuant to this Section 9-1.065 shall be substantially similar to the "Escrow Agreement for Security Deposits In Lieu of Retention" in Section 10263 of the Public Contract Code, deemed as incorporated herein by reference.

The Contractor shall obtain the written consent of the surety to the agreement.

9-1.07 PAYMENT AFTER ACCEPTANCE

After the work has been accepted in writing by the Director, as provided in Section 7-1.17,

"Acceptance of Contract," payments will be made to the Contractor subject to the provisions in this Section 9-1.07.

9-1.07A PAYMENT PRIOR TO PROPOSED FINAL ESTIMATE

After acceptance of the work by the Director, the Water Distribution Superintendent will make an estimate of the total amount of work done under the Contract and the City of Vallejo will make a final monthly payment pending issuance of the proposed final estimate. The City of Vallejo will pay the balance thereon found to be due after deduction of all previous payments, all amounts to be kept or retained under the provisions of the Contract and those further amounts that the Water Distribution Superintendent determines to be necessary pending issuance of the proposed final estimate and payment thereon.

9-1.07B FINAL PAYMENT

After written acceptance of the Work as complete by the Director, or the Director's designated representative, the Water Distribution Superintendent will prepare and issue to the Contractor a proposed final estimate in writing of the total amount payable to the Contractor, including therein an itemization of the total amount, segregated as to Contract item quantities, extra work and any other basis for payment, and shall also show therein all deductions made or to be made for prior payments and amounts to be kept or retained under the provisions of the Contract. All prior estimates and payments shall be subject to correction in the proposed final estimate.

The Contractor shall submit written approval of the proposed final estimate or a written statement of all claims arising under or by virtue of the Contract so that the Water Distribution Superintendent receives the written approval or statement of claims no later than close of business of the thirtieth day after receiving the proposed final estimate. If the thirtieth day falls on a Saturday, Sunday or legal holiday, then receipt of the written approval or statement of claims by the Water Distribution Superintendent shall not be later than close of business of the next business day. No claim will be considered that was not included in the written statement of claims, nor will any claim be allowed as to which a notice or protest is required unless the Contractor has strictly complied with the notice or protest requirements of the Contract Documents.

On the Contractor's approval, or if the Contractor files no claim within the specified period of 30 days, the Water Distribution Superintendent will issue a final estimate in writing in accordance with the proposed final estimate submitted to the Contractor. The City of Vallejo will pay any remaining moneys unpaid and found to be due in the proposed final estimate 35 days after the recordation of the Notice of Completion in the records of the Solano County Recorder's Office as per Section 7-1.17, "Acceptance of Contract". That final estimate and payment thereon shall be conclusive and binding against Contractor on all questions relating to the amount of work done and the compensation payable therefor.

If the Contractor within the specified period of 30 days files claims, the Water Distribution

Superintendent will issue a semifinal estimate in accordance with the proposed final estimate submitted to the Contractor and within 30 days thereafter the City of Vallejo will pay the sum so found to be due. The semifinal estimate and payment thereon shall be conclusive and binding against the Contractor on all questions relating to the amount of work done and the compensation payable therefor, except insofar as affected by the claims filed within the time and in the manner required hereunder.

9-1.07C CLAIMS

- A. General. A "Claim" means a written demand or written assertion by Contractor to adjust, alter, modify, or otherwise change the Contract price or the Contract time, or both. All claims filed hereunder shall strictly comply with all requirements of the Contract Documents.

In order to qualify as a "Claim," the written demand must state that it is a claim submitted under Section 9-1.07C of the Contract Documents. A letter, voucher, invoice, payment application, or other routine or authorized form of request for payment is not a Claim under the Contract Documents. If such a request is disputed as to liability or amount, then the disputed portion of the submission may be converted to a Claim under the Contract Documents by submitting a separate claim in compliance with claim submission requirements.

A Claim must be stated with specificity, including identification of the event or occurrence giving rise to the Claim, the date of the event, and the asserted affect on the Contract price and the Contract time, if any. The Claim shall include adequate supporting data. Adequate supporting data for a Claim for an adjustment of the Contract time shall include scheduling data demonstrating the impact of the event on the controlling operation and completion of the Project. Adequate supporting data for a Claim for an adjustment in the Contract price shall include a detailed cost breakdown of items included within the Claim and documentation supporting each item of cost.

Notwithstanding and pending the resolution of any Claim, the Contractor shall diligently prosecute the disputed work to final completion of the work. Contractor shall impose the Claim notice and documentation requirements in this Contract on Contractor's subcontractors of all tiers, and require them to submit to the Contractor all Claims against Contractor and/or City within the times and containing the documentation required by these provisions. The Claim notice and documentation procedure described in these provisions applies to all claims and disputes arising under the Contract Documents, whether or not specifically referred to in any specific portion of the Contract.

If additional information or details are required by the Water Distribution Superintendent to determine the basis and amount of any Claims, the Contractor shall furnish additional information or details so that the additional information or details are received by the Water Distribution Superintendent no later than the fifteenth day after receipt of the written request from the Water Distribution Superintendent. If the fifteenth day falls on a Saturday, Sunday or legal holiday,

then receipt of the information or details by the Water Distribution Superintendent shall not be later than close of business of the next business day. Contractor understands and agrees that failure to submit the information and details to the Water Distribution Superintendent within the time specified shall be result in Contractor waiving that Claim.

The Contractor and all subcontractors shall keep full and complete records of the costs and additional time incurred for any work for which a Claim for additional compensation is made. The Water Distribution Superintendent or any designated claim investigator or auditor shall have access to those records and any other records as may be required by the Water Distribution Superintendent to determine the facts or contentions involved in the claims. Contractor agrees that failure to permit access to those records waives Contractor's Claims.

The City of Vallejo, or its authorized representatives, shall have access, upon reasonable notice, during normal business hours, to Contractor and subcontractors' books, documents and accounting records, including but not limited to, bid worksheets, bids, subcontractor bids and proposals, estimates, cost accounting data, accounting records, payroll records, time sheets, canceled checks, profit and loss statements, balance sheets, project correspondence including but not limited to all correspondence between Contractor and its sureties and subcontractors/vendors, project files, scheduling information, and other records of the Contractor and all subcontractors directly or indirectly pertinent to the work, original as well as change and claimed extra work, to verify and evaluate the accuracy of cost and pricing data submitted with any change order, prospective or completed, or any claim for which additional compensation has been requested or claim has been tendered. Such access shall include the right to examine and audit such records, and make excerpts, transcriptions, and photocopies at City of Vallejo's cost.

The parties agree that in the event Contractor or any subcontractor fails to comply with this section, it would be difficult for the City of Vallejo to determine its actual damages; therefore, Contractor agrees to pay City of Vallejo, as liquidated damages, the sum of Two hundred fifty dollars (\$250.00), which Contractor agrees is reasonable under the circumstances, for each and every calendar day which Contractor or a subcontractor fails or refuses to provide the City of Vallejo, access to the materials specified in this section.

B. Disputes

Contract Interpretation Disputes: Should it appear to the Contractor that the work to be performed or any of the matters relative to the Contract Documents are not satisfactorily detailed or explained therein, or should any questions arise as to the meaning or intent of the Contract Documents, the Contractor shall give written notice to the City of Vallejo. The Contractor shall bear all costs incurred in the giving of such notice.

All issues regarding the interpretation of the plans or specifications shall be referred to the City for interpretation. The City shall have the right but not the obligation to affirm or disaffirm any interpretation of the plans or specifications, which affirmation or disaffirmance shall be final. If the Contractor should disagree with the City's decision, the Contractor's sole and exclusive remedy is to file a Claim in accordance with these provisions.

Work Disputes: Should any dispute arise under the Contract Documents respecting the true value of any work performed, the implementation of the Work required by the Contract Documents, any Work omitted, any extra work which the Contractor may be required to perform or time extensions, respecting the size of any payment to the Contractor during the performance of the Contract Documents, or of compliance with Contract Documents procedures, the dispute shall be decided by the City of Vallejo and its decision shall be final and conclusive. If the Contractor disagrees with the City's decision, the Contractor's sole and exclusive remedy is to file a claim in accordance with these provisions.

C. Delays. As used herein, the following terms shall have the following meanings:

"Excusable Delay" means any delay of the completion of the Project beyond the expiration of the Contract time caused by conditions beyond the control and without the fault or negligence of the Contractor such as strikes, embargoes, fire, unavoidable casualties, unusual delays in transportation, national emergency, and stormy and inclement weather conditions in which the work cannot continue. The financial inability of the Contractor or any subcontractor and default of any subcontractor, without limitation, shall not be deemed conditions beyond the Contractor's control. An Excusable Delay may entitle the Contractor to an adjustment in the Contract time.

"Compensable Delay" means any delay of the completion of the work beyond the expiration date of the Contract time caused by the gross negligence or willful acts of the City of Vallejo, and which delay is unreasonable under the circumstances involved, and not within the contemplation of the parties. A Compensable Delay may entitle the Contractor to an extension of the Contract time and/or Contract price. Except as provided herein, the Contractor shall have no claim for damage or compensation for any delay, interruption, hindrance, or disruption.

"Unexcusable Delay" means any delay of the completion of the Project beyond the expiration of the Contract time resulting from causes other than those listed above. An Unexcusable Delay shall not entitle the Contractor to an extension of the Contract time or an adjustment of the Contract price.

The Contractor may make a Claim for an extension of the Contract time, for an Excusable Delay or a Compensable Delay, subject to the following:

1. If an Excusable Delay and a Compensable Delay occur concurrently, the maximum extension of the Contract time shall be the number of days from the commencement of the first delay to the cessation of the delay which

ends last.

2. If an Unexcusable Delay occurs concurrently with either an Excusable Delay or a Compensable Delay, the maximum extension of the Contract time shall be the number of days, if any, by which the Excusable Delay or the Compensable Delay exceeds the Unexcusable Delay.
3. If an Unexcusable Delay occurs concurrently with both an Excusable Delay and a Compensable Delay, the maximum extension in the Contract time shall be the number of days, if any, by which the number of days determined pursuant to Subparagraph (a) exceeds the number of days of the Unexcusable Delay.
4. For a Compensable Delay, the Contractor shall only be entitled to an adjustment in the Contract price in an amount equal to the actual additional labor costs, material costs, and unavoidable equipment costs incurred by the Contractor as a result of the Compensable Delay, plus the actual additional wages or salaries and fringe benefits and payroll taxes of supervisory and administrative personnel necessary and directly employed at the Project site for the supervision of the work during the period of Compensable Delay. Except as provided herein, the Contractor shall have no claim for damage or compensation for any delay, interruption, hindrance, or disruption. There shall be no Compensable Delay unless the event or occurrence giving rise to the Compensable Delay extends the actual completion of the Project past the Contract time.

The parties agree that the City of Vallejo's exercise of its right to order changes in the work, regardless of the extent and number of changes, or to suspend the work, is within the contemplation of the parties and shall not be the basis for any Claim for Compensable Delay. The rights of the Contractor to adjustments of the Contract time and the Contract sum, based on changes ordered in the work or suspension of the work, shall be governed by this provision.

Notwithstanding the making of any Claim or the existence of any dispute regarding any Claim, Contractor shall not cause any delay, cessation, or termination in or of Contractor's performance of the work, but shall diligently proceed with performance of the work in accordance with the Contract Documents.

Contractor agrees that the daily Contractor Delay Damages as set forth in the Proposal Form shall be full compensation to Contractor, all subcontractors and anyone for whom they may be legally responsible, for each day of delay that may be caused by City of Vallejo or anyone for whom City of Vallejo is legally responsible, including but not limited to, extended field costs, extended home overhead costs, impact, inefficiency, unabsorbed home office overhead, underabsorbed home office overhead, hindrance, disruption or any other damage arising from delay, no matter how characterized and regardless of the cause, extent or duration of the delay. Inclusion of Contractor Delay Damages within the

Proposal Form is solely for the purpose of determining the low bidder and establishing the City of Vallejo's maximum daily liability as a result of City of Vallejo delays to Contractor, if any, and City of Vallejo has no obligation to pay any daily Contractor Delay Damages except as provided for in these Contract Documents for Compensable Delays. In the event that City of Vallejo becomes liable to Contractor for compensable delays, City of Vallejo agrees to pay Contractor the daily Contractor Delay Damages set forth in the Proposal Form or Contractor's actual daily delay damages, whichever is less, for each day of Compensable Delay as provided for by these Contract Documents.

- D. Claim Procedures. Should any clarification, determination, action or inaction by the City, Work, or any event, in the opinion of the Contractor, exceed the requirements of or not comply with the Contract Documents, or otherwise result in the Contractor seeking additional compensation in time or money for any reason (collectively "Disputed Work"), then the Contractor and the City shall make good faith attempts to resolve informally any and all such issues and/or disputes. The Contractor must file a written Notice of Potential Claim with the City on the form provided in the Contract Documents before commencing the Disputed Work, or within seven (7) calendar days after Contractor's first knowledge of the Disputed Work, whichever is earlier, stating clearly and in detail its objection and reasons for contending the Work or interpretation is outside the requirements of the Contract Documents. If a written Notice of Potential Claim is not filed within this time period, or if the Contractor proceeds with the Disputed Work without first having filed the notice required by these provisions, the Contractor shall waive any rights to further claim on the specific issue.

The City will review the Contractor's timely Notice of Potential Claim and provide a decision. The City may require supplemental information from the Contractor to clarify that contained in the Notice of Potential Claim. If, after receiving the City's decision, the Contractor disagrees with the decision, the Contractor shall so notify the City, in writing, within seven (7) calendar days after receiving the decision, that a formal Claim will be filed. The Contractor shall submit the Claim in the form specified herein and all arguments, justification, costs or estimates, schedule analyses, and detailed documentation supporting the Contractor's position within thirty (30) calendar days after receiving the City's decision on the Notice of Potential Claim. The Contractor's failure to furnish notification within seven (7) calendar days and all justifying documentation within thirty (30) calendar days will result in the Contractor waiving all rights to the subject Claim.

If Disputed Work persists longer than thirty (30) calendar days after receiving the City's decision on the Notice of Potential Claim, then the Contractor shall, every thirty (30) calendar days until the Disputed Work ceases, submit to the City a document titled "Claim Update" which shall update and quantify all elements of the Claim as completely as possible. The Contractor's failure to submit a Claim Update or to quantify all costs and impacts every thirty (30) days shall result waiver of that portion of the Claim for that thirty (30) day period. Claims or Claim Updates stating that damages will be determined at a later date shall not comply with the requirements of these provisions and shall result in the Contractor waiving such

Claim(s) and/or Claim Updates.

All Claims must be submitted to Water Distribution Superintendent before the issuance of the final estimate. Contractor hereby expressly waives all Claims not submitted, in complete and proper form, on or before the date of issuance of the final estimate.

Upon receipt of the Contractor's formal Claim including all arguments, justifications, costs or estimates, schedule analyses, and documentation supporting the Contractor's position as previously stipulated, the City or its designate will review the Claim and render a final determination. If the Contractor's Claims at project completion total less than \$375,000, then claims resolution shall proceed in the manner prescribed by Article 1.5, Chapter 1, Part 3 of Division 2 of the California Public Contract Code.

Claims shall be calculated in the same manner as extra work using the procedures set forth in Section 9-1.03 "Force Account Payment." This method applies in all cases of Claims, regardless of type, whether in negotiation, arbitration, litigation, and even applies in the event of fault, negligence, strict liability, or tort claims of all kinds, including strict liability or negligence. No other costs arising out of or connected to with the performance of Claims, of any nature, may be recovered by the Contractor. Except where provided by law, or elsewhere in these Contract Documents (if applicable), the City shall not be liable for special or consequential damages, and Claims shall not include special or consequential damages. Contractor shall be limited in its recovery on Claims to the calculations set forth in Section 9-1.03 of these provisions.

E. Claim Format. The Contractor shall submit the Claim justification in the following format:

1. Cover letter and certification of the accuracy of the contents of the Claim;
2. Summary of Claim including underlying facts, entitlement, quantum calculations and Contract Document provisions supporting relief;
3. List of documents relating to Claim including plans, specifications, clarifications/requests for information, schedules and others;
4. Chronology of events and correspondence;
5. Analysis of Claim merit;
6. Analysis of Claim costs;
7. Attached supporting documents referenced in Item 3.) above.

F. Exclusive Remedy. The Contractors performance of its duties and obligations

specified in these provisions and submission of a Claim as provided in these provisions is the Contractor's sole and exclusive remedy for the payment of money, extension of time, adjustment or interpretation of Contract Documents terms or other contractual or tort relief arising from the Contract Documents. This exclusive remedy and the limitation of liability (expressed herein and elsewhere throughout the Contract Documents) apply notwithstanding the completion, termination, suspension, cancellation, breach or rescission of the Work or the Contract Documents, negligence or strict liability by the City of Vallejo, its representatives, consultants or agents, or the transfer of the Work or the Project to the City for any reason whatsoever. The Contractor waives all claims of waiver, estoppel, release, bar, or any other type of excuse for non-compliance with the Claim submission requirements. Compliance with the notice and Claim submission procedures described in these provisions is a condition precedent to the right to commence litigation, file a Government Code Claim, or commence any other legal action. No Claim or issues not raised in a timely protest and timely Claim submitted under these provisions may be asserted in any Government Code Claim, subsequent litigation, or legal action. The City of Vallejo shall not have deemed to waive any provision under this Section, if at the City's sole discretion, a Claim is accepted in a manner not in accord with this Section.

- G. Mediation. All Claims not subject to the Claim resolution procedures set forth in these provisions shall, as a condition precedent to litigation thereon, first be mediated. Mediation shall be non-binding and utilize the services of a mediator mutually acceptable to the parties, and, if the parties cannot agree, a mediator selected by the American Arbitrator Association from its panel of approved mediators trained in construction industry mediation. All statutes of limitation shall be tolled from the date of the demand for mediation until a date two weeks following the mediation's conclusion. All unresolved claims shall be submitted to the same mediator. The cost of mediation shall be equally shared.

9-1.075 FALSE CLAIMS

California Penal Code section 72, provides that any person who presents for payment with intent to defraud any district board or officer, any false or fraudulent claim, bill, account, voucher, or writing, is punishable by fines not exceeding ten thousand dollars (\$10,000.00) and/or imprisonment in the state prison.

Government Code sections 12650, et seq., pertains to civil penalties that may be recovered from persons (including corporations, etc.) for presenting a false claim for payment or approval, presents a false record or statement to get a false claim paid or approved, or other acts, to any officer or employee of any political subdivision of the State of California. Any person or corporation violating the provisions of Government Code sections 12650, et seq., shall be liable for three times the amount of the damages of the political subdivision, plus a civil penalty, plus costs.

All Claims by Contractor, shall include the following certification, properly completed and executed by Contractor or an officer of Contractor:

I, _____, BEING THE _____ (MUST BE AN OFFICER) OF _____ (CONTRACTOR), DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA, AND DO PERSONALLY CERTIFY AND ATTEST THAT: I HAVE THOROUGHLY REVIEWED THE ATTACHED CLAIM FOR ADDITIONAL COMPENSATION AND/OR EXTENSION OF TIME, AND KNOW ITS CONTENTS, AND SAID CLAIM IS TRUTHFUL AND ACCURATE; THAT THE AMOUNT REQUESTED ACCURATELY REFLECTS THE CONTRACT ADJUSTMENT FOR WHICH THE OWNER IS LIABLE; AND, FURTHER, THAT I AM FAMILIAR WITH CALIFORNIA PENAL CODE SECTION 72 AND CALIFORNIA GOVERNMENT CODE SECTION 12650, ET SEQ, PERTAINING TO FALSE CLAIMS, AND FURTHER KNOW AND UNDERSTAND THAT SUBMISSION OR CERTIFICATION OF A FALSE CLAIM MAY LEAD TO FINES, IMPRISONMENT AND/OR OTHER SEVERE LEGAL CONSEQUENCES.

Contractor agrees that submission of a Claim, in strict conformance with all of the requirements of this Contract, and rejection of all or part of said Claim by City of Vallejo, is a condition precedent to any action by Contractor against City of Vallejo, including but not limited to, the submission of a claim pursuant to Government Code section 900, et seq., and the filing of a lawsuit.

Any claim for overhead type expenses or costs, in addition to being certified as stated above, shall be supported by an audit report of an independent Certified Public Accountant provided by Contractor with the claim.

Contractor agrees that any costs or expenses incurred by the City of Vallejo in reviewing or auditing any claims that are not supported by the Contractor's cost accounting or other records, or the Contract, shall be deemed to be damages incurred by the City of Vallejo within the meaning of the California False Claims Act.

Upon final determination of the claims, the Water Distribution Superintendent will then make and issue the Water Distribution Superintendent's final estimate in writing and within 30 days thereafter the City of Vallejo will pay the entire sum, if any, found due thereon. That final estimate shall be conclusive and binding against Contractor on all questions relating to the amount of work done and the compensation payable therefor.

9-1.08 (BLANK)

9-1.09 CLERICAL ERRORS

Notwithstanding the provisions in Section 9-1.07, "Payment After Acceptance," for a period of 3 years after acceptance of the work, all estimates and payments made pursuant to Section 9-1.07, including the final estimate and payment, shall be subject to correction and adjustment for clerical errors in the calculations involved in the determination of quantities and payments. The Contractor and the City of Vallejo agree to pay to the other any sum due under the provisions of this Section 9-1.09, provided, however, if the total sum to be paid is less than \$200, no payment shall be made.

9-1.10 (BLANK)

9-1.11 CONTRACTOR NOT AN AGENT OF THE CITY OF VALLEJO

The right of general supervision shall not make the Contractor an agent of the City of Vallejo, and the liability of the Contractor for all damages to persons or to public or private property arising from the performance of the work shall not be lessened because of such general supervision.

9-1.12 THIRD-PARTY CLAIMS

The Contractor shall be responsible for all third-party claims, and for costs or injuries incurred by a third party which result from the operations of the Contractor, or its performance under the Contract.

9-1.13 GUARANTEE

Should any failure of the work occur within a period of one year after recordation of the notice of completion of the project or portions thereof, which can be attributed to faulty materials, poor workmanship, or defective equipment, the Contractor shall promptly make the needed repairs at Contractor's expense.

The City of Vallejo is hereby authorized to make such repairs if the Contractor fails to make or undertake with due diligence the aforesaid repairs within ten (10) days after Contractor is given written notice of such failure and without notice to the surety provided, however, that in case of emergency where, in the opinion of the City of Vallejo, delay would cause serious loss or damages, or a serious hazard to the public, the repairs may be made or lights, signs, and barricades erected, without prior notice to the Contractor or surety, and the Contractor shall pay the entire costs thereof.

9-1.14 MISCELLANEOUS PROVISIONS

This Contract shall bind and inure to the heirs, devisees, assignees, and successors in interest of Contractor, and to the successors in interest of City of Vallejo, in the same manner as if such parties had been expressly named herein.

This Contract shall be governed by the laws of the State of California.

If any one or more of the provisions contained in the Contract should be invalid, illegal, or unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions contained herein shall not in any way be affected or impaired thereby.

This Contract constitutes the full and complete understanding of the parties, and supersedes any previous agreements or understandings, oral or written, with respect to the subject matter hereof. The Contract may only be modified by a written instrument signed by both parties.

Contractor hereby assigns to City of Vallejo all its first-tier subcontracts now or hereafter

entered into by Contractor for performance of any part of the work. The assignment will be effective upon acceptance by City of Vallejo in writing, and only as to those subcontracts which City of Vallejo designates in writing. Such assignment is part of the consideration to City of Vallejo for entering into the Contract with Contractor, and may not be withdrawn.

The provisions of the Contract Documents shall be included in all subcontracts.

9-1.15 PUBLIC CONTRACT CODE SECTION 20104, ET SEQ.

Public Contract Code section 20104, et seq., requires that the following language be set forth in the specifications:

§ 20104. Application of article; provisions included in plans and specifications

- (i) (1) This article applies to all public works claims of three hundred seventy-five thousand dollars (\$375,000) or less which arise between a contractor and a local agency.
- (2) This article shall not apply to any claims resulting from a contract between a contractor and a public agency when the public agency has elected to resolve any disputes pursuant to Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2.
- (ii) (1) "Public work" has the same meaning as in Sections 3100 and 3106 of the Civil Code, except that "public work" does not include any work or improvement contracted for by the state or the Regents of the University of California.
- (2) "Claim" means a separate demand by the contractor for (A) a time extension, (B) payment of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public work and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (c) an amount the payment of which is disputed by the local agency.
- (iii) The provisions of this article or a summary thereof shall be set forth in the plans or specification for any work which may give rise to a claim under this article.
- (iv) This article applies only to contracts entered into on or after January 1, 1991.

§ 20104.2. Claims; requirements; tort claims excluded

For any claim subject to this article, the following requirements apply:

- (v) The claim shall be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment. Nothing in

this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims.

- (vi)
 - (1) For claims of less than fifty thousand dollars (\$50,000), the local agency shall respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant.
 - (2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.
 - (3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the claimant in producing the additional information, whichever is greater.
- (vii)
 - (1) For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the local agency shall respond in writing to all written claims within 60 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant.
 - (2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.
 - (3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the claimant in producing the additional information or requested documentation, whichever is greater.
- (viii) If the claimant disputes the local agency's written response, or the local agency fails to respond within the time prescribed, the claimant may so notify the local agency, in writing, either within 15 days of receipt of the local agency's response or within 15 days of the local agency's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the local agency shall schedule a meet and confer conference within 30 days for settlement of the dispute.
- (ix) Following the meet and confer conference, if the claim or any portion remains in dispute, the claimant may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the

running of the period of time within which a claim must be filed shall be tolled from the time the claimant submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

- (x) This article does not apply to tort claims and nothing in this article is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.

§ 20104.4. Civil action procedures; mediation and arbitration; trial de novo; witnesses

The following procedures are established for all civil actions filed to resolve claims subject to this article:

- (i) Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.
- (ii)
 - (1) If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.
 - (2) Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this article shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds.
 - (3) In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgment shall, in addition to payment of costs and fees under

that chapter, pay the attorney's fees of the other party arising out of the trial de novo.

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

§ 20104.6. Payment on undisputed portion of claim; interest on arbitration awards or judgments

- (a) No local agency shall fail to pay money as to any portion of a claim which is undisputed except as otherwise provided in the contract.

In any suit filed under Section 20104.4, the local agency shall pay interest at the legal rate on any arbitration award or judgment. The interest shall begin to accrue on the date the suit is filed in a court of law.

SECTION C -WAGE AND EQUIPMENT RATES

1. Prevailing Wage Rates

In accordance with the provisions of Section 1770 of the Labor Code of the State of California, the Director of the Department of Industrial Relations has determined the general prevailing rate of per diem wages applicable to the work to be done, and a current copy of said prevailing wages is on file with the City Clerk. Should the minimum Federal Wage Rate be higher than the rate determined by the Director of the Department of Industrial Relations, then the Federal Wage Rate Determination shall govern.

The successful bidder will be required to post a copy of these general prevailing rates of per diem wages in a conspicuous place at the job site forthwith upon undertaking the public work called for herein.

In addition, the City Charter of the City of Vallejo requires that the Contractor and all his/her Subcontractors shall pay their employees on said work a salary or wage at least equal to the prevailing salary or wage for work of similar character in the locality in which the public work is performed. The Contractor shall, as a penalty, forfeit to the City FIFTY DOLLARS (\$50.00) for each calendar day or portion thereof, for each employee paid less than the prevailing salary or wage for any public work done under the contract by him/her or any subcontractor under him/her.

The State Labor Code states that for violations of public works laws relating to payment of prevailing wages, the City of Vallejo will be required to withhold from any progress payments owed to a contractor any amounts that have been forfeited as penalties, or as wages owed to employees, who have not been paid the prevailing wage for work performed. Effective 1/1/93, the City is required to directly transfer all withheld wages and penalties to the Labor Commissioner for disbursement in those cases where a contractor fails to bring a lawsuit for amounts withheld within 90 days after the completion of the public works contract and formal acceptance of the job by the City.

Also, the Labor Commissioner is permitted to intervene in any lawsuit brought by the contractor against an awarding body for recovery of amounts withheld. In the event that the contract does not prevail in the lawsuit to recover the amounts withheld, the wages and penalties will then be forwarded to the Labor Commissioner for disbursement in the manner previously described.

2. Payroll Record

In accordance with the provisions of Section 1776 of the Labor Code of the State of California, the Contractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid

to each journeyman, apprentice, worker or other employee employed by the Contractor in connection with this project. This payroll record shall be certified and available for inspection at all reasonable hours at the principal office of the successful bidder and a certified copy shall be furnished within ten (10) days after receipt of a written request by the following parties:

- A. An employee or his/her authorized representative
- B. City's representative
- C. Representative of Labor Standard Enforcement and Division of Apprenticeship Standard of Department of Industrial Relations.

Any copy of the payroll record made available for inspection and furnished to the public through the above entities shall not disclose names, addresses or social security numbers of individual employees except the name and address of the Contractor.

In the event of non-compliance with the requirement of this subdivision, the Contractor shall have ten (10) days in which to comply subsequent to receipt of written notices from the State or City. If the non-compliance is still evident after the ten-day period, the Contractor shall, as a penalty, forfeit to the City TWENTY-FIVE DOLLARS (\$25.00) for each calendar day, for each employee, until strict compliance is effectuated.

3. Equipment Rental Rates

Equipment rental will be paid for as provided under Section 9-1.03A of the State Standard Specifications at the rates listed in the EQUIPMENT RENTAL RATES TABLE of the State of California, Department of Public Works, Division of Highways, latest issue, for use in their Special Provisions, a copy of which Table of Rates is filed in the Water Director's Office.

STATE OF CALIFORNIA - DEPARTMENT OF INDUSTRIAL RELATIONS
 DIVISION OF APPRENTICESHIP STANDARDS

TO: California Department of Industrial Relations
 Division of Apprenticeship Standards
 P.O. Box 603
 San Francisco, CA 94101

FROM: City of Vallejo
 Water Department
 202 Fleming Hill Rd.
 Vallejo, CA 94589

833690000

A contract to perform public works under Labor Code §1777.5 has been awarded to:

Name of General Contractor:		Contractor 's License Number:	
Mailing Address:		City:	
		Zip code:	Telephone Number: ()
Address or Location of Work Site (include City and/or County):			
Contract or Project Number:		Dollar Amount of Contract Award:	
Starting Date (Estimated or Actual) Month / Day / Year	Completion Date (Estimated or Actual) Month / Day / Year		Number of Working Days:
Type of Construction (Highway, school, hospital, etc):		<input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> ALTERATIONS	
Classification or Type of Workman (Carpenter, Plumber, etc.):			
Is language included in the Contract Award to effectuate the provisions of Section 1777.5 as required by the Labor Code?		<input type="checkbox"/> YES <input type="checkbox"/> NO	
Is Language included in the Contract Award to effectuate the provisions of Section 1776 as required by the Labor Code?		<input type="checkbox"/> YES <input type="checkbox"/> NO	
Signature:		Title:	Date:
Printed or Typed Name:		Telephone Number: ()	

Duplication of this form is permissible

DAS 13 (RV. 7/85)

STATE OF CALIFORNIA
Edmund G. Brown, Jr., Governor

DEPARTMENT OF INDUSTRIAL RELATIONS
Christine Baker, Director
CALIFORNIA DIVISION OF APPRENTICESHIP STANDARDS
Diane Ravnik, Chief Deputy Director
455 Golden Gate Avenue, 9th Floor
San Francisco, California 94102
Telephone (415) 703-4920

DISTRICT OFFICES	ADDRESS	TELEPHONE
Fresno 93721	2550 Mariposa St., Room 3080	559/445-5431
Los Angeles 90013	320 West 4 th Street, Suite 950	213/897-1385
San Francisco 94102	455 Golden Gate Ave., 9 th Flr	415/703-1128
Sacramento 95834	160 Promenade Circle, Suite 320	916/920-6111
San Jose 95113	100 Paseo De San Antonio, Room 125	408/277-1273
San Diego 92108	7575 Metropolitan Dr, Suite 209	619/767-2045

SEAL PAGE

A. The following are the Engineer of Records for this project:
I-2 Process and Instrumentation Diagram - Reservoir

B. Civil Engineer:

1. BKF Engineers, Redwood City, CA
2. Yousra Tilden, PE License No. C48742
3. Responsible for the following specification sections:

01 00 00	Supplemental General Requirements
01 00 20	Project safety Requirements
01 00 25	Measurement and Payment
14 20 00	Hoist and Trolley System
22 16 00	Ductile Iron Pipe
22 66 00	Valves and Appurtenances
31 10 00	Site Preparation
31 20 00	Earth Moving



C. Structural Engineer

1. Cornerstone Structural Engineering Group, San Francisco, CA
2. Thomas L Swayze, SE License No. S3302
3. Responsible for the following specifications sections

03 00 00	Concrete Work
03 10 00	Concrete Formwork
03 20 00	Reinforcing Steel
03 30 00	Cast-in-Place Concrete
03 70 10	Pot Installed Anchors
05 12 00	Structural Steel and Miscellaneous Iron



SECTION D –TECHNICAL SPECIFICATIONS

SECTION 01 00 00

SUPPLEMENTAL GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY OF THE WORK

- A. At Lake Madigan: Installation of bonneted knife gate valve on the outlet pipe with a flanged coupling adapter, a cast in place vault with concrete foundation, and concrete stairs.
- B. At Lake Frey: Demolishing the existing platform and ladder and installing a new platform, ladder and hoist and trolley system.

1.2 SUBMITTALS

- A. These paragraphs specify administrative and procedural requirements for submittals required for performance of the work, including, but not limited to:
 - 1. Submittal schedule.
 - 2. Product Data.
 - 3. Shop Drawings.
 - 4. Samples.
- B. Perform no portion of the Project requiring submittal and review of shop drawings, product data, samples, or similar submittals until the respective submittal has been stamped by the Engineer. All work shall be in accordance with submittals that have been marked as ""REVIEWED" or "FURNISH AS CORRECTED," and stamped by the responsible reviewing party.
- C. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal to the Engineer sufficiently in advance of performance of related construction activities to avoid delay.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential or any other activity.
- D. Procedures: Review shop drawings, product data and samples prior to submission. Identify deviations from the Contract Documents. Stamp form with the Contractor's stamp and sign approval.

LAKE MADIGAN & LAKE FREY IMPROVEMENTS

1. By submitting shop drawings, product data, samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Contract Documents.
 2. Identify each submittal by listing on the submittal the specification section and paragraph or plan detail to which the submittal is applicable.
 3. Processing Time: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for re-submittals.
 - a. Allow 10 working days for initial review. Allow additional time if processing requires comparison with subsequent submittals.
 - b. If an intermediate submittal is necessary, process the same as the initial submittal.
 - c. Allow 5 working days for reprocessing each submittal.
 - d. No extension of contract time will be authorized because of failure to transmit submittals sufficiently in advance of beginning work to permit processing.
- E. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block. Clearly identify the manufacturer or fabricator for each item submitted. Allow adequate space for the responsible party's review stamp.
- F. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Engineer using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.
- G. Contractor Responsibility: The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by review of shop drawings, product data, samples or similar submittals unless the Contractor has specifically informed the Engineer in writing of such deviation at the time of submittal and the responsible reviewing party has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in shop drawings, product data, samples or similar submittals by the review of the responsible reviewing party.
- H. Review Stamp: Reviewed submittals shall be stamped with the results of the review and/or action required of the Contractor. Listed below is a sample of the actions noted on a review stamp. The precise wording used by the individual reviewing party may vary from that listed but, in general, one or more of the actions listed will be conveyed to the Contractor.
1. If any submittal is returned to the Contractor marked "REVIEWED," formal revision and re-submittal of said submittal will not be required.

SUPPLEMENTAL GENERAL REQUIREMENTS

2. If any submittal is returned to the Contractor marked "FURNISH AS CORRECTED," formal revision and re-submittal of said submittal will not be required.
 3. If any submittal is returned to the Contractor marked "REVISE AND RESUBMIT," the Contractor shall revise said submittal and shall resubmit copies of said revised submittal.
 4. If any submittal is returned to the Contractor marked "REJECTED," the Contractor shall provide a new submittal and shall submit copies of said new submittal.
 5. If any submittal is returned to the Contractor marked "SUBMIT SPECIFIED ITEM", only submittal of item identified is required.
 6. Fabrication of an item shall not be commenced before the pertinent shop drawings have been reviewed and returned to the Contractor marked either, "REVIEWED" or "FURNISH AS CORRECTED," Revisions indicated on shop drawings shall be considered as changes necessary to meet the requirements of the Contract Drawings and Specifications.
- I. Collect product data into a single submittal for each element of construction or system product. Data shall include printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, and performance curves. Where product data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."
1. Mark each copy to clearly show applicable choices and options. Where printed product data includes information on several products, some of which is not required, mark copy to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with recognized trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurement.
 - f. Notation of coordination requirements.
 2. The Contractor shall not submit product data until he has confirmed that it meets with requirements of the Contract Documents.
 3. Copies Required: Submit the number of copies the Contractor requires be returned, plus (3) copies which will be retained by the Engineer.
 4. Distribution: Furnish copies of final approved submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and all affected others as required for performance of construction activities.
 5. Do not use unstamped review copies of submittals in connection with construction.

- J. Provide submittals for the items indicated in the individual sections of the Technical Specifications.

1.3 MOBILIZATION/DEMobilIZATION

- A. Mobilization shall include the obtaining of all permits; moving onto the site of all plant and equipment; furnishing and erecting plants, temporary buildings, and other construction facilities; and implementing security requirements; all as required for the proper performance and completion of the Work. Mobilization shall include the following principal items:

1. Moving on to the site of all Contractor's plant and equipment required for operations.
2. Installing temporary construction power, wiring, and lighting facilities.
3. Establishing fire protection system.
4. Providing field office trailers for the Contractor and the Engineer.
5. Developing construction water supply.
6. Providing all on-site communication facilities, including telephones.
7. Providing on-site sanitary facilities and potable water facilities.
8. Arranging for and erection of Contractor's work and storage yard.
9. Obtaining all required permits.
10. Having all OSHA required notices and establishment of safety programs.
11. Having the Contractor's superintendent at the jobsite full time.
12. Submitting initial submittals.
13. Providing the required BMPs.

- B. Demobilization shall include the following principal items:

1. Final Cleanup - The Contractor shall promptly remove from the vicinity of the completed work, all rubbish, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the Work by the City will be withheld until the Contractor has satisfactorily complied with the foregoing requirements for final cleanup of the project site.
2. Closeout Timetable - The Contractor shall establish dates for equipment testing, acceptance periods, and on-site instructional periods (as required under the Contract). Such dates shall be established not less than one week prior to beginning any of the foregoing items, to allow the City, the Design Engineer, and their authorized representatives sufficient time to schedule attendance at such activities.
3. Job Walk and Punch List - The Contractor shall notify the City of completion of project and schedule a job walk with the City. A punch list will be prepared during the job walk reflecting all the remaining items that need to be done on the project. The Contractor shall respond to the punch list and notify the

City when all the corrections and missing items are complete. The City will inspect the project to make sure that all the punch list items have been addressed prior to acceptance of the job and project closeout.

4. Record Drawings Submittal - The Contractor's attention is directed to the condition that one percent of the contract price (in addition to the regular retention) will be deducted from any monies due the Contractor as progress payments, if completed up-to-date record drawings has not been submitted at the project closeout. The aforementioned amount will be retained by the City as the agreed, estimated value of the completed record drawings. Any such retention of money for failure to submit the completed record drawings at project closeout shall be in addition to the retention of any payments due to the Contractor.
5. Final submittals - The Contractor, prior to requesting final payment, shall obtain and submit the following items to the Engineer for transmittal to the City:
 - a. Written guarantees, where required.
 - b. Operating manuals and instructions.
 - c. Maintenance stock items; spare parts; special tools.
 - d. Completed record drawings.
 - e. Bonds for maintenance, etc., as required.
 - f. Certificates of inspection and acceptance by local governing agencies having jurisdiction.
 - g. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.

1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. General: Prepare network diagrams using AON (activity-on-node) format.
- B. Startup Network Diagram: Submit diagram within one week of date established for the Notice to Proceed. Outline significant construction activities for the first 14 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.
- C. CPM Schedule: Prepare Contractor's construction schedule using a time-scaled CPM network analysis diagram for the Work.
 1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than two weeks after date established for the Notice to Proceed.
 - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of approval of the schedule.

2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
 3. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to coordinate with the Contract Time.
- D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
 - a. Preparation and processing of submittals.
 - b. Mobilization and demobilization.
 - c. Purchase of materials.
 - d. Delivery.
 - e. Fabrication.
 - f. Utility interruptions.
 - g. Installation.
 - h. Work by City that may affect or be affected by Contractor's activities.
 - i. Testing
 - j. Punch list and final completion.
 - k. Activities occurring following final completion.
 2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
 3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
 4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
- E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.
- F. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:

1. Contractor or subcontractor and the Work or activity.
 2. Description of activity.
 3. Main events of activity.
 4. Immediate preceding and succeeding activities.
 5. Early and late start dates.
 6. Early and late finish dates.
 7. Activity duration in workdays.
 8. Total float or slack time.
 9. Average size of workforce.
 10. Dollar value of activity (coordinated with the schedule of values).
- G. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
1. Identification of activities that have changed.
 2. Changes in early and late start dates.
 3. Changes in early and late finish dates.
 4. Changes in activity durations in workdays.
 5. Changes in the critical path.
 6. Changes in total float or slack time.
 7. Changes in the Contract Time.

1.5 PROJECT MEETINGS

- A. General: Construction Manager will schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify City and Design Engineer of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including, Engineer and Design Engineer within three days of the meeting.
- B. Preconstruction Conference: City will schedule and conduct conference before starting construction, at a time convenient to City and Design Engineer, but no later than Fifteen (15) days after execution of the Agreement.
1. Attendees: Authorized representatives of City, Solano County Engineer, and Design Engineer, Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures.
 - k. Preparation of record documents.
 - l. Use of the premises.
 - m. Work restrictions.
 - n. Working hours.
 - o. City's occupancy requirements.
 - p. Responsibility for temporary facilities and controls.
 - q. Procedures for disruptions and shutdowns.
 - r. Construction waste management and recycling.
 - s. Parking availability.
 - t. Office, work, and storage areas.
 - u. Equipment deliveries and priorities.
 - v. Security.
 - w. Progress cleaning.
 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Progress Meetings: Engineer will conduct weekly progress meetings.
1. Attendees: In addition to representatives of City and Design Engineer each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of

schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

- 1) Review schedule for next period.
- b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of proposal requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.6 GEOTECHNICAL REPORT(S)

- A. A desktop study was prepared for the project titled "Geotechnical Consultation, Platform and Vault Design, Lake Frey and Madigan", by BAGG Engineers, dated June 28, 2017. A copy of the Study can be found in Appendix A of these Specifications.

1.7 CULTURAL RESOURCES

- A. In the event that prehistoric traces (human remains, artifacts, concentrations of shell, bone, rock or ash) are encountered, work within a 200-foot radius of the find shall be halted and the Engineer shall be notified. The Engineer shall contact a qualified archaeologist/historian. The archaeologist/historian shall inspect the find and make any necessary recommendations for further evaluation and/or mitigation of impacts to the find in the event the materials have scientific importance as currently defined by Appendix K of the California Environmental Quality Act Guidelines.

1.8 DEMOLITION

- A. Demolition work includes the removal of section of existing pipe at Lake Madigan site and the removal of the existing ladder and wooden platform at Lake Frey site.
- B. City assumes no responsibility for actual condition of the site to be altered.
- C. Conditions existing at time of inspection for bidding purpose will be maintained by City as far as practical.
- D. Unless otherwise indicated, all demolition waste shall become the property of the Contractor, except materials to be recycled. Dispose of demolished material outside the project site.
- E. Coordinate and schedule upstream valve shutdown on Lake Madigan with the City, prior to start of work.
- F. If known or suspected hazardous materials are encountered during operations, stop operations immediately and notify the Project Manager.
- G. Perform work in accordance with ANSI A10.6 unless otherwise noted.
- H. Provide noise and dust abatement as required to prevent contamination of adjacent areas.
- I. Remove all materials, not designated to be recycled or salvaged, in their entirety and promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- J. If unknown items such as human remains are encountered during operations, stop operations immediately and notify the City.
- K. Burning of demolished materials is prohibited.

1.9 ACCESS

- A. Access to the sites shall be as shown on the Drawings.
- B. Contractor to submit for review a Work Plan detailing at a minimum:
 - 1. Method of access,
 - 2. Transporting and handling of materials,
 - 3. Emergency response

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

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SECTION 01 00 20**PROJECT SAFETY REQUIREMENTS**

PART 1 - GENERAL**1.1 DESCRIPTION****A. Work Included:**

1. Be solely and exclusively responsible for maintaining job-site safety and compliance with all pertinent Groups and Articles set forth in Title 8, California Code of Regulations (Cal/OSHA), and Title 29, Code of Federal Regulations (OSHA; where applicable).
2. Contractor shall be the Creating, Controlling, and Correcting Employer for purposes of compliance with Cal/OSHA's multi-employer worksite rule (8 CCR 336.10) for itself and all of its site workers.
3. Meet with the Engineer prior to commencement of the Work to review the project safety requirements as applicable to the Contractor's procedures and to develop mutual understandings relative to compliance with the safety requirements and administration of the Contractor's project safety programs.
4. Provide for public safety when working in public areas.

B. Site Activities

1. Control all harmful dusts, fumes, mists, vapors and gases exposures for all job-site workers, regardless of employer, so that respective permissible exposure limits (PEL) are not met or exceeded. Such hazards are contained in Title 8, California Code of Regulations (Cal/OSHA) § 5155 - Airborne Contaminants; Article 110 - Regulated Carcinogens; Construction Safety Order 1529 - Asbestos; and Construction Safety Order 1530.1 - Control of Employee Exposures from Dust-Generating Operations Conducted on Concrete or Masonry Materials.
2. Physically delineate and assign work areas and restrict access by unauthorized persons during the course of Work.
3. Contractor shall not allow unsafe tools, equipment, or machinery to be brought onto the project. Unsafe tools, etc. shall be considered as those tools which are in need of repair, replacement, lacking proper maintenance, or are unsuitable for the task.
4. Contractor shall assemble, install, erect, and prepare safety related equipment, devices, and products in accordance with manufacturer specifications and recommendations. Manufacturer documentation shall be provided to the Engineer upon request.

5. Comply with the Federal Drug Free Workplace Act, Department of Transportation (DOT) testing regulations (49 CFR Part 32), CA State Vehicle Code (Section 34520) and all applicable legally valid rules and regulations regarding drug and alcohol misuse, including consumption, sale or possession.
6. Contractor personnel are specifically prohibited from bringing firearms, explosive devices, or other dangerous weapons on City property or while engaged in contract Work.
7. Contractor shall provide safe access for construction inspectors and other authorized City employees in order to inspect or review Work in progress.

1.2 DEFINITIONS

- A. Where used in the Contract Documents, the following words and terms shall have the meanings indicated. The meanings shall be applicable to the singular and plural of the words and terms.
- B. Competent Person: As defined in Section 1504 of the Construction Safety Orders, Title 8, California Code of Regulations, one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.
- C. Confined Spaces: Shall mean any space not designed for human occupancy and having the characteristics identified in Title 8, California Code of Regulations (Cal/OSHA), Article 108 - Confined Spaces.
- D. Excavation: Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.
- E. Hazardous Substance: Defined as any substance included in the list (Director's List) of hazardous substances prepared by the Director, California Department of Industrial Relations, pursuant to Labor Code Section 6382. Includes hazardous waste as defined herein.
- F. Exposure Assessment: An assessment of potential chemical and physical hazards encountered on the project site.
- G. LOTO: Lock-Out Tag-Out as defined by Title 8, California Code of Regulations, § 3314.
- H. OPU: Order Prohibiting Use. A tag affixed to a dangerous workplace condition or practice which constitutes an imminent hazard to workers. An OPU tag may be posted prohibiting entry to the worksite, or part of the worksite, use of machinery, devices, or apparatus.

- I. Trench: A narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet or less, (measured at the bottom of the excavation), the excavation is also considered to be a trench.

1.3 SUBMITTAL OF PLANS AND PROCEDURES

A. General:

1. Prepare and submit plans and procedures.
2. Allow 20 work days minimum for the Engineer's review plus transit time to and from the City offices.
3. The plans and procedures identified in this Article 1.3 shall be kept current. New hazards, mitigations, or procedures identified during the course of the Work shall be submitted as revisions to the identified plans and procedures within 1 day of being identified.
4. Work described under the plan shall not begin until the submitted plan has been returned as "Reviewed and Approved".

B. Project Safety and Health Plan:

1. Submit prior to start of the Work for the Engineer's review a Project Safety and Health Plan for the Work to be performed only if actual, potential, or anticipated hazards include: a) hazardous substances; b) fall protection issues; c) confined spaces; d) trenches or excavations; or, e) lockout/tagout. If the actual, potential, or anticipated hazards do not include one or more of these five hazards, no Plan is required.
2. Submit prior to start of Work the name of individual(s) who has been designated as:
 - a. Contractor's Project Safety and Health Representative
 - b. Submit principal and alternate Competent/Qualified Persons for: 1) scaffolding; 2) fall protection systems and equipment; and 3) employee protective systems for trenches and excavations.
 - c. Qualified person to conduct and take samples and air measurements of known or suspect hazardous substance for personnel and environmental exposure. Sample results shall be submitted to the Engineer in writing and electronic format.
3. Plan shall include an emergency action plan in the event of an accident, or serious unplanned event (e.g.: gasoline break, fire, structure collapse, etc.) that requires notifying any responsive agencies (e.g.: fire departments, PG&E, rescue teams, etc).

C. Excavation Safety Plan

1. Submit detailed plan for worker protection and control of ground movement for the Engineer's review prior to any excavation work at jobsite. Include drawings and details of system or systems to be used, area in which each type of system will be used, de-watering, means of access and egress, storage of materials, and equipment restrictions. If plan is modified or changed, submit revised plan.
2. All surface encumbrances that are located and determined to create a hazard to employees shall be removed or supported, as necessary, to safeguard employees.
3. Tunnel work shall comply with the Tunnel Safety Orders.

D. Confined Space Operating Procedures

1. Submit confined space operating and rescue procedures to the Engineer for review. Procedures shall conform to the applicable provisions of Sections 5156 through 5158, Title 8, California Code of Regulations.
2. If a pipeline is required to be entered, the Project Safety and Health Plan shall include a description of a safe access and rescue plan.

E. Fall Protection Procedures

1. Submit fall protection procedures to the Engineer for review prior to any work at heights at the jobsite.
2. The fall protection plan shall address control of fall hazards for any work occurring at heights greater than 7½ feet.
3. Procedures shall conform to applicable provisions of Sections 1669 through 1671.2, Title 8, California Code of Regulations.
4. The plan shall address scaffolds when used on site.
5. The plan shall address manlift equipment when used on site.
6. The plan shall address rescue of workers who may fall.

F. USA Marking Record

1. Submit utility locate and marking (USA marking) number and documents, and verification of markings. Make available to the Engineer the record of all subsequent utility marking events and meetings on the project.

G. Accident Reports

1. Upon request of the Engineer, complete and submit an accident investigation report.

1.4 TRAINING REQUIREMENTS

- A. Ensure that all personnel who, as the result of work on this contract, will likely be exposed to hazardous conditions or hazardous substances at the site have received the appropriate training for the hazards they may encounter. Establish

minimum training requirements and do not allow untrained workers to enter or perform Work at the site.

1.5 FIRE PREVENTION AND PROTECTION

- A. Perform all Work in a fire-safe manner and supply and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. Comply with applicable federal, local, and state fire-prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Prevention Standards for Safeguarding Building Construction Operations (NFPA No. 241) shall be followed.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PROJECT SAFETY AND HEALTH PLAN

- A. General:
1. A copy of the Contractor's Project Safety and Health Plan shall be available at the construction site while excavations, confined spaces, fall protection, or LOTO are being performed, or hazardous substances are present
 2. Contractor's Project Safety and Health Plan shall apply to all personnel working at, or visiting the site including, but not limited to, Contractor's employees, suppliers, truckers, and City personnel.
 3. The Contractor's Project safety and health representative shall verify that all persons are in compliance with applicable safety and health requirements, and take action to ensure compliance where deficiencies are identified.
 4. Provide the Engineer a minimum of 48 hours advance notice of time and location of pre-entry briefings so that City personnel, who are required to enter the Project, may attend. A record of attendance shall be provided to the Engineer within 24 hours after the briefing.
 5. Contractor shall take representative personnel air samples for employee exposure to dust, fume, mist, and vapors of materials and substances brought onto the project or generated during the course of Work on the project. See paragraph B. below.
 6. Exercise extreme care when handling or disposing of materials or substances that are listed as hazardous substances in Section 339 of Chapter 3.2, California Occupational Safety and Health Regulations, Title 8, California Code of Regulations, or in Title 26 (Toxics) of the California Code of Regulations, or as evidenced by the manufacturer's MSDS.

- B. Sampling and Testing of Samples Collected for Exposure Analysis:
1. Be responsible for all sampling, including sampling for airborne contaminants, and testing of materials suspected of containing hazardous substances to determine if such materials pose potential safety & health exposure hazards. All sampling shall be conducted by qualified persons, and testing shall be performed by an OSHA certified laboratory.
 2. Copies of the results of testing and sampling shall be made available to the Engineer within 5-days of time of receipt from the certified laboratory.
 3. Each sample shall have an identifying sample number assigned by the Contractor when the sample is taken with the prefix WT7091.
 - a. Each sample number shall be included on the sampling chain of custody and in all reports, correspondence, and other documentation related to the sample. Each sample shall have a sampling chain of custody.
 - b. Chain of custody shall show the name and organization of each person having custody of the sample, and shall also show the sample number, job name and location, time of day and date sample taken, material sampled, and tests to be performed.

3.2 HAZARDOUS CONDITIONS

- A. Confined Spaces
1. Attention is directed to the provisions of Article 108 of the General Industry Safety Orders, Title 8, California Code of Regulations, and Article 4 on Dusts, Fumes, Mists, Vapors, and Gases of Subchapter 4, the Construction Safety Orders, Title 8, California Code of Regulations.
 2. All spaces shall be designated by Contractor as either PERMIT REQUIRED or NON-PERMIT REQUIRED. When designated PERMIT REQUIRED, a copy of the PERMIT shall be conspicuously posted for the duration of the Work within the space. Confined spaces designated as PERMIT REQUIRED after assessment shall be supported by a rescue team(s).
 3. Tests for the presence of combustible or dangerous gases and/or oxygen deficiency in confined spaces shall be made with an approved device immediately prior to a worker entering the confined space and at intervals frequent enough to ensure a safe atmosphere during the time a worker is in such a structure. A record of such tests shall be kept at the jobsite.
 4. No employee shall be permitted to enter a confined space, where tests indicate the presence of a hazardous atmosphere, unless the employee is wearing suitable and approved respiratory equipment, or until such time that continuous forced air ventilation has removed the hazardous atmosphere from the confined space.
 5. Confined spaces that contain or that have last been used as containers of toxic gases, light oils, hydrogen sulfide, corrosives, or poisonous substances, shall, in every case, be tested by means of approved devices

or chemical analysis before being entered without wearing approved respiratory equipment.

6. Sources of ignition shall be prohibited in any confined space until after the atmosphere within the confined space has been tested and found safe.
7. Reservoirs, vessels, or other confined spaces having openings or manholes in the side as well as in the top shall be entered from the side openings or manholes when practicable.
8. Coordinate entry operations with the Engineer when both Contractor personnel and City personnel require permit space entry.

B. Excavation Safety

1. Section 6705 of the Labor Code requires that the excavation of any trench 5 feet or more in depth shall not begin until the Contractor has received from the Engineer notification of the Engineer's acceptance of the Contractor's detailed plan for worker protection from the hazards of caving ground during the excavation of such trench.
 - a. Such plan shall show the details of the design of shoring, bracing, sloping or other provisions to be made for worker protection during such excavation.
 - b. No such plan shall allow the use of shoring, sloping or a protective system less effective than that required by the Construction Safety Orders, Title 8, California Code of Regulations, and if such plan varies from the shoring system standards established by the Construction Safety Orders, the plan shall be prepared and signed by an engineer who is registered as a Civil or Structural Engineer in the State of California. Cal/OSHA Permit: Title 8, CCR §341(a)(1) requires excavators to obtain a permit prior to digging trenches or excavations which are 5 feet or deeper and into which a person is required to descend.
2. California Government Code: Various sections of § 4216 describe the requirements and procedures for excavation notifications and utility excavation.
3. Requirements of Protective Systems:
 - a. All excavations 5 ft. in depth or greater and not in stable rock shall have a protective system to prevent earth movement.
 - b. For excavations greater than 20 ft. in depth, the detailed plan for worker protection and control of ground movement shall be prepared, and signed and dated, by a California registered Civil or Structural Engineer. The registered engineer shall:
 - 1) Have at least five years' responsible experience in work of this nature.

- c. Inspect the installation of the system prior to entry of any persons into the excavation and certify in writing to the City that the system is installed as designed.
- d. Perform any necessary additional work that may be required because of unanticipated movements, deflections, or settlements of the protective system or the ground.
- e. No changes or deviations from a protective system designed by a registered engineer shall be made without prior approval of the Contractor's designing engineer.
- f. In the event of any violation of Article 6 of the Construction Safety Orders or this paragraph, or deviation from the submitted plan for worker protection and control of ground movement, the Engineer may suspend Work or notify Cal/OSHA or both.

C. Fall Protection

1. Section 1670 of the Construction Safety Orders, Title 8, California Code of Regulations, requires protective measures to be implemented whenever a worker is exposed to falls greater than 7½ feet.
2. On site activities shall conform to the requirements set forth in Sections 1669 through 1671.2, Title 8, California Code of Regulations.
3. A walkway or bridge, with standard guardrails, shall be provided where employees are required to cross excavations and trenches 6 feet or greater in depth per Section 1541 of the Construction Safety Orders, Title 8, California Code of Regulations.

D. LOTO (Lock-Out Tag-Out)

1. Title 8, California Code of Regulations requires control of hazardous energy sources where any employee may be exposed to potential harm.
2. The Contractor with its subs shall meet with the City to share and reach agreement for implementation with LOTO plans and planning for any City equipment, process, or machinery that shall be locked-out.
3. The distinction between LOTO and operational shut-down shall be made.
4. Share and implement the following components of the LOTO plan:
 - a. LOTO locations,
 - b. Lock-out and tag-out methods and equipment,
 - c. De-energization verification,
 - d. Log of locked and tagged locations,
 - e. Stated emergency types and breach policy,
 - f. Return-to-service practice and removal of lock and tags.

3.3 ACCIDENT REPORTS

- A. Report any serious injury to the Engineer immediately. Examples of reportable injuries: broken limbs, amputation, chemical asphyxia, etc. Contractor is solely and exclusively responsible for notifying Cal/OSHA within 8-hours of the occurrence of a serious injury or fatality. Also promptly report in writing to the Engineer all accidents whatsoever arising out of, or in connection with, the performance of the Work whether on, or adjacent to, the site, giving full details and statements of witnesses. Reports shall document the root cause of the accident, if the accident was preventable, and how the accident will be prevented from reoccurring. Furnish further information to the City as requested.
- B. If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, arising out of or in connection with the performance of the Work, the Contractor shall promptly report the facts in writing to the Engineer, giving full details of the claim.
- C. Notify the Engineer if representatives of Cal/OSHA or any other regulatory agency arrives at the job-site for any purpose, including inspections, consultations, or investigations. The notification shall be made to the Engineer within 30-minutes of the arrival of the representative to the project.

END OF SECTION

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SECTION 01 00 25**MEASUREMENT AND PAYMENT****PART 1 - GENERAL****1.1 BID SCHEDULE**

BID ITEM	APPROX QTY	UNIT	DESCRIPTION	UNIT PRICE	EXT. PRICE
1	1	LS	MOBILIZATION	\$	\$
2	1	LS	16" DIP PIPE	\$	\$
3	1	EA	16-INCH BONNETED KNIFE GATE VALVE	\$	\$
4	1	EA	16-INCH FLANGED COUPLING ADAPTER	\$	\$
5	2	EA	16-INCH MID-SPAN RESTRAINT	\$	\$
6	1	LS	LAKE MADIGAN SITE IMPROVEMENTS	\$	\$
7	1	LS	PLATFORM	\$	\$
8	1	LS	LADDER	\$	\$
9	1	LS	HOIST AND TROLLEY SYSTEM	\$	\$

1.2 REQUIREMENT

- A. Payment for the various items of the Bid Schedule as further specified herein, shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the Work all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of permits and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the California Division of Industrial Safety and the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). No separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenant items of work.

1.3 BID ITEM NO. 1 - MOBILIZATION

- A. No measurement shall be made for this item.
- B. The Contractor's attention is directed to the condition that no payment for mobilization/demobilization or any part thereof will be approved for payment under the Contract until all following mobilization items listed have been completed as specified:
 - 1. Moving on to the site of all of Contractor's equipment required for first month operations.
 - 2. Establishing fire protection system.
 - 3. Arranging for and erection of Contractor's work and storage yard.
 - 4. Having all OSHA required notices and establishment of safety programs.
 - 5. Performing all required potholing.
 - 6. Having the Contractor's superintendent at the jobsite full time.
 - 7. Submitting initial submittals.
 - 8. Submitting erosion control plan.
 - 9. Construction staking.
- C. Demobilization shall include the following principal items:
 - 1. Final Cleanup
 - 2. Closeout Timetable
 - 3. Job Walk and Punch List
 - 4. Record Drawings Submittal
 - 5. Final submittals
- D. Payment for mobilization/demobilization will be made at the lump sum price named in the Bid Schedule(s) under Item No. 1.
- E. When the monthly partial payment estimate of the amount earned, not including the amount earned for mobilization/demobilization, is 5 percent or more of the original contract amount, 50 percent of the contract item price for mobilization/demobilization or 5 percent of the original contract amount, whichever is the lesser, will be included in the estimate for payment.
- F. When the monthly partial payment estimate of the amount earned, not including the amount earned for mobilization/demobilization, is 10 percent or more of the original contract amount, the total amount earned for mobilization shall be 75 percent of the contract item price for mobilization/demobilization or 7.5 percent of the original contract amount, whichever is the lesser, and that amount will be included in the estimate for payment.
- G. When the monthly partial payment estimate of the amount earned, not including the amount earned for mobilization/demobilization, is 20 percent or more of the original contract amount, the total amount earned for mobilization/demobilization

shall be 95 percent of the contract item price for mobilization or 9.5 percent of the original contract amount, whichever is the lesser, and that amount will be included in the estimate for payment.

- H. When the monthly partial payment estimate of the amount earned, not including the amount earned for mobilization/demobilization, is 50 percent or more of the original contract amount, the total amount earned for mobilization shall be 100 percent of the contract item price for mobilization/demobilization or 10 percent of the original contract amount, whichever is the lesser, and that amount will be included in the estimate for payment.
- I. After acceptance of the contract the amount, if any, of the contract item price for mobilization/demobilization in excess of 10 percent of the original contract amount will be included for payment in the last estimate made for the project.

1.4 BID ITEM NO. 2 – 16-INCH DUCTILE IRON PIPE

- A. No measurement shall be made for this item.
- B. Payment for pipe will be made at the lump sum price named in the Bid Schedule under Item No. 2 which price shall constitute full compensation for:
 1. Furnishing and placing all such pipe, fittings and appurtenances including all required surveying and staking, quality control, pipe jointing, stulling and bracing, linings, coatings, flushing, and pressure testing of the pipeline.
 2. Full compensation for furnishing all labor, equipment, materials, and incidentals for health and safety shall be measured and included in related items of work involving the above items and no separate payment will be made therefor.

1.5 BID ITEM NO. 3 – 16-INCH BONNETED KNIFE GATE VALVE

- A. Measurement for payment for 16-inch bonneted knife gate valve will be based upon the number of complete knife gate valves installed.
- B. Payment for bonneted knife gate valve will be made at the unit price, each, named in the Bid Schedule(s) under Item No. 3 and shall constitute full compensation for furnishing and installing the knife gate valve including piping, valve support, testing and associated work, all in accordance with the requirements of the Contract Documents.

1.6 BID ITEM NO. 4 – 16-INCH FLANGED COUPLING ADAPTER

- A. Measurement for payment for 16-inch flanged coupling adaptor will be based upon the number of complete flanged coupling adaptors installed.

- B. Payment for 16-inch flanged coupling adaptor will be made at the unit price, each, named in the Bid Schedule(s) under Item No. 4 and shall constitute full compensation for furnishing and installing the 16-inch flanged coupling adaptor including cutting into the existing pipe, disposing of the cut pipe, connecting to the existing pipe and the new knife gate valve, bolts, testing, and associated work, all in accordance with the requirements of the Contract Documents.

1.7 BID ITEM NO. 5 – 16-INCH MID-SPAN RESTRAINT

- A. Measurement for payment for 16-inch mid-span restraint will be based upon the number of complete flanged coupling adaptors installed.
- B. Payment for 16-inch mid-span restraint will be made at the unit price, each, named in the Bid Schedule(s) under Item No. 5 and shall constitute full compensation for furnishing and installing the 16-inch mid-span restraint including bolts, testing, and associated work, all in accordance with the requirements of the Contract Documents.

1.8 BID ITEM NO. 6 – LAKE MADIGAN SITE IMPROVEMENTS

- A. No measurement shall be made for this item.
- B. Payment for Lake Madigan Site Improvements will be made at the lump sum price named in the Bid Schedule(s) under Item No. 6 and shall constitute full compensation for furnishing and installing the cast-in-place vault and steps, including any required grading, finishes, framing, riprap, third party testing and inspection, and associated work, all in accordance with the requirements of the Contract Documents.

1.9 BID ITEM NO. 7 – PLATFORM

- A. No measurement shall be made for this item.
- B. Payment for platform will be made at the lump sum price named in the Bid Schedule(s) under Item No. 7 and shall constitute full compensation for furnishing and installing the platform, including the removal and disposal of the existing wooden platform, installation of the piers, guardrails, connections, finishes, third party testing and inspection, and associated work, all in accordance with the requirements of the Contract Documents.

1.10 BID ITEM NO. 8 – LADDER

- A. No measurement shall be made for this item.
- B. Payment for ladder will be made at the lump sum price named in the Bid Schedule(s) under Item No. 8 and shall constitute full compensation for furnishing

and installing the ladder, including the removal and disposal of the existing ladder, installation of the connections, finishes, third party testing and inspection, and associated work, all in accordance with the requirements of the Contract Documents.

1.11 BID ITEM NO. 9 – HOIST AND TROLLEY SYSTEM

- A. No measurement shall be made for this item.
- B. Payment for hoist and trolley system will be made at the lump sum price named in the Bid Schedule(s) under Item No. 9 and shall constitute full compensation for furnishing and installing the hoist and trolley system, including the installation of the structural framing system, guardrails, connections, finishes, testing and associated work, cast-in-place foundation with headwalls, third party testing and inspection, and associated grading, all in accordance with the requirements of the Contract Documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 03 00 00**CONCRETE WORK - GENERAL**

PART 1 - GENERAL**1.1 DESCRIPTION OF WORK**

- A. The work included under this section consists of furnishing all material, supplies, equipment, tools, transportation, and facilities, and performing all labor and services necessary for, required in connection with or properly incidental to furnishing, and installing concrete work as described in this section of the specifications, shown on the accompanying drawings, or reasonably implied therefrom, except as hereinafter specifically excluded.
1. Work Included:
 - a. All formwork, including any special forms necessary to produce architectural details and/or to accommodate the work of others and removal of forms.
 - b. All concrete reinforcement, placement, bending and forming thereof.
 - c. All concrete and cement finishing; all surface treatment and curing, including non-slip finishes and color work.
 - d. Installation of all reglets, bolts, anchors, cans, sleeves, column anchor bolts, etc.
 - e. The furnishing of all items required to be or shown on the Drawings as embedded in concrete, which are not specifically required under other sections.
 - f. Setting headers and screeds. Curing and protecting concrete.
 - g. Grouting of column bases.
 - h. Routing out cracks and sawcutting control joints as required by waterproofing.

PART 2 - PRODUCTS – (NOT USED)**PART 3 - EXECUTION****3.1 DEFECTIVE WORK**

- A. General: Work considered to be defective may be ordered by the City to be replaced in which case the Contractor shall remove the defective work at his expense. Work considered to be defective shall include, but not be limited to, the following:
1. Reinforcing:
 - a. Kinks and bends therein which are not scheduled or indicated on the drawings; reinforcing improperly placed, or previously heated, or

- excessively cold worked reinforcing.
2. Concrete:
 - a. Concrete in which defective or inadequate reinforcing steel has been placed.
 - b. Concrete incorrectly formed or not conforming to details and dimensions on the drawings or with the intent of these documents, or concrete the surfaces of which are out of plumb or level.
 - c. Concrete below specified strength.
 - d. Concrete not meeting the maximum allowable drying shrinkage requirements.
 - e. Concrete containing wood, cloth, or other foreign matter, rock pockets, voids, honeycombs, cracks or cold joints not scheduled or indicated on the drawings.

3.2 CORRECTION OF DEFECTIVE WORK

- A. The Contractor shall, at his expense, make all such corrections and alleviation measures as directed by the Engineer.
- B. Concrete work containing rock pockets, voids, honeycombs, cracks or cold joints not scheduled or indicated on the Drawings, shall be chipped out until all unconsolidated material is removed.
- C. Secure approval of chipped-out areas before patching. Patch per ACI 301.

END OF SECTION

SECTION 03 10 00

CONCRETE FORMWORK

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. The work included under this section consists of furnishing all material, supplies, equipment, tools, transportation, and facilities, and performing all labor and services necessary for, required in connection with or properly incidental to furnishing, installing, and removing form work as described in this section of the specifications, shown on the accompanying Drawings, or reasonably implied therefrom, except as hereinafter specifically excluded.
- B. Work Included:
 - 1. Design of Formwork, Shoring and Falsework
 - 2. Construction and removal of all forms.
 - 3. Installation of items furnished under other sections but indicated therein to be installed under this section.
 - 4. Accuracy of installation is responsibility of section furnishing item.
- C. Related Work Specified Elsewhere:
 - 1. Earth Moving; Section 31 20 00
 - 2. Concrete Reinforcement; Section 03 20 00
 - 3. Cast-in-Place concrete; Section 03 30 00

1.2 REFERENCE STANDARDS

- A. The following is a list of Reference Standards referred to in this portion of the Specification:
 - 1. W.C.L.I.B.; "Standard Grading and Dressing Rules No. 17"
 - 2. American Concrete Institute Standard ACI 347 "Guide to Formwork for Concrete" and ACI 318 "Building Code Requirements for Reinforced Concrete", Latest edition.
 - 3. California Building Code, current governing edition.
 - 4. American Plywood Association, "U.S. Product Standard PS1-07"

1.3 QUALITY ASSURANCE

- A. Codes and Standards: Comply with all Federal, State and Local Codes and Safety Regulations. In addition, comply with the provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified.
 - 1. California Building Code, current governing edition.

2. ACI-347 "Guide to Formwork for Concrete", current edition.
3. State of California Department of Transportation Standard Specifications, current governing edition.

B. Qualifications: Design and detailing of formwork shall be by a person experienced in the design of formwork and familiar with the principles of engineering mechanics. Design and detailing of formwork over 12-feet in height, shoring, and falsework shall be prepared by a registered Civil/Structural Engineer of the State of California.

1.4 SUBMITTALS

A. General Requirements

1. Construction, and fabrication or ordering of materials for formwork shall not begin until Contractor has received submittals reviewed by City governing all aspects of the intended work as required in these specifications.

B. Shop Drawings:

1. Formwork: Submit shop drawings for fabrication and erection of forms for portions of the concrete surfaces, as indicated below:
 - a. Formwork over 12-feet in height
 - b. Show general construction of forms including size of members, bracing, jointing, special form joint or reveals, location and pattern of form tie placement, and other items that affect the structural integrity of formwork or exposed concrete visually. Formwork over 12-feet in height shall be designed, detailed, and stamped by a registered Civil/Structural Engineer of the State of California.
2. Falsework and Shoring Shop Drawings: The Contractor shall submit shop drawings and calculations of any required falsework or shoring. Shop drawings and calculations shall be prepared, stamped, and signed by a registered Civil/Structural Engineer of the State of California. Shop drawings and calculations shall be prepared in accordance with the requirements of the State of California Department of Transportation Standard Specifications, Section 51-1.06A, "Falsework Design and Drawings."

1.5 SEQUENCING AND SCHEDULING

A. The Contractor shall obtain information and instructions from other trades and suppliers in ample time to schedule and coordinate the installation of items furnished by them to be embedded in concrete.

PART 2 - PRODUCTS**2.1 FORMS**

- A. Plywood shall be 5/8" Exterior "B.B." Plyform Class I. Each sheet shall be grade stamped with an APA stamp.
- B. Sheathing shall be Douglas Fir "Standard" grade per Grading Rules #17, W.C.L.I.B., Paragraph 118-c. 1x6 shiplap S4S.
- C. Hardboard shall be 1/8" tempered.

2.2 SPREADERS

- A. Spreaders shall be of metal type that will give positive tying and accurate spreading.

2.3 STUDS, WALES AND SHORING

- A. Studs, wales, and shoring shall be Douglas Fir "Construction" grade per Grading Rules #17, W.C.L.I.B. Paragraph 122-b or "No. 2" grade, Paragraph 123-c.

2.4 MANUFACTURED ASSEMBLIES

- A. Manufactured assemblies may be used as forms provided that maximum loadings and deflections used on jacks, brackets, columns, joists and other manufacturer devices does not exceed the manufacturer's recommendations.

PART 3 - EXECUTION**3.1 GENERAL**

- A. Furnish and install all forms, clamps, accessories, etc., required for all poured-in-place concrete below grade and unexposed portions above grade. Where sides of excavations have been cut neat and accurate to size for pouring of concrete directly against the excavation, forms for footings will not be required. Where the face of excavation is more than 3 inches wider than the specified width formwork shall be used.
- B. Furnish and install all forms, clamps, sealer, accessories, etc., required for all poured-in-place concrete above grade that will be exposed.
- C. Provide crack control and keyed cold joint forms.

3.2 DESIGN AND CONSTRUCTION OF FORMWORK

- A. Forms shall be constructed of sound material, of the correct shape and dimension, mortar tight, and of sufficient strength, and so braced and tied together that the movement of equipment, men, materials, or placing and vibrating the concrete will not throw them out of line or position. Construct so that they may be easily removed without damage to the concrete. Any movement or bellying of forms during construction shall be considered just cause for their removal and, in addition, the concrete work so affected. All formed joints on concrete surfaces to be exposed shall be taped and shall align so joints will not be apparent on the concrete surfaces. All dirt, chips, sawdust and other foreign matter shall be completely removed before concrete is placed.
- B. Before concrete is placed in forms, all inside surfaces of the forms shall be thoroughly coated with an approved form sealer. The form sealer shall be of high penetrating quality leaving no film on the surface of the forms that can be absorbed by the concrete.
- C. Form supports shall be placed on adequate foundations and have sufficient strength and bracing to prevent settlement or distortion from the weight of the concrete or other cause. Support shall rest on double wedged shim, or other approved means, so that the forms will be maintained at the proper grade.
- D. Form Ties: Bolts, rods, or other approved devices shall be used for internal form ties and shall be of sufficient quantities to prevent spreading of the forms. The ties shall be placed at least 1 inch away from the finished surface of the concrete. The use of ties consisting of twisted wire loop will not be permitted. Bolts and rods that are to be completely withdrawn shall be coated with grease.
- E. Form Stakes: Where used, form stakes shall be smooth metal, coated as required to allow for removal from hardened concrete. Wood form stakes are not permitted. Fill voids left by form stake removal with non-shrink grout.

3.3 PLUMBING, LEVELING, REPAIRING AND MAINTAINING FORMS

- A. Before concrete is placed in any form, the horizontal and vertical position of the form shall be carefully verified and all inaccuracies corrected. All wedging and bracing shall be completed in advance of placing of concrete.
- B. Boards or other form materials that have been damaged or checked or warped prior to placing of concrete shall be removed from the forms and replaced with approved materials or otherwise corrected to the satisfaction of the Engineer.
- C. Assign a sufficient number of crew to keep watch on and maintain the forms during placing of concrete. Satisfactorily remedy any displacement or looseness of forms or reinforcement before placing of concrete. No form shall be moved or altered except as may be specifically directed.

- D. Wall forms shall be set to account for movement of post-tensioned slabs that will occur due to long term shortening of slabs.

3.4 FIELD QUALITY CONTROL

- A. The Contractor shall hire the Contractor's design engineer responsible for the design of formwork over 12-feet in height, falsework or shoring to inspect the work as detailed on the reviewed shop drawings.
- B. The Contractor's design engineer responsible for design of formwork over 12-feet in height, falsework or shoring shall write a letter to the City certifying construction is in accordance with the reviewed shop drawings and meets his/her approval prior to the Contractor placing any concrete.
- C. The Contractor shall verify accuracy of items, furnished under other sections of these specifications and installed under this section.

3.5 REMOVAL OF FORMWORK, FALSEWORK AND SHORING

- A. Formwork, falsework, and shoring shall not be removed until the concrete members have acquired sufficient strength to support their weight and the loads to be superimposed thereon safely.
- B. The Contractor is solely responsible for the design, installation, and removal of temporary bracing and construction supports required to complete the project. No portion of the structure shall be considered to be self-supporting until the entire vertical and lateral load resisting system is in place.
- C. Vertical forms shall remain on columns, walls, pilasters, etc., for at least seven (7) days, and formwork over 12 feet in height shall not be removed until the Contractor's design engineer responsible for design of the formwork has approved removal.
- D. Shoring and falsework under beams, girders, slabs, etc. shall remain in place for at least 14 days and until the Contractor's design engineer responsible for design of shoring and falsework has approved removal.
- E. The Contractor shall request to have field cured compression test specimens taken for any concrete where it is planned to remove formwork, falsework, or shoring sooner than indicated above.
- F. In removing plywood forms, no metal pinch bars shall be used and special care to be taken in stripping. Start at top edge or vertical corner where it is possible to insert wooden wedges. Wedging shall be done gradually and shall be accompanied by light tapping of the plywood panels to crack them loose. Do not remove forms with a single jerk after it has been started at one end.
- G. Forms shall be left in place as long as possible to permit shrinkage away from

concrete and plywood forms shall be left in place until all other forms around are stripped and until there is no danger of damaging the architectural concrete due to other work in the vicinity.

- H. Nothing herein shall be construed as relieving the Contractor of any responsibility of the safety of the structure.
- I. After stripping, properly protect all concrete to be exposed in the finish work from damage with boards and building paper to prevent staining, spoiled edges, chips, etc.
- J. Whenever the formwork is removed during the curing period, the exposed concrete shall be cured by one of the methods specified in Section 03 30 00.

3.6 CLEAN UP

- A. Clean up shall be per special conditions. Failure to perform clean up within 24-hour notice by the City shall be considered adequate grounds for having the work done by others at the Contractor's expense.

END OF SECTION

SECTION 03 20 00

REINFORCING STEEL

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. The work included under this section consists of furnishing all material, supplies, equipment, tools, transportation, and facilities, and performing all labor and services necessary for, required in connection with or properly incidental to furnishing and installing all reinforcing bars, ties, spacing devices, inserts, and all other material required to complete installation, as described in this section of the specifications, shown on the accompanying drawings, or reasonably implied therefrom.
- B. Work Included:
1. Fabricating and installing all reinforcing steel for cast in place concrete and unit masonry.
 2. Fabrication and installing all reinforcing steel for shotcrete.
 3. Fabrication of reinforcing steel dowels to be embedded in existing concrete and existing masonry.
 4. Fabrication and installing all reinforcing steel for tilt-up precast concrete.
- C. Related Work Specified Elsewhere:
1. Concrete Formwork; Section 03 10 00
 2. Cast-in-Place Concrete; Section 03 30 00
 3. Post Installed Anchors; Section 03 70 10

1.2 REFERENCE STANDARDS

- A. The following is a list of Reference Standards referred to in this portion of the specifications:
1. ASTM A185, "Specification for Steel Wire, Plain, Welded Wire Reinforcement, Plain, for Concrete".
 2. ASTM A615, "Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement".
 3. ASTM A706, "Specification for Deformed and Low-Alloy Steel Bars for Concrete Reinforcement".
 4. ASTM A970, "Specification for Headed Steel Bars for Concrete Reinforcement".
 5. ASTM A1064, "Specification for Carbon Steel Wire and Welded Wire Reinforcement, Plan and Deformed, for Concrete".

1.3 QUALITY ASSURANCE

- A. Codes and Standards: Comply with all applicable Federal, State and Local Code and Safety Regulations. In addition, comply with the provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified:
 - 1. ACI 315, "Details and Detailing of Concrete Reinforcement", latest edition.
 - 2. ACI 318, "Building Code Requirements of Reinforced Concrete", latest edition.
 - 3. AWS D1.4, "Structural Welding Code- Reinforcing Steel", latest edition.

- B. Mill Certificates: The Contractor shall provide Mill Certificates for reinforcing steel in accordance with the requirements of Part 1.05, "Submittals" of this specification section. When Mill Certificates cannot be provided, laboratory test reports shall be provided in accordance with the requirements of Part 1.05, "Submittals" of this specification section.

- C. Sampling, Testing, and Inspection:
 - 1. General
 - a. All materials and work shall be subject to inspection at the mill, the fabrication shop, and at the building site. Material or workmanship not complying fully with the drawings, and/or specifications will be rejected.
 - b. If the City, through oversight or otherwise, has accepted material or work which is defective or contrary to specifications, this material or work, regardless of state of completion, may be rejected.
 - 2. The Contractor shall employ an independent testing laboratory to perform the sampling and testing shown on the contract Drawings, and submit certified test results to the City.
 - 3. Contractor:
 - a. The Contractor shall cooperate with and notify City at least 24 hours in advance of inspections required and shall provide samples, test pieces, and facilities for inspection without extra charge.
 - b. The Contractor shall identify each lot of fabricated reinforcing steel to be shipped to the site by assigning an individual lot number that identifies steel by heat number and shall be tagged in such a manner that each such lot can be accurately identified at the job site.
 - c. The Contractor shall remove all unidentified reinforcing steel, anchorage assemblies and bar couplers received at the site.

1.4 SUBMITTALS

- A. General Requirements:
 - 1. Construction, fabrication, or ordering of materials shall not begin until Contractor has received submittals reviewed by City governing all aspects of the intended work.

- B. Shop Drawings:
1. Shop Drawings shall be submitted that show diagrammatic elevations of all walls, footings, columns, beams, slabs, etc., at a scale sufficiently large to show clearly the positions and erection marks of reinforcing bars, their dowels, and splices.
 2. Use same bar marks on diagrammatic elevations as used on the bar schedule.
 3. Shop drawings shall also show details for congested areas and connections.
 4. Shop Drawings used in field must be reviewed copies.
 5. Contract drawings shall not be reproduced in whole or in part. Contract drawings modified into shop drawings will be returned without review.
 6. Revised submittals shall have clear indications of revised or new information. Clouding is an acceptable form of identification.
- C. Product Data: Manufacturer's catalog sheets including instructions for use and description of application shall be provided on each of the following items intended for use on project:
- D. Mechanical anchorage devices for butt splices.
- E. Mill Certificates:
1. The Contractor shall provide Mill Certificates for each size of bar for each heat to be used on project.
 2. Mill Certificates shall include name of mill, date of rolling, date of shipping to fabricator and shall be signed by fabricator certifying that each material complies with or exceeds the specified requirements. A Mill Certificate shall be furnished with each lot of material delivered to the project and the lot shall be clearly identified in the Certificate.
 3. When Mill Certificates cannot be provided, the Contractor shall hire a professional testing laboratory to verify compliance and provide laboratory test reports. The Contractor shall pay for the cost of testing.
- F. Laboratory Test Reports:
1. Laboratory test reports shall show the name of testing agency; date of testing, types of tests performed and shall be signed by a principal of the testing agency who is a registered Civil Engineer in the State of California.
 2. When required by other portions of these specifications, laboratory test reports shall be submitted for each size of bar tested for each heat to show compliance with appropriate ASTM Standards and these specifications.

1.5 STORAGE OF MATERIALS

- A. Store reinforcement during fabrication and at site to avoid excessive rusting or coating with grease, oil, dirt, or other objectionable materials.

1.6 SEQUENCING AND SCHEDULING

- A. Coordinate work with all trades so as not to interfere with the work of other trades. Bring interferences between trades to the City's attention and resolve before any concrete is placed.

PART 2 PRODUCTS

2.1 REINFORCING BARS

- A. Bars for reinforcement listed below shall conform to the requirements of ASTM A706, Grade 60, except as allowed in ACI 318 Section 21.1.5.
 - 1. Chord Bars
 - 2. Vertical Bars, Columns
 - 3. Vertical Bars, Pilasters
 - 4. Vertical and Horizontal Bars in Shear Walls, except Ties
 - 5. All Reinforcing Bars to be Welded
- B. Bars for reinforcement not noted above shall be deformed, intermediate grade steel conforming to the requirements of ASTM A615, Grade 60.

2.2 WIRE

- A. All wire for concrete reinforcement shall conform to "Specifications for Cold-Drawn Steel Wire for Concrete Reinforcement," ASTM A1064.
- B. Holding wire for fusion welding shall conform to ASTM A1064 or ASTM A496.

2.3 MESH

- A. All wire fabric mesh shall conform to "Specifications for Wire Fabric for Concrete Reinforcement," ASTM A185.

2.4 WELDING ELECTRODES

- A. Welding electrodes shall be per Table 5-1 of AWS D1.4.

2.5 MECHANICAL COUPLING DEVICES

- A. Mechanical coupling devices shall develop 125 percent of the minimum yield strength of the bars spliced.

2.6 OTHER MATERIALS

- A. All other materials, not specifically described by these specifications but required for complete and proper placement of reinforcement shall be new, first quality of their respective kinds, and subject to the approval of the City.

REINFORCING STEEL

PART 3 EXECUTION

3.1 EXISTING CONDITIONS

- A. Prior to all work of the section, carefully inspect the installed work of other trades and verify that all work is sufficiently complete to permit the start of work under this section and that the completed work of this section will be in complete accordance with the original design and the reviewed shop drawings. In the event of discrepancy, immediately notify the City in writing.
- B. In the event conduits, pipes, inserts, sleeves, or any other items interfere with placing the reinforcement as indicated on the drawings or approved shop drawings, or as otherwise required, immediately notify the City and obtain approval on procedure before placement of reinforcement is started.

3.2 FABRICATION

- A. Bends for reinforcing steel shall be made in accordance with ACI 318 latest edition. Bend all bars cold. Do not field bend reinforcing steel in a manner that will injure material, cause the bars to be bent on too tight a radius, or that is not indicated as allowed on drawings or permitted by Design Engineer. Do not straighten bent or kinked bars for use on project without permission of Design Engineer. Replace bars with kinks or bends not shown on the Drawings.
- B. The use of fusion welding for attaching carrying wires to the foundation rebar work is acceptable with the following provisions:
 - 1. Fusion welding shall be to the stirrups and is not allowed to longitudinal reinforcing steel.
 - 2. Fusion welding of holding wires shall not occur on a bent portion of a reinforcing bar. After holding wire has been fusion welded to a reinforcing bar, that bar may not be bent where the fusion weld occurs.
 - 3. All reinforcing steel to be welded shall comply with ASTM A706.
 - 4. The welding process shall be as outlined in ASTM A497.
 - 5. The contractor shall submit a complete shop welding program outlining the type of the specific fusion welding machine.
 - 6. Fusion welding shall have periodic special inspection of the in-plant welding, including review of the setup of the machine prior to the start of welding and testing of samples.

3.3 PLACING

- A. All reinforcement shall be placed in strict conformity with the requirements of the engineering drawings, both as to location, position and spacing of members. It shall be supported and secured against displacement by the use of adequate and proper wire supporting and spacing devices, tie wires, etc. so that it will remain in its proper position in the finished structure.

- B. Preserve clear space between parallel bars of not less than 1 1/2 times the nominal diameter of round bars and in no case let the clear distance be less than 1 1/2 inches nor less than 1-1/3 times the maximum size of aggregate for concrete. Bars placed in shotcrete shall have a minimum clearance between bars of 2 1/2" for No. 5 and smaller and 6 bar diameters for bars larger than No. 5.
- C. Lap splices shall be contact lap splices in accordance with ACI 318 unless noted otherwise on the Contract Drawings. Bars shall be wired together at laps. Wherever possible, stagger splices in adjacent bars. Make all splices in wire fabric at least 1 1/2 meshes wide or 12", whichever is greater. When splicing in areas to receive shotcrete, lap splices shall be non-contact with at least 2" clearance between bars.
- D. Butt splices shall be accomplished by mechanical anchorage devices.

3.4 CLEANING REINFORCEMENT

- A. Take all means necessary to ensure that steel reinforcement, at the time concrete is placed around it, is completely free from rust, dirt, loose mill scale, oil, paint and all coatings which will destroy or reduce the bond between steel and concrete.

3.5 FIELD QUALITY CONTROL

- A. Inspection: The City will perform the inspections shown on the contract drawings.

END OF SECTION

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL**1.1 DESCRIPTION OF WORK**

- A. The work included under this section consists of furnishing all material, supplies, equipment, tools, transportation, and facilities, and performing all labor and services necessary for, required in connection with or properly incidental to furnishing, and installing cast-in-place concrete work as described in this section of the specifications, shown on the accompanying drawings, or reasonably implied therefrom, except as hereinafter specifically excluded.
- B. Work Included:
1. Design of Concrete Mixes.
 2. All concrete and cement finishing; all surface treatment and curing, including non-slip finishes and color work.
 3. Installation of all reglets, bolts, anchors, cans, sleeves, column anchor bolts, etc., whether furnished under this section or by others (except cans and sleeves required under the Electrical and Mechanical Divisions).
 4. The furnishing of all items required to be or shown on the drawings as embedded in concrete, which are not specifically required under other sections.
 5. Setting headers and screeds. Curing and protecting concrete.
 6. Grouting of column bases and post-tensioning anchor recesses.
 7. Routing out cracks and sawcutting control joints as required by waterproofing.
 8. Grouting between bearing plates, channels, etc. and bearing surfaces.
 9. Drilling of existing concrete and masonry for placement of bars, dowels, and rods.
- C. Grouting of bars, dowels, and rods in existing concrete and existing masonry.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

- A. Concrete Formwork; Section 03 10 00
- B. Reinforcing Steel; Section 03 20 00

1.3 REFERENCE STANDARDS

- A. The following is a list of Reference Standards referred to in this portion of the Specification:

CAST-IN-PLACE CONCRETE

1. ASTM C31 "Method of Making and Curing Concrete Test Specimens in the Field"
2. ASTM C33 "Specification for Concrete Aggregates "
3. ASTM C39 "Test Method for Compressive Strength of Cylindrical Concrete Specimens"
4. ASTM C42 "Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete"
5. ASTM C94 "Specification for Ready Mixed Concrete"
6. ASTM C143 "Test Method for Slump of Portland Cement Concrete"
7. ASTM C150 "Specification for Portland Cement"
8. ASTM C157 "Test Method for Length Change of Hardened Hydraulic Cement Mortar and Concrete"
9. ASTM C171 "Specification for Sheet Materials for Curing Concrete"
10. ASTM C172 "Method of Sampling Freshly Mixed Concrete"
11. ASTM C173 "Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method"
12. ASTM C231 "Test Method for Air Content of Freshly Mixed Concrete by Pressure Method"
13. ASTM C260 "Specification for Air-Entraining Admixtures for Concrete"
14. ASTM C309 "Specification for Liquid Membrane-Forming Compounds for Curing Concrete"
15. ASTM C330 "Specification for Lightweight Aggregates for Structural Concrete"
16. ASTM C494 "Specification for Chemical Admixtures for Concrete"
17. ASTM C618 "Coal Fly Ash and Raw or Calcined Natural Pozzolan for use as a Mineral Admixture in Concrete"
18. ASTM C881 "Specification for Epoxy-Resin-Base Bonding Systems for Concrete"

1.4 QUALITY ASSURANCE

- A. Codes and Standards: Comply with all Federal, State and Local Codes and Safety Regulations. In addition, comply with the provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified:
 1. ACI 301, "Specifications for Structural Concrete for Buildings", current edition.
 2. ACI 318, "Building Code Requirements of Reinforced Concrete", current edition.
 3. Concrete Reinforcing Steel Institute, "Manual of Standard Practice".
 4. ASTM C94, "Specifications for Ready Mixed Concrete".
 5. California Building Code, current edition.
- B. Certificates of Compliance: The Contractor shall provide Certificates of Compliance for concrete materials in accordance with the requirements of Part 1.05, "Submittals", of these specifications. When Certificates of Compliance cannot be provided, laboratory test reports shall be provided in accordance with

the requirements of Part 1.05, "Submittal" of these specifications.

- C. Engineer's Review: The Engineer will review the mix designs prepared by the testing laboratory hired by the Contractor.
- D. Sampling, Testing and Inspection:
 - 1. General:
 - a. All materials and work shall be subject to inspection at the batch plant, and at the building site. Material or workmanship not complying fully with the drawings, and/or specifications will be rejected.
 - b. If the City, through oversight or otherwise, has accepted material or work which is defective or contrary to specifications, this material or work, regardless of state of completion, may be rejected.
- E. Contractor shall employ an independent testing laboratory to perform the sampling and testing shown on the contract Drawings, and submit certified test results to the City.
- F. Contractor:
 - 1. The Contractor shall cooperate with and notify City at least 24 hours in advance of inspection required and shall provide samples and facilities for inspection without extra charge.
 - 2. The Contractor shall hire a professional testing laboratory to provide concrete mix designs for each type of concrete on the job. Each mix design shall be verified by trial batch tests or laboratory test reports and certified to by a principal of the laboratory who is a registered Civil Engineer in the State of California and submitted to the City for review. Laboratory test reports, in order to be acceptable, must indicate that not less than 90 percent of at least 20 consecutive 28-day tests exceed the specified strength, and none of said tests are less than 95 percent of specified strength.

1.5 SUBMITTAL

- A. General Requirements:
 - 1. Construction and fabrications or mixing of materials shall not begin until Contractor has received submittals reviewed by City governing all aspects of the intended work.
- B. Mix Designs:
 - 1. Mix designs shall be submitted for each class of concrete on the job and shall show names and brands of all materials, proportions, slump, strength, gradation of coarse and fine aggregates, and location to be used on job.
 - 2. Mix designs for concrete designated by compressive strength shall be proportioned on the basis of field experience or trial mixtures, as

- described in ACI 318 Section 5.3.
3. Drying shrinkage data should be provided in the test histories or trial mixtures for suspended slabs and slabs on grade.
- C. Concrete Placement Schedule: The Contractor shall submit a concrete placement schedule which shall show all proposed construction joint locations, limits of each placement sequence, order of placement and type of joint proposed at each joint location.
- D. Product Data: Manufacturer's catalog sheets including instructions for use and description of application shall be provided on each of the following materials:
1. Epoxies
 2. Grout
 3. Admixtures
 4. Curing Compounds
 5. Chemical Hardener
 6. Moisture Barriers
 7. Waterstops
- E. Samples: Submit samples of materials as specified and as otherwise required by City, including names, sources and descriptions.
- F. Certificates Of Compliance:
1. The Contractor shall provide Certificate of Compliance for each type of aggregate, cement and admixture to be used in each class of concrete or a Certificate of Compliance for each class of concrete.
 2. Certificates of Compliance shall include the name, source, and description of all materials used in each class of concrete and shall be signed by the concrete supplier certifying that each material item complies with, or exceeds the specified requirements. Certificates of Compliance shall be furnished 60 days in advance of any concrete pours.
 3. When Certificates of Compliance cannot be provided, the Contractor shall hire a professional testing laboratory to verify compliance of each type of material to be used in each Class of Concrete. The cost of testing shall be paid for by the Contractor.
- G. Laboratory Test Reports
1. Laboratory test reports shall show the name of testing agency, date of testing, types of tests performed and shall be signed by a principal of the testing agency who is a registered Civil Engineer in the State of California. Laboratory tests shall not be older than eight (8) months and shall certify that the tested materials meet the specified standards.
 2. Laboratory test reports for concrete mix designs shall clearly identify each material or mix number of each mix tested to verify the correlation between the tested mix designs and the proposed mix designs.
 3. When required by other portions of these specifications, laboratory test reports shall be submitted for each material to be used in each class of

concrete, or for each mix design and shall show compliance with appropriate ASTM Standards and these specifications.

- H. Weight and Batch Tags:
 - 1. Weight and batch tags will be supplied to the Engineer upon request.
- I. Sequencing and scheduling:
 - 1. Obtain information and instructions from other trades and suppliers in ample time to schedule and coordinate the installation of items furnished by them to be embedded in concrete so provision for their work can be made without delaying the project.
 - 2. Do any cutting and patching made necessary by failure or delay in complying with these requirements, at no cost to City.

PART 2 - PRODUCTS

2.1 CEMENTITIOUS MATERIALS

- A. Portland Cement
 - 1. Portland cement shall conform to ASTM C150 for Type II modified cement. Use a single, approved standard brand throughout work.

2.2 Fly Ash

- A. Fly ash shall conform to ASTM C618 for Class F fly ash.

2.3 GROUND GRANULATED BLAST FURNACE SLAG

- A. Slag shall conform to ASTM C989, Grade 100 or 120.

2.4 CONCRETE AGGREGATES

- A. Aggregates for hardrock concrete shall conform to ASTM C33.
- B. Aggregates for light-weight concrete shall conform to ASTM C330.
- C. Fine Aggregate: Use washed natural sand of hard, strong particles and not more than 1% of deleterious materials. Not more than 2.5% shall pass the No. 200 sieve. Fineness modulus - 2.65 to 3.05.
- D. Coarse Aggregate: Use clean, sound-washed gravel or crushed rock. Not more than 1% deleterious material or 5% flat, thin, elongated or laminated material allowed. Cleanness value shall not be less than 75 when tested in accordance with California Test 227.

2.5 WATER

- A. Mixing Water for concrete shall be clean and free from deleterious amounts of acids, alkalis or organic materials.

2.6 NONSHRINK GROUT

- A. Nonshrink grout shall be pre-mixed, high strength, flowable grout which does not shrink as it cures. Nonshrink grout shall attain a minimum compressive strength of 5000 psi at 7 days. Subject to compliance with requirements provide one of the following:
 - 1. Metallic
 - a. Embeco 636; BASF.
 - b. SikagROUT 212; Sika Chemical Company.
 - c. Burke Metallic Spec Grout; Dayton Superior Corporation.
 - 2. Non-Metallic
 - a. Masterflow 928; BASF.
 - b. SonogROUT 10K; BASF.
 - c. Sure-Grip Grout; Dayton Superior Corporation.

2.7 CURING PRODUCTS

- A. Liquid membrane curing compounds: Liquid membrane curing compounds shall conform to the requirements of ASTM C309.
- B. Waterproofing Paper: Waterproofing paper for curing concrete shall conform to the requirements of ASTM C171.

2.8 AIR-ENTRAINING ADMIXTURE

- A. Air-entraining admixtures shall conform to the requirements of ASTM C260. Subject to that compliance, provide one of the following:
 - 1. Sika Aer; Sika Corporation.
 - 2. MB-VR or MB-AE; BASF.
 - 3. Dorex AEA; W.R. Grace.

2.9 WATER-REDUCING ADMIXTURE

- A. Water-reducing admixtures shall conform to the requirements of ASTM C494, Type A, and contain not more than 0.1% chloride ions. Subject to compliance with requirements, provide one of the following:
 - 1. Eucon WR-75; Euclid Chemical Company.
 - 2. MasterPozzolith 322; BASF.
 - 3. Plastocrete 160; Sika Chemical Corporation.

2.10 HIGH-RANGE WATER-REDUCING ADMIXTURE (SUPER PLASTICIZER)

- A. Super Plasticizer shall conform to the requirements of ASTM C494, Type F or Type G and contain not more than 0.1% chloride ions. Subject to compliance with requirements, provide one of the following:
1. ADVA 190; W.R. Grace.
 2. Sikament; Sika Chemical Corporation.
 3. Pozzolith 400; BASF.

2.11 WATER-REDUCING, RETARDING ADMIXTURE

- A. Water-reducing, retarding admixtures shall conform to the requirements of ASTM C494, Type D, and contain not more than 0.1% chloride ions. Subject to compliance with requirements, provide one of the following:
1. Pozzolith 300-R; BASF.
 2. Daratard; W.R. Grace.
 3. Plastiment; Sika Chemical Corporation.

2.12 WATERSTOPS

- A. General: Provide flat, dumbbell type or centerbulb type waterstops at construction joints and other joints as indicated. Size to suit joints.
- B. Rubber Waterstops: Rubber Waterstops shall conform to the requirements of Corps of Engineers CRD-C513. Subject to compliance with requirements, provide one of the following:
1. Dayton Superior Corporation
 2. Progress Unlimited
 3. Williams Products

2.13 CONCRETE

- A. Concrete Mix Requirements: See plans for concrete mix design requirements and specifications.
- B. Lightweight Concrete Mix Requirements: Lightweight concrete shall have a maximum air dried weight of 115#/ft³, a minimum 28-day compressive strength, minimum cement concrete and maximum water/cement ratio as listed in the tables above.
- C. Slumps noted on the plans are for concrete without admixtures to be consolidated using vibration. Formwork constraints, congestion of rebar, and pumping of concrete may require increased slump beyond the slump listed on the plans. The contractor shall adjust the slump up to 8-inches max using admixtures as necessary to provide workability and consistency to permit concrete to be worked readily into forms and around reinforcement under conditions of placement to be employed without segregation or excessive

bleeding. All admixtures shall be noted in the submitted mix design and are subject to the Engineer's review. Slump shall not exceed 3-inches for any concrete placement where top of surface slopes more than 2%.

- D. At Contractor's option, an air entraining agent conforming to the latest revision of ASTM Specification C260 may be added to the concrete to provide entrained air. Air-entraining shall not exceed $3\% \pm 1.5\%$ without the approval of the Design Engineer.
- E. Drying Shrinkage: The average "Drying Shrinkage" of the concrete after 21 days of drying shall not exceed 0.040 in suspended slabs and 0.048 percent for slabs on grade.

2.14 CONTROL JOINTS

- A. Control joints shall be sawcut using SOFF-CUT International or equal.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

- A. Produce concrete of required consistency and strength to present appearance satisfactory to the City.
- B. Use only one brand of cement unless otherwise authorized by the City.
- C. Embedded Items: Place all pipe sleeves, inserts, anchors bolts, angle frames, ties and other embedded items required for adjoining work or for its support prior to concreting. Embedded items shall be positioned accurately and supported against displacement. Voids in sleeves, inserts and anchor bolt slots shall be filled temporarily with a readily removable material to prevent entry of concrete into the voids.
- D. Store materials delivered to the job and protect from foreign matter and exposure to any elements which would reduce the properties of the material.
- E. When concrete is cast against existing concrete the surface shall be cleaned and roughened by sandblasting, grinding, bush hammering or other suitable means. Wet the surface until it is damp, but without visible free water.

3.2 EXISTING CONCRETE SURFACE PREPARATION

- A. Where concrete is to be cast against existing concrete, prepare the surface of existing concrete as follows, unless noted otherwise:
 - 1. Chip or scarify surface as required to remove all spalled, severely cracked, deteriorated, loose or unsound material.

2. Chip or scarify any area as required to remove offsets which would cause an abrupt change in thickness of the new concrete. Taper edges to leave no square shoulders at the perimeter of a cavity.
 3. Sand-blast or water-blast all surfaces to receive new concrete to remove all dirt, paint, grease, fractured concrete, oil, or other substances that could interfere with the bond of the newly placed concrete. Clean forms and reinforcing of drippings. Clear away debris by compressed air.
 4. Wet the surface until it is damp, but without visible free water.
- B. Where noted on the drawings to 'intentionally roughen' surface, prepare the surface of existing concrete as follows:
1. Chip or scarify surface as required to remove all spalled, severely cracked, deteriorated, loose or unsound material.
 2. Chip or scarify any area as required to remove offsets which would cause an abrupt change in thickness of the new concrete. Taper edges to leave no square shoulders at the perimeter of a cavity.
 3. Sand-blast using coarse sand or water-blast to clean and roughen to 1/4" amplitude all surfaces to receive new concrete, exposing coarse aggregate solidly embedded in mortar matrix. Clean forms and reinforcing of drippings. Clear away debris by compressed air.
 4. Wet the surface until it is damp, but without visible free water.

3.3 MIXING

- A. Use ready-mixing concrete complying with ASTM C94 and with the requirements of Contract Documents. Mix for a period of not less than ten (10) minutes; at least three (3) minutes of mixing period shall be immediately prior to discharging at the job.
- B. Introduction of additional water after initial mixing not permitted.

3.4 WEATHER REQUIREMENTS

- A. Do not mix or place when atmospheric temperature is below 40 degrees F. or when conditions indicate temperature will fall below 40 degrees within 72 hours. Reinforcement, forms, and ground which concrete will contact shall be completely free of frost. Keep concrete and formwork at a temperature not less than 50 degrees F. for not less than 72 hours after pouring.
- B. When temperature is above 80 degrees F. Contractor shall take precautions to insure that rebar temperature does not exceed ambient temperature.
- C. Temperature of concrete at time of placing shall not be less than 50 degrees F. and not more than 85 degrees F.

3.5 CONVEYING AND PLACING

- A. All concrete shall be mixed and delivered in accordance with the requirements of ASTM C94. All concrete shall be placed, finished and cured and all other pertinent construction practices shall be in accordance with the requirements of ACI 301.
- B. It is the contractor's responsibility to provide a concrete mix suitable for the job site conditions. Workability and pumpability may be increased by methods noted in Article 2.13.
- C. Notify City at least 48 hours before placing any concrete.
- D. Before placing, clean mixing and conveying equipment, clean forms and space to be occupied by concrete and wet forms. Remove ground water until completion of work.
- E. Place no concrete in any unit of work until all formwork has been completely constructed, all reinforcements secured in place, all items to be built into concrete are in place, and form ties at constructions joints tightened.
- F. Concrete shall be placed so that a uniform appearance of surfaces will be obtained. The concrete will be free of all rock pockets, honeycombs and voids. Deposit as nearly as practical in its final position.
- G. The subgrade must be moist when the concrete is placed for floor slab to prevent excessive loss of water from the concrete mix.
- H. Carry on concreting, once started, as a continuous operation until the section of approved size and shape is completed. Make pour cut-offs of approved detail and location.
- I. Handle concrete as rapidly as practicable from mixer to place of deposit by methods which prevent separation or loss of ingredients. Deposit as nearly as practicable in final position to avoid rehandling or flowing. Do not drop concrete freely where reinforcing bars will cause segregation, nor drop freely more than four feet. Deposit to maintain a plastic surface approximately horizontal. In walls, deposit in horizontal layers not over eighteen inches deep. In pouring columns, walls or thin sections of considerable heights, use openings in forms, elephant trunks, tremies or other approved devices which permit concrete to be placed without segregation or accumulation of hardened concrete on forms or metal reinforcement above the level of the concrete. Install so concrete will be dropped vertically.
- J. Concrete that has partially hardened shall not be deposited in the work.
- K. All concrete floors except sloping to drains shall be brought to a level not exceeding one-eighth inch (1/8") in a 10'-0" measured with a straight edge.

CAST-IN-PLACE CONCRETE

- L. Vibrating: Employ as many vibrators and tampers as necessary to secure the desired results. Minimum: one per each 20 cubic yards of concrete placed per hour. Eliminate the following practices: Pushing of concrete with vibrator; external vibration of forms; allowing vibrator to vibrate against reinforcing steel where steel projects into green concrete; allowing vibrator to vibrate contact faces of forms. Vibrators shall function at a minimum frequency of 3600 cycles per minute when submerged in concrete. Supplement vibration by forking and spading along the surfaces of the forms and between reinforcing whenever flow is restricted.
- M. Tremie Concrete: Tremie concrete is a special procedure for placing concrete underwater. Tremie concrete shall be placed by pump or a gravity feed pipe. If a gravity feed pipe is used it shall be 8" minimum diameter and shall be affixed with a shutoff device at the bottom that will allow filling of the pipe with concrete without allowing water to enter. The trunk of the pump or gravity pipe shall be placed at the bottom of caisson prior to placing any concrete. The pump trunk or gravity pipe shall be removed slowly as the caisson is filled insuring that the end of pump trunk or gravity pipe is embedded in concrete a minimum of 1 foot.

3.6 CURING

- A. General: Freshly deposited concrete shall be protected from premature drying and excessively hot or cold temperatures and shall be maintained with minimum moisture loss at a relatively constant temperature for the period of time necessary for the hydration of the cement and proper hardening of the concrete.
- B. Initial Curing:
 - 1. Initial curing shall immediately follow the finishing operation. Concrete shall be kept continuously moist at least overnight. One of the following material or methods shall be used: Ponding or continuous sprinkling; absorptive mat or fabric kept continuously wet.
 - 2. Curing compounds conforming to ASTM C309. Such compounds shall be applied in accordance with the recommendations of the manufacturer and shall not be used on any surface against which additional concrete or other cementitious finishing materials are to be bonded, where epoxy flooring is called for, where concrete topping is to receive waterproofing membrane, nor on surfaces where such curing is prohibited by the project specifications.
- C. Final Curing:
 - 1. Immediately following the initial curing and before the concrete has dried, additional curing shall be accomplished by one of the following materials or methods:
 - a. Continuing the method used in initial curing.
 - b. Waterproofing paper conforming to the requirements of ASTM C171.
 - c. Other moisture-retaining coverings as approved.

- D. **Duration of Curing:** The final curing shall continue until the cumulative number of days or fractions thereof, not necessarily consecutive, during which temperature of the air in contact with the concrete is above 50 degrees F. has totaled seven days. If high-early-strength concrete has been used, the final curing shall continue for a total of three days. Rapid drying at the end of the curing period shall be prevented.
- E. **Formed Surfaces:** Steel forms heated by the sun and all wood forms in contact with the concrete during the final curing period shall be kept wet. If forms are to be removed during the final curing period, one of the above curing materials or methods shall be employed immediately. Such curing shall be continued for the remainder to the curing period.
- F. **Architecturally Exposed Slabs:** Architecturally exposed slabs shall be cured by moisture-retaining cover curing. Thoroughly wet the surface of the concrete and then cover with moisture-retaining cover, placed in widest practical width, with edges lapped at least 12 inches and extended 18 inches beyond the area of concrete to be cured, and seal with waterproofing tape. Maintain a film of water under the cover through the curing period by rolling back and rewetting. Immediately repair any holes or tears that occur using cover material and waterproof tape. Start moisture-retaining cover curing as soon as free water has disappeared from concrete surface following finishing. Curing shall be maintained for 7 days.

3.7 CONCRETE FINISHES

- A. **Finishes:**

<u>Element:</u>	<u>Finish</u>
Exposed foundation surfaces	Rough troweled finish
Permanently exposed formed surfaces	Grout cleaned and sacked
Slabs	Smooth troweled finish

- B. **Grout Cleaned Finish:** After the concrete still freshly hardened has been pre-dampened, a slurry consisting of one part cement and one and one-half parts sand passing the No. 16 sieve, by damp loose volume, shall be spread over the surface with clean burlap pads or sponge rubber floats. Any surplus shall be removed by scraping and then rubbing with clean burlap. The finish shall be cured in an approved manner. Sample to be approved by City.
- C. **Troweled Finish:** Where a troweled finish is specified, the surface shall be finished first with power floats, then with power trowels, and finally with hand trowels. The first troweling after power floating shall be done by a power trowel and shall produce a smooth surface which is relatively free of defects but which

may still contain some trowel marks. Additional trowelings shall be done by hand after the surface has hardened sufficiently. The final troweling shall be done when a ringing sound is produced as the trowel is moved over the surface. The surface shall be free of any trowel marks, uniform in texture and appearance.

- D. Broom or Belt Finish: Slabs shall be given a coarse traverse scored texture by drawing a broom or burlap belt across the surface. Slabs with less than 6% slope shall receive a medium broom finish. Slabs with greater than 6% slope shall receive a heavy broom finish. This operation shall follow immediately after troweling.

3.8 PROTECTION

- A. Protect from injurious action of elements and defacement of any nature during operations.

3.9 CONSTRUCTION JOINTS

- A. Location and details of construction joints shall be as indicated on Drawings, specified, or as approved by the Design Engineer. Locate so as not to impair the strength of the structure. Submit drawings with construction joints clearly defined, and schedule of pouring operations for approval in accordance with Part 1.05 "Submittals" of this specification section, prior to starting concreting.
- B. Sandblast all construction joints using coarse sand or waterblast to clean and roughen entire surface of joint, exposing coarse aggregate solidly embedded in mortar matrix. Clean forms and reinforcing of drippings. Clear away debris by compressed air.

3.10 CONTROL JOINTS

- A. Provide as indicated on the drawings.

3.11 PATCHING AND CLEANING

- A. After forms are removed, remove projecting fins, bottles, form ties, nails, etc. not necessary for the work or cut back one inch from the surface. Joint marks and fins in exposed work shall be smoothed off and cleaned as directed by the City.
- B. Repair defects in concrete work as directed by the City. Chip voids and stone pockets to a depth of one inch or more as required to remove all loose material. Voids, surface irregularities, chipped areas, etc., shall be filled by patching, gunite or rubbing, as directed by the City. Repaired surfaces shall duplicate appearance of unpatched work.

- C. Clean exposed concrete surfaces and adjoining work stained by leakage of concrete to approval of the City.

3.12 CLEANUP

- A. In addition to the requirements of Supplementary General Conditions, clean up all concrete and cement work on completion of this portion of the work, except protective coatings or building papers shall remain until floors have completely cured or until interior partitions are to be installed.

3.13 GROUTING

- A. Column base plates: The grout shall be mixed and placed in strict accordance with manufacturer's instructions. Care shall be taken in the grouting to ensure that there are no voids or air pockets, and that there is full bearing between the base plates and the grout.
- B. Bearing plates and channels: The space between plates and channels bearing against masonry or concrete shall be filled with grout when required by the Engineer. The grout shall be mixed and placed in strict accordance with manufacturer's instructions. Care shall be taken in the grouting to ensure that there are no voids or air pockets, and that there is full bearing between the bearing plates and channels and the grout.
- C. Post-tensioning Anchor Recesses.

3.14 DEFECTIVE WORK

- A. General: Work considered to be defective may be ordered by the City to be replaced in which case the Contractor shall remove the defective work at his expense. Work considered to be defective shall include, but not be limited to, the following:
 1. Concrete in which defective or inadequate reinforcing steel has been placed.
 2. Concrete in incorrectly formed, or not conforming to details and dimensions on the drawings or with the intent of these documents, or concrete the surfaces of which are out of plumb or level.
 3. Concrete below specified strength.
 4. Concrete not meeting the maximum allowable drying shrinkage requirements.
 5. Concrete containing wood, cloth, or other foreign matter, rock pockets, voids, honeycombs, cracks or cold joints not scheduled or indicated on the drawings.

3.15 CORRECTION OF DEFECTIVE WORK

- A. The Contractor shall, at his expense, make all such corrections and alleviation measures as directed by the City.
- B. Concrete work containing rock pockets, voids, honeycombs, cracks or cold joints not scheduled or indicated on the drawings, shall be chipped out until all unconsolidated material is removed.
- C. Secure approval of chipped-out areas before patching. Patch per ACI 301, or as ordered by the City.

3.16 FIELD QUALITY CONTROL

- A. Inspections: A Third Party hired by the Contractor will perform inspections shown on the contract drawings.
- B. Engineer Review: The Engineer shall inspect the surfaces between plates and channels, bearing on masonry and concrete to determine if grouting of space is necessary. If grouting of space is necessary, the City will inspect the grouting procedure.
- C. Sampling and Testing: The Contractor will perform sampling and testing shown on the contract drawings.
- D. Test Results: Test results shall be reported in writing to Engineer and Contractor within 7 days after tests are made. Test results of less than .6 fc' at 7 days and less than fc' at 28 days shall be reported in writing to the Engineer and Contractor within 48 hours after tests are made. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing services, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials; compressive breaking strength and type of break for both 7-day tests and 28-day tests. Strength level of concrete will be considered satisfactory if the averages of sets of three consecutive strength test results equal or exceed specified compressive strength, and no individual strength test result falls below the specified compressive strength by more than 500 psi. Concrete batch plant weight tags shall be collected at the site and submitted to the Engineer.
- E. When the strength of field-cured cylinders is less than 85% of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing in-place concrete.
- F. Additional Tests: The Contractor will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Engineer. Contractor

may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods as directed. Contractor shall pay for such tests conducted, other additional testing as may be required, and cost of repairing areas of structure tested when unacceptable concrete is verified.

END OF SECTION

SECTION 03 70 10

POST INSTALLED ANCHORS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. The work included under this section consists of furnishing all material, supplies, equipment, tools, transportation, and facilities, and performing all labor and services necessary for, required in connection with or properly incidental to furnishing and installing dowels in existing concrete, and masonry as described in this section of the specifications, shown on the accompanying drawings, or reasonably implied therefrom, except as hereinafter specifically excluded.
- B. Work Included:
 - 1. Installation of adhesive anchors in existing concrete and masonry.
 - 2. Installation of expansion anchors in existing concrete and masonry.
 - 3. Installation of threaded anchors in existing concrete and masonry.
- C. Related Work Specified Elsewhere:
 - 1. Reinforcing Steel; Section 03 20 00
 - 2. Cast-in-Place Concrete; Section 03 30 00

1.2 QUALITY ASSURANCE

- A. Codes and Standards: Comply with all Federal, State and local codes and safety regulations. In addition, comply with the provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified:
 - 1. ACI 318, "Building Code Requirements of Reinforced Concrete", current edition.
- B. California Building Code, current edition.
Testing and Inspection: The Contractor shall employ an independent testing laboratory to perform the inspections and tests, shown on the contract drawings and submit certified test results. The Contractor will cooperate with and notify the City at least 24 hours in advance of inspections required.

1.3 SUBMITTALS

- A. General Requirements:
 - 1. Construction and fabrication shall not begin until Contractor has received submittals reviewed by the City governing all aspects of the intended work.

- B. Product Data: Manufacturer's catalog sheets including instruction for use and description of application shall be provided on each of the following materials:
1. Adhesive Anchors - In addition to Manufacturer's catalog sheets the Contractor shall provide a written description of where each adhesive material will be used for each different application and an explanation of why the particular material was selected.
 2. Expansion Anchors - In addition to Manufacturer's catalog sheets the Contractor shall provide a written description of where each anchor will be used for each different application and an explanation of why the particular material was selected.
 3. Threaded Anchors - In addition to Manufacturer's catalog sheets the Contractor shall provide a written description of where each anchor will be used for each different application and an explanation of why the particular material was selected.

PART 2 - PRODUCTS

2.1 ADHESIVE ANCHORING SYSTEMS FOR CONCRETE

- A. Adhesive anchoring systems shall have current ICC or IAPMO reports for shear and tension in cracked concrete per the requirements of the California Building Code. Adhesive anchors shall be used in strict accordance with manufacturer's recommendations. Subject to compliance with requirements provide one of the following:
1. HIT-RE 500 V3; Hilti [ICC ESR 3814].
 2. HIT HY 200; Hilti [ICC ESR 3187].
 3. SET-XP; Simpson Strong Tie [ICC ESR 2508].
 4. AT-XP; Simpson Strong Tie [IAPMO UES ER 263].
 5. PURE 110+; DeWalt\Powers Fasteners [ICC ESR 3298].
 6. AC100+ GOLD; DeWalt\Powers Fasteners [ICC ESR 2582].
 7. Approved Equal.

2.2 THREADED ANCHORING SYSTEMS FOR CONCRETE & GROUTED CONCRETE BLOCK

- A. Threaded anchoring systems shall have current ICC or IAPMO reports for shear and tension in cracked concrete and grouted concrete block per the requirements of the California Building Code. Threaded anchors shall be used in strict accordance with manufacturer's recommendations. Subject to compliance with requirements provide one of the following:
1. Kwik HUS-EZ; Hilti [ICC ESR 3027].
 2. Titen HD; Simpson Strong Tie [ICC ESR 2713].
 3. Titen Concrete & Masonry Screw; Simpson Strong Tie.
 4. Screwbolt+; DeWalt\Powers Fasteners [ICC ESR 3889-Concrete].
 5. Approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Installation of post installed anchors, including drilling and cleaning of holes, shall be in accordance with the current ICC or IAPMO report and the manufacturer's recommendations.
- B. Holes shall be drilled by methods that will not shatter or damage the concrete adjacent to the holes. Holes drilled through members or into thin elements such as walls or slabs shall utilize rotary drills to avoid impact damage to the opposite side of the member.
- C. Holes in which longitudinal or transverse reinforcement is encountered during drilling before the specified depth is attained shall be rejected. A new hole, which does not strike reinforcement, shall be drilled adjacent to the rejected hole to the depth shown on the plans. Abandoned holes shall be patched with high strength grout or other material approved by the Design Engineer.
- D. The contractor shall use non-destructive methods to locate existing reinforcement prior to drilling where designated on the plans at no additional cost.
- E. Any dowels which fail to bond or are damaged before new concrete is placed shall be removed and replaced at the contractor's expense.
- F. Adhesive anchors shall be installed in concrete having a minimum age of 21 days at the time of anchor installation.
- G. Installation of adhesive anchors that are to be under sustained tension loading in horizontal to vertically overhead orientation shall be done by a certified adhesive installer (AAI) as certified through ACI and in accordance with ACI 318 section D.9.2.2. Proof of current certification shall be submitted to the Engineer for approval prior to the commencement of installation.

3.2 FIELD QUALITY CONTROL

- A. Testing and Inspections: A Third Party hired by the Contractor will perform the inspections shown on the contract drawings for the placement of post installed anchors.
- B. Test Results: Test results shall be reported in writing to the City and Contractor on a weekly basis, but no later than 5 working days after the end of the week in which the tests were performed.
- C. Additional Tests: Additional testing required due to failure of post installed anchors to achieve the specified requirements shall be performed by the Contractor.

END OF SECTION

POST INSTALLED ANCHORS

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SECTION 05 12 00**STRUCTURAL STEEL AND MISCELLANEOUS IRON**

PART 1 - GENERAL**1.1 DESCRIPTION OF WORK**

- A. The work included under this section consists of furnishing all material, supplies, equipment, tools, transportation, and facilities, and performing all labor and services necessary for, required in connection with or properly incidental to furnishing, fabricating, priming, and erecting structural steel and miscellaneous iron complete in place, as described in this section of the specifications, shown on the accompanying drawings, or reasonably implied therefrom, except as hereinafter specifically excluded.
- B. Work Included:
1. All structural steel indicated on the drawings.
 2. Furnishing all column anchor bolts and base assemblies with nuts and washers.
 3. Supervision of the placement of anchor bolt assemblies
- C. Related Work Specified Elsewhere:
1. Cast-in-place Concrete; Section 03 30 00
 2. Grouting of Column Bases; Section 03 30 00
 3. Placement of Anchor Bolts, Assemblies, and Embeds; Section 03 30 00

1.2 REFERENCE STANDARDS

- A. The following is a list of reference standards referred to in this portion of the specification:
1. ASTM A36, "Specification for Carbon Structural Steel"
 2. ASTM A53, "Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless"
 3. ASTM A307, "Specification for Carbon Steel Bolts and Studs"
 4. ASTM A325, "Specification for Bolts, Steel, Heat Treated"
 5. ASTM A490, "Specification for Heat Treated Steel Structural Bolts"
 6. ASTM A500, "Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes"
 7. ASTM A572, "Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel"
 8. ASTM A992, "Specification for Steel for Structural Shapes for use in Building Framing"
 9. SSPC, "Systems and Specifications, Steel Structures Painting Manual Volume 2" by Steel Structures Painting Council.

1.3 QUALITY ASSURANCE

- A. Codes and Standards: Comply with all Federal, State, and Local codes and safety regulations. In addition, the fabrication, priming, and erection of structural steel shall comply with all the applicable provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified:
1. "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings" by the American Institute of Steel Construction, current edition.
 2. "Codes of Standard Practice for Steel Buildings and Bridges" by said AISC, current edition.
 - a. A.W.S. "Structural Welding Code – Steel," D1.1, current edition.
 - b. A.W.S. "Structural Welding Code – Seismic Supplement," D1.8, current edition.
 3. "Specifications for Structural Joints using ASTM A325 or A490 bolts," current edition as approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation, and endorsed by the AISC.
- B. Qualifications: Welding processes and welding operators shall be qualified in accordance with AWS "Standard Qualification Procedure". Welders to be employed are to provide AWS certification for the type of welding necessary.
- C. Mill Certificates: The Contractor shall provide Mill Certificates for structural steel and miscellaneous iron in accordance with the requirements of Part 1.05, "Submittals", of this specification section. When Mill Certificates cannot be provided, laboratory test reports shall be provided in accordance with the requirements of Part 1.05, "Submittals", of this specification section.
- D. Sampling, Testing, and Inspection:
1. General:
 - a. All materials and work shall be subject to inspection at the mill, the fabricating shop, and at the building site. Material or workmanship not complying fully with the drawings, and/or specifications will be rejected.
 - b. If the inspector, through oversight or otherwise, has accepted material or work which is defective or contrary to specifications, this material or work, regardless of state of completion, may be rejected.
- E. The Contractor shall employ an independent testing agency to perform sampling, testing, and inspections as shown on the contact drawings and submit certified test results.
- F. Contractor:
1. The Contractor shall cooperate with and notify City at least 24 hours in advance of inspections required and shall supply samples, test pieces,

- and facilities for inspection without extra charge.
2. The Contractor shall identify and tag each lot of fabricated steel to be shipped to the site by heat numbers in such a manner that it can be accurately identified at the job site.
 3. The Contractor shall remove all unidentified steel received at the site.

1.4 SUBMITTALS

A. General Requirements

1. Construction, and fabrication or ordering of materials shall not begin until Contractor has received submittals reviewed by the City governing all aspects of the intended work.

B. Shop Drawings:

1. Shop drawings for steel fabrications shall be submitted for review.
2. Submittals shall include anchor bolt setting plans, erection drawings and fabrication drawings. Information shown on the shop drawings shall include, but not be limited to, the following:
 - a. Anchor bolt setting plans shall show layout, anchor bolts sizes and grades, embedment, and template construction.
 - b. Erection Drawings shall show layout, marking and position of each member, and field connections.
 - c. Fabrication Drawings shall show details of members, including sizes, grades, connections, spacing of bolts and welds, designation of Architecturally Exposed Structural Steel, and the limits of paint applications.
3. Partial submittals shall be clearly identified by the contractor.
4. The omissions from the shop and installation drawings of any materials shown on the Specifications shall not relieve the contractor of the responsibility of furnishing and installing such materials, even though such drawings may have been returned and reviewed.
5. Shop drawings and calculations for temporary shoring and bracing shall be submitted for review. The shop drawings shall show layout, size of members and connection details. Calculations shall show all stresses in members and connections, from dead, live, and lateral loads in accordance with the requirements of the C.B.C. current governing edition. Shop drawings and calculations for temporary shoring and bracing shall be stamped and signed by a Civil Engineer registered in the State of California.
6. Contract drawings shall not be reproduced in whole or in part. Contract drawings modified into shop drawings will be returned without review.
7. Revised submittals shall have clear indications of revised or new information. Clouding is an acceptable form of identification.

C. Mill Certificates:

1. The Contractor shall provide Mill Certificates for each grade of steel for each heat to be used on project.

2. Mill Certificates shall meet the requirements of AISC 360 and all applicable ASTM standards.
 3. Mill Certificates shall be furnished with each lot of material shipped to the site and shall be signed by the Contractor which will serve to certify that all structural steel materials installed comply with specified requirements.
 4. When Mill Certificates cannot be provided, the Contractor shall hire a professional testing laboratory to verify compliance of each type of material to be used and provide laboratory test reports. The cost of testing shall be paid for by the Contractor.
- D. Laboratory Test Reports:
1. Laboratory test reports shall show the name of testing agency, date of testing, types of tests performed and shall be signed by a principal of the testing agency who is a registered Civil Engineer in the State of California.
 2. When required by other portions of these specifications, laboratory test reports shall be submitted for each type of steel for each heat to show compliance with appropriate ASTM Standards and these specifications.
- E. Welding Procedure Specifications:
1. Welding procedure specifications for all prequalified joints shall be submitted per AWS D1.1, 5.1.2 to the Engineer and reviewed prior to beginning fabrication. Non prequalified joints shall be qualified per AWS requirements.

1.5 DEFINITIONS

- A. Architecturally Exposed Structural Steel: Structural steel designated as "architecturally exposed structural steel" or "AESS" in the Contract Documents.
1. Provide "AESS" as follows: Exposed structural steel that is within 16 feet vertically and 10 feet horizontally of a walking surface and is visible to a person standing on that walking surface.

PART 2 - PRODUCTS

2.1 MATERIAL

- A. Structural Steel Wide Flange and Tee Shapes: Shall be new and shall conform to the requirements of ASTM A992.
- B. Structural Steel Channels and Angles: Shall be new and shall conform to the requirements of ASTM A36.
- C. Structural Steel Plate: Shall be new and shall conform to the requirements of ASTM A572.
- D. Structural Steel Tubes: Shall be new and shall conform to the requirements of ASTM A500, Grade B. $F_y = 46$ KSI

- E. Steel Pipe: ASTM A53, Types E or S, Grade B, with sulphur not exceeding .05%.
- F. Arc-welding Electrodes: Arc-welding electrodes shall be E70 series electrodes for A36, A572 and A992 material, E80 Series for A706 reinforcing steel and E90 series for A615 reinforcing steel. Electrodes shall be as recommended by their manufacturers for the positions and conditions of actual use. All welds used in members and connections in the seismic Force Resisting System shall be made with filler metals meeting the requirements specified in AWS D1.8 clause 6.3.
- G. High Strength Bolts: High strength bolts (HSB) shall conform to ASTM A325 or A490 Type 1, 2, or 3.
- H. Machine Bolts: Machine bolts (MB) and sag rods shall conform to ASTM A307, manufactured to American Standard Bolt and Nut dimensions with "Free Fit - Class 2" threads. All unfinished bolts shall have an approved lock washer under nut.
- I. Prime Coat: Prime coat for interior members shall meet the requirements of SSPC-Paint 25 or acceptable equal. Prime coat for exterior members shall meet the requirements of SSPC-Paint 20 or acceptable equal.
- J. Smooth Rods: Smooth Rods shall conform to ASTM A36.
- K. Anchor Bolts: Anchor bolts shall conform to ASTM F1554 grade 36.
- L. Headed Studs, Deformed Bar Anchors, and Threaded Studs: Headed Studs shall be H4L or S3L; Deformed Bar Anchors shall be D2L and Threaded Studs shall be CPL as manufactured by TRW Nelson Stud or equal.
- M. High Strength Rods: High strength rods shall conform to ASTM F1554 grade 55, unless noted otherwise.
- N. Nuts shall be as shown below and finish shall match fastener.

	<u>Fastener Grade & Size</u>	<u>Nut Class</u>	<u>Nut Style</u>
ASTM A325	Type 1 and 2, Uncoated	ASTM A563-C,C3,D,DH, DH3	Heavy Hex
	Type 1 and 2, Zinc Coated	ASTM A563-DH	Heavy Hex
	Type 3, Uncoated	ASTM A563-C3,DH3	Heavy Hex
ASTM A490	Type 1 and 2, Uncoated	ASTM A563-DH,DH3	Heavy Hex
	Type 3, Uncoated	ASTM A563-DH3	Heavy Hex
ASTM A449	Type 1 and 2, ¼" to 1½" Uncoated	ASTM A563-B	Hex
	Type 1 and 2, Over 1½" to 3" Uncoated	ASTM A563-A	Heavy Hex
	Type 1 and 2, ¼" to 3" Zinc Coated	ASTM A563-DH	Heavy Hex
ASTM A193	B7	ASTM A194-2H	Heavy Hex

STRUCTURAL STEEL AND MISCELLANEOUS IRON

- O. Washers shall be flat circular, rectangular or square beveled washers and shall conform to ASTM F436 Type 1. Finish shall match nut. Washers shall be installed under the element being turned for A325 bolts and under both the head and the nut for A490 bolts.
- P. Bar Grating: Bar grating shall be McNichols GW Series or an approved equal. Steel bar grating permanently exposed to weather shall be hot-dipped galvanized.

2.2 FABRICATION

- A. Welding: Welding shall be by operators who are qualified by test as per AWS "Standard Qualification Procedure" to perform type of work required.
- B. High Strength Bolting: All high strength bolted connections shall be bearing type connections unless otherwise noted on the plans. Where noted on the plans, high strength bolted connections shall be slip critical type connections.
- C. Bolts, rods, washers and nuts exposed to weather shall be hot dipped galvanized steel in compliance with ASTM A153.
- D. Straightness (camber and sweep) Tolerance:
 - 1. Unless otherwise noted, straightness tolerances shall be per ASTM A6.
 - 2. Sweep tolerance for channels and angles: Maintain a maximum variation of 1/8" times the number of feet of total length divided by 5, unless alternate criteria is approved by the Design Engineer.
- E. Painting:
 - 1. Priming: Painting under this section is limited to priming.
 - a. The prime coat shall be applied in the shop and touched up after erection. Anchor bolts and column assemblies 2 inches and more below finish floor shall be left unpainted. High strength bolted connections shall be left unpainted within 3" of connection.
 - b. Paint shall be delivered to shop in original sealed containers marked with manufacturer's name and brand identification.
 - c. Use paint as prepared by the manufacturer without thinning or other admixture unless so stated by the manufacturer. Execute painting on a dry clean surface, free from rust, loose scale or grease. Do not do any painting in temperatures lower than 45 degrees F.

PART 3 - EXECUTION

3.1 WORKMANSHIP

- A. The workmanship shall be in accordance with AISC Standard Specifications, and shall be of the highest quality found in contemporary structural work.

- B. All exposed gaps or bolt holes as a result of slotted gusset plates or erection bolts shall be filled and ground smooth. Erection bolts shall be removed after welding. Exposed ends of pipes and hollow sections shall be sealed with a cap plate and ground smooth unless noted otherwise on the architectural drawings.
- C. For Architecturally Exposed Structural Steel (AESS) shop fabricate and assemble AESS to the maximum extent possible. Locate field joints at concealed locations if possible. Detail assemblies to minimize handling and to expedite erection. Handle and fabricate AESS with special care including the following:
 - 1. Fabricate with exposed surfaces smooth, square, and free of surface blemishes including pitting, rust, scale, and roughness.
 - 2. Grind sheared, punched, and flame-cut edges of AESS to remove burrs and provide smooth surfaces and edges.
 - 3. Fabricate AESS with exposed surfaces free of mill marks, including rolled trade names and stamped or raised identification.
 - 4. Fabricate AESS with exposed surfaces free of seams to maximum extent possible.
 - 5. Remove blemishes by filling or grinding or by welding and grinding, before cleaning, treating, and shop priming.
 - 6. Fabricate with piece marks fully hidden in the completed structure or made with media that permits full removal after erection.
 - 7. Fabricate AESS to the tolerances specified in AISC 303 Section 10.2 for steel that is designated AESS.
 - 8. Seal-weld open ends of hollow structural sections with 5/16-inch closure plates for AESS.
 - 9. Ease exposed edges to a radius of approximately 1/32 inch radius, unless otherwise shown on the drawings. Miter exposed corner joints and machine fit to a hairline joint.
 - 10. Coping and Blocking Tolerance: Maintain a uniform gap of 1/8" +/- 1/32" at all copes and blocks.
 - 11. Joint gap Tolerance: Maintain a uniform gap of 1/8" +/- 1/32".
 - 12. Straightness (camber and sweep) Tolerance: Maintain one half the standard camber and sweep tolerances for rolled shapes in ASTM A6, per AISC 303 Section 10.2.2.

3.2 ERECTION

- A. The Contractor will be responsible to erect the complete structural frame plumb and true to line and grade, in conformance with the AISC Code of Standard Practice.
- B. Temporary Bracing and Shoring:
 - 1. The Contractor shall temporarily brace the frame in both directions and shall maintain columns plumb until the final connections of the framework and construction of diaphragms are complete.

2. The Contractor shall provide such temporary shoring and additional bracing of steel frame as required to adequately and safely support any or all loads imposed upon the structure during construction.
 3. Submit shop drawings for temporary bracing and shoring in accordance with the requirements of Part 1.4 "Submittals", of this specification section.
- C. Field Painting:
1. After erection, all field welds, field bolts and abraded or scratched surfaces shall be cleaned and given an additional spot coat of the same paint used for the shop coat. The entire work shall be left in a neat, clean and acceptable condition.

3.3 FIELD QUALITY CONTROL

- A. Inspections: A Third Party hired by the Contractor will perform the inspections shown on the contract drawings.
- B. Contractor:
1. The Contractor shall hire the Third Party Engineer responsible for the design of temporary bracing and shoring to inspect the work as detailed on the reviewed shop drawings.
 2. The Third Party Engineer responsible for design, temporary bracing and shoring shall write a letter to the City certifying construction of temporary bracing and shoring is in accordance with the reviewed shop drawings, prior to start of construction requiring temporary bracing or shoring.

END OF SECTION

SECTION 14 20 00

HOIST AND TROLLEY SYSTEM

PART 1 - GENERAL

1.1 SUMMARY OF SECTION

- A. Furnish all labor, supervision, materials, equipment and incidentals required and install complete and ready for operation of hoist and trolley system as shown on the Drawings and as specified herein.
- B. Specifications for the following are included in this section.
 - 1. Hoists
 - 2. Trolley

1.2 SUBMITTALS

- A. Submittals shall include the following:
 - 1. The manufacturer or supplier.
 - 2. Drawings showing all important details of construction and dimensions.
 - 3. Descriptive literature, bulletins and/or catalogs of the equipment.
 - 4. The total weight of each item.
 - 5. A complete bill of materials.
 - 6. A list of special tools and the manufacturer's standard spare parts and replacement parts with location where they are available.
 - 7. Additional submittal data, where noted with individual pieces of equipment.
- B. Certificates
 - 1. Submit an affidavit of compliance with the specified standards, including certified results of required tests and certification of proper installation.

1.3 QUALITY ASSURANCE

- A. Qualifications
 - 1. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications as applicable.
 - 2. All units of the same type shall be the product of one manufacturer.
- B. Certifications
 - 1. The manufacturers shall furnish an affidavit of compliance with Standards referred to herein as specified in paragraph 1.2B. Refer to Part 4 for testing

required for certain items in addition to that required by referenced standards.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping
 - 1. Care shall be taken in loading, transporting and unloading to prevent injury to the hoist and trolley systems or coatings. Equipment shall not be dropped. All hoist and trolley systems shall be examined before installation and no piece shall be installed which is found to be defective. Any damage to the coatings shall be repaired as acceptable to the City.
 - 2. Any corrosion in evidence at the time of acceptance by the City shall be removed, or the hoist or trolley shall be removed and replaced.
 - 3. Insofar as is practical, the equipment specified herein, shall be factory assembled. The parts and assemblies that are shipped unassembled, shall be packaged and tagged in a manner that will protect the equipment from damage and facilitate the final assembly in the field.
 - 4. Weight, handling instructions, type of storage required, and instructions for protective maintenance during storage shall be included with each shipment to the project site.

1.5 MAINTENANCE

- A. Special tools and the manufacturer's standard spare parts, if required for normal operation and maintenance, shall be supplied with the equipment.
- B. Provide all special tools required for normal maintenance. Tools shall be packaged in a steel case, clearly and indelibly marked on the exterior to indicate equipment for which tools are intended.
- C. Provide to the City a list of all spare and replacement parts with location where they are available.

PART 2 - PRODUCTS

2.1 HOIST

- A. Hand chain hoist with 1 ton rated capacity
- B. Lift is 30 feet. Contractor to verify in the field the required lift before ordering the hoist.
- C. Hand chain pull to lift rated load is 66 lb.
- D. Hand chain overhaul to load 1 foot is 42 feet.

- E. Hoist has a single disc brake.
- F. Handwheel cover rotates 360° for hoist operation in any direction.
- G. Steel Construction – Frame and housings are made from impact resistant, stamped steel.
- H. Powder Coated Finish.
- I. Heat Treated Steel Gearing – All internal gears and pinions are heat treated steel.
- J. Precision 4-Pocket Liftwheel – Fully machined.
- K. Hardened Steel Chain
- L. High Strength Hooks and Latches – Forged upper and lower hooks with heavy duty cast steel latches.
- M. Meets ASME B30.16 – Overhead Hoist Standard and European CE Standard.
- N. 5-Year Warranty – Against defects in materials and workmanship.
- O. Approved manufacturer: Columbus McKinnon Corporation Hoist Model Hurricane 5606, or approved equal.

2.2 TROLLEY

- A. Trolley shall be geared beam trolley with safe working load of 2,000 lb.
- B. Trolley shall have a flange width range of 2.57-8 inches.
- C. Length of hand chain shall be 25 feet.
- D. Durable baked-enamel paint protection.
- E. Precision ball bearing trolley wheels
- F. Anti-drop plate
- G. Stainless steel ID tag
- H. Approved manufacturer: OZ Lifting Productions, Trolley Model OZ1GBT, or approved equal.

PART 3 - INSTALLATION

3.1 HOISTS AND TROLLEY SYSTEM

- A. All hoists and trolley systems shall be installed per these Specifications, the manufacturer's instructions and approved shop drawings in the locations shown on the plans. Any damage to the above items shall be repaired to the satisfaction of the City before they are installed.
- B. All materials shall be carefully inspected for defects in construction and materials. All operating mechanisms shall be operated to check their proper functioning and all nuts and bolts checked for tightness. Hoists and trolleys which do not operate easily, or are otherwise defective, shall be repaired or replaced.
- C. Installation includes the installation of the hoist and trolley system foundation and support structure as shown on the plans including the associated required grading around the foundation area.

PART 4 - INSPECTION AND TESTING

4.1 INSPECTION, TESTING AND CORRECTION OF DEFICIENCIES

- A. If any unit proves to be defective, it shall be replaced or repaired to the satisfaction of the City.
- B. Contractor shall be responsible for the on-site testing and certification of the hoist.

END OF SECTION

SECTION 22 16 00

DUCTILE IRON PIPE

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required, install, and test ductile iron pipe and fittings. Provide thrust blocks and couplings as required to achieve a complete pipe system.
- B. Where the word "pipe" is used, it shall refer to pipe, fittings, or appurtenances unless otherwise noted.

1.2 SUBMITTALS

- A. Submit, shop drawings and product data required to establish compliance with the Section. Submittals shall include the following:
 - 1. Prior to shipment of pipe, submit a certified affidavit of compliance from the pipe manufacturer stating that the pipe, fittings, gaskets, linings and exterior coatings for this project have been manufactured and tested in accordance AWWA and ASTM standards and requirements specified herein.

1.3 REFERENCE STANDARDS

- A. Referenced standards shall be the most recent version or edition.
- B. American Society for Testing and Materials (ASTM)
 - 1. ASTM A377 - Standard Index for Specifications for Ductile-Iron Pressure Pipe
 - 2. ASTM C150 - Standard Specification for Portland Cement.
- C. American National Standards Institute (ANSI)
 - 1. ANSI B1.1 - Unified Inch Screw Threads (UN and UNR Thread Form).
 - 2. ANSI B16.1 - Cast Iron Pipe Flanges and Flanged Fittings Classes 25, 125 and 250.
 - 3. ANSI B18.2 - Square and Hex Bolts and Screws Inch Series Including Hex Cap Screws and Lag Screws.

DUCTILE IRON PIPE

D. American Water Works Association (AWWA)

1. AWWA C104 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
2. AWWA C105 - Polyethylene Encasement for Ductile-Iron Pipe Systems
3. AWWA C110 - Ductile-Iron and Gray-Iron Fittings, 3-in Through 48-in (75mm Through 1219mm) for Water.
4. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
5. AWWA C115 - Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
6. AWWA C150 - Thickness Design of Ductile-Iron Pipe.
7. AWWA C151 - Ductile-Iron Pipe, Centrifugally Cast for Water.
8. AWWA C153 - Ductile-Iron Compact Fittings, 3 In. Through 64 In., for Water Service
9. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.
10. AWWA C606 - Grooved and Shouldered Joints.
11. AWWA C651 - Disinfecting Water Mains.

1.4 QUALITY ASSURANCE

- A. Each length of ductile iron pipe supplied for the project shall be hydrostatically tested at the point of manufacture to 500 psi for a duration of 10 seconds per AWWA C151. Testing may be performed prior to machining bell and spigot. Failure of ductile iron pipe shall be defined as any rupture of the pipe wall. Certified test results shall be furnished to the City prior to time of shipment.
- B. All ductile-iron pipe and fittings to be installed under this project shall be inspected and tested at the foundry as required by the standard specifications to which the material is manufactured. Furnish to the City sworn certificates of such tests and their results prior to the shipment of the pipe.
- C. All pipe and fittings to be installed under this Contract may be inspected at the plant for compliance with this Section by an independent testing laboratory selected by the City, at the City's expense.

- D. Inspection of the pipe and fittings will also be made by the City after delivery. The pipe shall be subject to rejection at any time on account of failure to meet any of the specified requirements, even though sample pipes may have been accepted as satisfactory at the place of manufacture. Pipe rejected after delivery shall be marked for identification and shall be removed from the job.
- E. All pipe and fittings shall be permanently marked with the following information:
 1. Manufacturer, date.
 2. Size, type, class, or wall thickness.
 3. Standard produced to (AWWA, ASTM, etc).

PART 2 - PRODUCTS

2.1 GENERAL

- A. Mortar-lined and polyethylene encased or aliphatic polyurethane coated ductile iron pipe shall conform to ANSI/AWWA C151, C104, and C105, subject to the modifications contained herein. The pipe shall be of the diameter and class shown on the Drawings, shall be furnished complete with rubber gaskets as indicated in the Contract Documents, and all specials and fittings shall be provided as shown in the Drawings.
- B. Laying Lengths: Maximum pipe laying lengths shall be 20 feet with shorter lengths provided as required for installation in accordance with the Drawings.
- C. Closures and Correction Pieces: Closures and correction pieces shall be provided as required so that closures may be made due to different headings in the pipe laying operation and so that correction may be made to adjust the pipe laying to conform to pipe stationing shown on the Drawings.

2.2 MATERIALS

- A. Ductile Iron Pipe: Pipe materials shall conform to the requirements of ANSI/AWWA C151.
- B. Cement: Cement for mortar lining shall conform to the requirements of ANSI/AWWA C104; provided, that cement for mortar lining shall be Type II or V. Fly ash or pozzolan shall not be used as a cement replacement.

2.3 SPECIALS AND FITTINGS

- A. Fittings for ductile iron pipe shall conform to the requirements of ANSI/AWWA C153/A21.53 or ANSI/AWWA C110/A21.10 for diameters 3-inch through 48-inch

and shall have a minimum pressure class as shown on the Drawings for the higher class of adjoining pipe.

2.4 DESIGN OF PIPE

- A. General: The pipe furnished shall be ductile iron pipe, mortar-lined and polyethylene encased or aliphatic polyurethane coated, with rubber-gasketed joints.
- B. Pipe Dimensions: The pipe shall be of the diameter and class shown on the Drawings.
- C. Fitting Dimensions: The fittings shall be of the diameter and class shown on the Drawings for the adjacent pipe.
- D. Joint Design: Unless indicated otherwise, ductile iron pipe and fittings shall be furnished with push-on joints. Mechanical joints, flanged joints, and restrained joints shall be furnished at the locations shown on the Drawings.
 - 1. Mechanical and push-on joints shall conform to ANSI/AWWA C111/A21.11
 - 2. Flanged joints shall conform to ANSI/AWWA C115/A21.15. Gaskets shall be 1/8-inch thick, full face, cloth inserted rubber, corrosive acid and alkali free conforming to ANSI 816.21 and ANSI/AWWA C207.
 - 3. Restrained joints shall be US Pipe Company, TR FLEX; Griffin Pipe Company, Snap Lok; American Cast Iron Pipe Company, Flex Ring; or Clow Company, Super-Lok.
- E. For bell-and-spigot ends with rubber gaskets, the clearance between the bells and spigots shall be such that when combined with the gasket groove configuration and the gasket itself, will provide watertight joints under all operating conditions when properly installed. The Contractor shall require the pipe manufacturer to submit details complete with significant dimensions and tolerances and also to submit performance data indicating that the proposed joint has performed satisfactorily under similar conditions. In the absence of a history of field performance, the results of a test program shall be submitted.

2.5 CEMENT-MORTAR LINING

- A. Cement-Mortar Lining for Shop Application: Except as otherwise provided herein, interior surfaces of all ductile iron pipe, fittings, and specials shall be cleaned and lined in the shop with cement-mortar lining applied centrifugally in conformity with ANSI/AWWA C104. During the lining operation and thereafter, the pipe shall be maintained in round condition by suitable bracing or strutting. The lining machines shall be of the type that has been used successfully for similar work. Every precaution shall be taken to prevent damage to the lining. If lining

damaged or found faulty at delivery site, the damaged or unsatisfactory portions shall be replaced with lining conforming to these Specifications.

- B. The minimum lining thickness shall be in accordance with ANSI/AWWA C104/A21.4.
- C. Protection of Pipe Lining/Interior: All shop-applied cement mortar lining shall be given a seal coat of asphaltic material in conformance with ANSI/AWWA C104.

2.6 EXTERIOR COATING OF PIPE

- A. Exterior Coating of Exposed Piping: The exterior surfaces of pipe which will be exposed to the atmosphere inside structures or above ground shall be thoroughly cleaned and then given a shop coat of rust-inhibitive primer conforming to the requirements herein.
- B. Exterior Coating of Buried Piping: Buried ductile iron pipe, joints, valves and fittings shall be encased in a polyethylene film that meets the material specifications of ANSI/AWWA C105/A21.5.

2.7 ALIPHATIC POLYURETHANE

- A. Aliphatic polyurethane shall be used for coating of ductile iron pipe surfaces which are exposed to the atmosphere. Two component aliphatic polyurethane coating material shall provide superior color and gloss retention, resistance to splash from acid and alkaline chemicals, resistance to chemical fumes and weathering and with a minimum solids content of 58 percent by volume. Primer shall be a rust inhibitive two component epoxy coating with a minimum solids content of 70 percent by volume.
 1. Prime coat (DFT = 4 mils), Amerlock 400, Carboline 893, Tnemec 104, or equal.
 2. Intermediate coat (DFT = 4 mils), Amercoat 385, Carboline 890, Tnemec Endura-Shield 73, or equal.
 3. Finish coat (one or more, DFT = 3 mils), Amercoat 450HS, Carboline 133 HB, Tnemec 76; or equal.
 4. Total System OFT = 9 to 12 mils.
 5. Surface Preparation shall be SSPC SP-1

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Pipe Laying: The pipe shall be installed in accordance with ANSI/AWWA C600.

3.2 POLYETHYLENE ENCASEMENT

- A. Polyethylene encasement shall be installed on buried ductile iron pipe, joints, valves and fittings in accordance with the requirements of ANSI/AWWA C105/A21.5.

3.3 RUBBER-GASKETED JOINTS

- A. Rubber-Gasketed Joints: Immediately before jointing pipe, the bell end of the pipe shall be thoroughly cleaned, and a clean rubber gasket lubricated with an approved vegetable-based lubricant shall be placed in the bell groove. The spigot end of the pipe shall be carefully cleaned and lubricated with a vegetable-based lubricant. The spigot end of the pipe section shall then be inserted into the bell of the previously laid joint and telescoped into its proper position. Tilting of the pipe to insert the spigot into the bell will not be permitted.

END OF SECTION

SECTION 22 66 00**VALVES AND APPURTENANCES**

PART 1 - GENERAL**1.1 SUMMARY OF SECTION**

- A. Furnish all labor, supervision, materials, equipment and incidentals required and install complete and ready for operation all valves and appurtenances as shown on the Drawings and as specified herein.
- B. Specifications for the following valves and appurtenances are included in this section.
 - 1. Valve Actuators
 - 2. Knife Gate Valves
 - 3. Piping Specialties
 - a. Flexible Connectors
 - 1) Flanged Coupling Adapters
 - 2) Mechanical Couplings
 - b. Harnessing and Restraints
 - c. Appurtenances and Miscellaneous Items
 - d. Valve Enclosures

1.2 SUBMITTALS

- A. Submittals shall include the following:
 - 1. The manufacturer or supplier.
 - 2. Drawings showing all important details of construction and dimensions.
 - 3. Descriptive literature, bulletins and/or catalogs of the equipment.
 - 4. The total weight of each item.
 - 5. A complete bill of materials.
 - 6. Additional submittal data, where noted with individual pieces of equipment.
- B. Test Reports
 - 1. Provide hydrostatic test data, per manufacturer's standard procedure or MSS-SP-61 for all valve types.
- C. Certificates
 - 1. Submit an affidavit of compliance with the specified standards, including certified results of required tests and certification of proper installation.

1.3 REFERENCE STANDARDS

- A. Referenced standards shall be the most recent version or edition.

- B. American Society for Testing and Materials (ASTM)
 - 1. ASTM A126 - Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings.
 - 2. ASTM A276 - Standard Specification for Stainless and Heat-Resisting Steel Bars and Shapes.
- C. American Water Works Association (AWWA)
 - 1. ANSI/AWWA C111/A21.11 – Rubber-Gasket Joint for Ductile-Iron Pressure Pipe and Fittings
 - 2. AWWA C502 - Dry-Barrel Fire Hydrants
 - 3. ANSI/AWWA C504 - Standard for Rubber-Seated Butterfly Valves
 - 4. AWWA C540 - Power-Actuating Devices for Valves and Sluice Gates
 - 5. AWWA C550 - Standard for Protective Epoxy Interior Coatings for Valves and Hydrants
 - 6. AWWA C800 - Underground Service Line Valves and Fittings
- D. American National Standards Institute (ANSI)
 - 1. ANSI B2.1 - Specifications, Dimensions, Gauging for Taper and Straight Pipe Threads (except dry seals).
 - 2. ANSI/ASME B 16.1 - Cast Iron Pipe Flange and Flanged Fittings Class 25, 125, 250 and 800
 - 3. ANSI/ASME B 16.10 - Face-to-Face and End-to-End Dimensions of Valves
- E. American Iron and Steel Institute (AISI)
 - 1. Manufacturer's Standardization Society of the Valve and Fittings Industry (MSS)
- F. MSS-SP-61 - Pressure Testing of Steel Valves.
- G. National Electrical Manufacturers Association (NEMA)
- H. Underwriters Laboratories (UL)
- I. Factory Mutual Insurance (FM)

1.4 QUALITY ASSURANCE

- A. Qualifications
 - 1. Valves and appurtenances shall be products of well established firms who are fully experienced, minimum 10 years, reputable and qualified in the manufacture of the particular equipment to be furnished.
 - 2. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications as applicable.
 - 3. All units of the same type shall be the product of one manufacturer.

- B. Certifications
 1. The manufacturers shall furnish an affidavit of compliance with Standards referred to herein as specified in paragraph 1.2C. Refer to Part 4 for testing required for certain items in addition to that required by referenced standards.

- C. Inspection of the units may also be made by the City or other representative of the City after delivery. The equipment shall be subject to rejection at any time due to failure to meet any of the Specification requirements, even though submittal data may have been accepted previously. Equipment rejected after delivery shall be marked for identification and shall be removed from the job site at once.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping
 1. Care shall be taken in loading, transporting and unloading to prevent injury to the valves, appurtenances, or coatings. Equipment shall not be dropped. All valves and appurtenances shall be examined before installation and no piece shall be installed which is found to be defective. Any damage to the coatings shall be repaired as acceptable to the City.
 2. Prior to shipping, the ends of all valves shall be acceptably covered to prevent entry of foreign material. Covers shall remain in place until after installation of connecting piping is completed.
 - a. All valves 3 inch and larger shall be shipped and stored on site until time of use with plastic, wood, or plywood covers on each valve end.
 - b. Valves smaller than 3 inch shall be shipped and stored as above except that heavy plastic or cardboard covers may be used on the openings.
 - c. Rising stems and exposed stem valves shall be coated with a protective oil film which shall be maintained until the valve is installed and put into use.
 - d. Any corrosion in evidence at the time of acceptance by the District shall be removed, or the valve shall be removed and replaced.
 3. Insofar as is practical, the equipment specified herein, shall be factory assembled. The parts and assemblies that are shipped unassembled, shall be packaged and tagged in a manner that will protect the equipment from damage and facilitate the final assembly in the field.
 4. Weight, handling instructions, type of storage required, and instructions for protective maintenance during storage shall be included with each shipment to the project site.

1.6 MAINTENANCE

- A. Special tools and the manufacturer's standard spare parts, if required for normal operation and maintenance, shall be supplied with the equipment.

- B. Provide all special tools required for normal maintenance. Tools shall be packaged in a steel case, clearly and indelibly marked on the exterior to indicate equipment for which tools are intended.
- C. Provide to the City a list of all spare and replacement parts with location where they are available.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT - GENERAL

- A. Valves and appurtenances shall be of the size shown on the Drawings or as noted and as far as possible equipment of the same type shall be identical and from one manufacturer.
- B. Valves and appurtenances shall have the name of the maker, nominal size, flow directional arrows, working pressure for which they are designed and standard referenced, cast in raised letters or indelibly marked upon some appropriate part of the body.
- C. Unless otherwise noted, items shall have a minimum working pressure of 150 psi or be of the same working pressure as the pipe they connect, whichever is higher and suitable for the pressures noted where they are installed.
- D. Joints, size and material - unless otherwise noted or required by the City:
 - 1. Except where noted, all joints referred to herein shall be of the same type, nominal diameter and material and with a minimum rating equal to the pipe or fittings they are connected to.
 - 2. Valves and appurtenances shall be of the same nominal diameter as the pipe or fittings they are connected to.
- E. Provide all special adapters as required to ensure compatibility between valves, appurtenances and adjacent pipe.
- F. Valves and actuators shall be designed for submerged service where water may completely submerge the valve and operator. All other units shall be as a minimum weather tight.
- G. Valve nut extensions shall be Schedule 80 steel. The length (in inches) of the extension shall be arc welded on the top of the circular plate.
- H. Valves shall be wrapped in polyethylene. Non stainless steel bolts and nuts shall be coated with bitumastic.

2.2 VALVE ACTUATORS

- A. Unless otherwise noted, valves shall be manually actuated. The lever type operators may be supplied on quarter-turn type valves, 2 inches and smaller, if recommended by the valve manufacturer. Buried valves and those with operating nuts shall have a non-rising stem with an AWWA 2 inch nut.
- B. All actuators shall be capable of moving the valve from the full open to full close position and in reverse and holding the valve at any position part way between full open or closed.
- C. Each operating device shall have cast on it the word "OPEN" and an arrow indicating the direction of operation.
- D. Gear Actuators
 - 1. Unless otherwise noted, gear actuators shall be provided for the following: all valves of larger than 8 inch nominal diameter; all buried valves with operating shaft mounted horizontally (butterfly, plug, etc.); where specified and/or indicated on the Drawings; where manual operator effort is greater than 40 ft-lbs rim pull.
 - 2. Gear actuators shall be of the traveling nut type with output shaft perpendicular to valve shaft, having a removable hand wheel mounted on the output shaft. Unless noted, they shall conform to AWWA C504, except with butterfly valves which need not be certified.
 - 3. Actuators shall be capable of being removed from the valve without dismantling the valve or removing the valve from the line.
 - 4. Gearing shall be machine-cut steel designed for smooth operation. Bearings shall be enclosed and permanently lubricated, with bronze bearing bushings provided to take all thrusts and seals and to contain lubricants. Housings shall be sealed to exclude moisture and dirt, allow the reduction mechanisms to operate in lubricant and be of the same material as the valve body.
 - 5. Manual operator input effort to the handwheel shall be a maximum of 40 ft-lbs for operating the valve from full open to full close, under any conditions. Gear actuators shall indicate valve position and have adjustable stops. Maximum handwheel size shall be 24 inch diameter.
 - 6. All position indication and direction of opening arrows shall be embossed, stamped, engraved, etched or raised decals.
- E. Unless otherwise noted, all valves larger than 3 inch nominal diameter shall be provided with position indicators at the point of operation.

2.3 THROTTLING BONNETED KNIFE GATE VALVES

- A. Throttling type Bonneted knife gate valve shall be 16-inches, with Class D flanges.

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- B. Valve shall include a pressure-retaining bonnet that fully encloses the gate. The bonnet shall be rated at the same pressure as the valve body and shall not include any type of internal gate packing or gate wiper.
- C. A packing gland shall be located at the top of the bonnet, utilizing braided packing to provide a tight seal around the stem.
- D. Fully Guided Gate: The leading edge of the gate shall be square, and shall be guided and supported by the seat. The seat shall fully support the gate, top to bottom, throughout the entire travel length
- E. Flow Direction: Flow shall be unidirectional in the normal direction. Wedges shall be provided, to force the gate up against the seat in the fully closed position.
- F. Body and Bonnet: The body and bonnet shall be 316 SS, including the external flanges and stiffeners, the packing gland, and all internal and external fasteners.
- G. Gate: The gate shall be 316 SS, suitable for the service conditions, and shall be ground and polished to a minimum surface finish of 32 micro-inch/inch R.M.S. to prevent damage to the seat. The gate shall be with a straight bottom to prevent cavitation and vibration.
- H. Metal Seat: Valve shall be provided with metal-to-metal seating, with Stellite hardfacing to prevent galling.
- I. Stem: The stem shall be 316 SS.
- J. Stem Back-Seating Ring: The bottom of the packing gland shall be machined to mate with the stem back-seating ring to allow the packing to be replaced while the valve is pressurized and in the full open position. The back-seating ring shall include a Teflon O-ring for improved sealing.
- K. Packing: The packing shall be Teflon-impregnated synthetic fiber, without included asbestos. The packing shall be replaceable without disassembling the valve or removing the valve from the pipeline.
- L. Flanges: Flanges shall be raised face. The gasket surfaces shall be 316 SS, fully machined with a spiral serrated finish. Flange drilling shall be per ASME B16.5 Class 150. All flange bolt holes shall be drilled and tapped.
- M. Yoke: The yoke, designed to protect the stem and packing, shall be made of 316 stainless steel and shall totally enclose and protect the stem and packing. There shall be packing adjustment and replacement windows on opposite sides. The packing windows shall come with a clamshell single hinge design that will be lockable without vertical movement and be of 316 stainless steel construction. Lock supplied by the City.

VALVES AND APPURTENANCES

- N. Padlock Flange: the valve actuator shall have a metallic padlock double plate design installed on the gears input shaft to prevent movement of the handwheel while lock is installed. Lock supplied by City.
- O. Lubrication: The valves shall be designed so that all required lubrication can be completed externally with the valve installed in the pipeline.
- P. Operator: Bevel Gear with 2-inch AWWA operating nut. Valve shall open left (counter clockwise).
- Q. Pressure rating 150 psi (cold water pressure).
- R. Valve shall be shop tested prior to shipment. Testing includes a body shell test, a seat test and a cycling test to ensure proper functioning of moving parts.
- S. Approved manufacturer: Hilton H-300-B or approved equal.

2.4 PIPING SPECIALTIES

- A. Flexible Connectors
 - 1. Flanged Coupling Adapters for plain end pipe at fittings, valves and equipment:
 - a. Coupling adapter shall meet all specifications set forth in the AWWA Standard C219.
 - b. Shall have AWWA Class D Steel Ring Flange, compatible with ANSI Class 125 and 150 bolt circles.
 - c. Coating shall be fusion bonded epoxy.
 - d. Nuts and bolts shall be 316 stainless steel.
 - e. Gaskets shall be Nitrile Butadiene Rubber (NBR) compounded meeting the requirements of ASTM D2000.
 - f. The end ring and body are made from ductile (nodular) iron meeting or exceeding ASTM A536, Grade 65-45-12.
 - g. Flanged coupling adapter shall be Romac FC-400, JCM 303-1600, or approved equal.
 - 2. Mechanical Couplings shall be rated for a minimum working pressure of 150 psi. The barrel shall be a minimum 10 inches long. Couplings shall be cleaned and shop primed with manufacturer's standard rust inhibitive primer. Mechanical couplings shall be Smith-Blair, Romac, JCM, or Apac only, with stainless steel nuts, bolts, and threaded rods.
- B. Harnessing and Restraints
 - 1. Mid-Span Restraint
 - a. Two mid span restraints will be used as an anchor in deadman wall.
 - b. The mid-span restraint shall be split for ease of installation and manufactured of ductile iron conforming to ASTM A536.
 - c. The mid-span restraint shall be coated using MEGA-BOND®.

- d. For use on water pipelines subject to hydrostatic pressure and tested in accordance with either AWWA C600 or ASTM D2774.
 - e. When used as an anchor within concrete, polyethylene wrap must be used to prevent concrete intrusion into the wedge pocket.
 - f. The restraints shall be the Model 1116SDB, as manufactured by EBAA Iron, Inc. or approved equal.
2. Where harnessed couplings or adapters are noted, they shall conform to AWWA Manual M11 except as modified by the Drawings or this Specification.
 3. Unless otherwise noted, size and material for tie rods, clamps, plates and hex nuts shall be as shown on the Drawings, or, if not shown on the Drawings, shall be as required in AWWA Manual M11. Manufactured restraining clamp assemblies shall be as manufactured by Stellar Corporation, Columbus, OH or fabricated equal.
 4. Restrained joints (such as welded, locking mechanical joints) shall be of the type specified with the individual type of pipe. If not specified, restrained (locking) mechanical joint pipe shall be of the manufacturers standard design utilizing a locking device (ring or ears) integrally cast with the pipe.
- C. Appurtenances and Miscellaneous Items
1. All gaskets, glands, bolts, nuts and other required hardware shall be provided for connection of piping and appurtenances. Bolts and nuts shall be high strength, 316 stainless steel, with hexagon nut (unless otherwise noted). T-bolts shall be used on mechanical joint fittings. All other hardware shall be of the size, type and number as required and recommended by the piping or appurtenance manufacturer and as specified herein. T-bolts shall be as supplied by the manufacturer.
 2. All gaskets for flanges shall be full face and suitable for 200 degrees F operating temperature, and the fluids carried. Gaskets shall be Garlock Multi-Swell 3760-U, only. Gaskets containing asbestos shall not be permitted. Bolt-ups for flanges shall be 316 stainless steel.
 3. Plugs, caps and similar accessories shall be of the same material as the pipe and of the locking type, unless otherwise noted.
 4. Unions shall be of the same material as the pipe, except for dielectric connections.
 5. Special protective tape shall be 10 mil tape.

PART 3 - INSTALLATION

3.1 INSTALLATION - GENERAL

- A. All valves and appurtenances shall be installed per these Specifications, the manufacturer's instructions and approved shop drawings in the locations shown, true to alignment and rigidly supported. Any damage to the above items shall be repaired to the satisfaction of the City before they are installed.

VALVES AND APPURTENANCES

- B. All materials shall be carefully inspected for defects in construction and materials. All debris and foreign material shall be cleaned out of openings, etc. All valve flange covers shall remain in place until connected piping is in place. All operating mechanisms shall be operated to check their proper functioning and all nuts and bolts checked for tightness. Valves and other equipment which do not operate easily, or are otherwise defective, shall be repaired or replaced.
- C. Unless otherwise noted, joints for valves and appurtenances shall be made up utilizing the same procedures as specified under the applicable type connecting pipe joint and all valves and other items shall be installed in the proper position as recommended by the manufacturer. Contractor shall be responsible for verifying manufacturers' torquing requirements for all valves.
- D. Contractor to provide 2-week notification to the City prior to cutting the existing Cast Iron pipe for the installation of the restrained flanged coupling and the bonneted knife gate valve. The City will close upstream valve to allow the contractor to dewater the existing pipe prior to installing the appurtenances.
- E. Contractor to take special care in cutting the existing cast iron pipe. Any damages to the existing pipe, resulting from cutting the pipe or installing the restrained flanged coupling to it, will be repaired by the Contractor and all associated costs shall be borne by the Contractor with no additional costs to the City.

3.2 INSTALLATION OF MANUAL OPERATIONAL DEVICES

- A. Unless otherwise noted, all operational devices shall be installed with the units of the factory, as shown on the Drawings or as acceptable to the City to allow accessibility to operate and maintain the item and to prevent interference with other piping, valves and appurtenances.
- B. Valves shall be set plumb, supported against settlement and properly fitted to the adjacent sections of main. All valves shall be operated prior to installation in accordance with the manufacturer's recommendations. Valve interior shall be clean and wet prior to operation.
- C. For manually operated valves 3-inch in diameter and smaller, valve operators and indicators shall be rotated to display toward normal operation locations.
- D. Floor boxes, valve boxes, extension stems and low floor stands shall be installed vertically centered over the operating nut, with couplings as required and the elevation of the box top shall be adjusted to conform to the elevation of the finished floor surface or grade at the completion of the Contract. Boxes and stem guides shall be adequately supported during concrete pouring to maintain vertical alignment. Valves boxes must not bear on the valve or pipe so that surface traffic loads are not transferred onto pipe.

- E. Installation of Pipeline Appurtenances
 - 1. All pipeline appurtenances shall be installed as required and in accordance with the manufacturer's recommendations, as acceptable to the City.
 - 2. Gages, meters and similar in-line items shall be isolated from testing pressures in excess of the rated pressure of the assembly.
 - 3. Use Teflon tape on all screwed fittings.

3.3 CLEANING

- A. All items including valve interiors shall be cleaned prior to installation, testing, and final acceptance.

PART 4 - INSPECTION AND TESTING

4.1 INSPECTION, TESTING AND CORRECTION OF DEFICIENCIES

- A. Take care not to over pressure valves or appurtenances during pipe testing. If any unit proves to be defective, it shall be replaced or repaired to the satisfaction of the City.

END OF SECTION

SECTION 31 10 00
SITE PREPARATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. This section describes general requirements, products, and methods of execution relating to site preparation, unless otherwise noted. This section applies to:
 - 1. Surface and subsurface demolition.
 - 2. Backfilling of excavations and depressions.
 - 3. Coordination, demolition and/or relocation of existing utilities.
 - 4. Prior to start of demolition of facilities, shut-off, disconnect, cut, and cap where required, underground utility services to facilities.
 - 5. Removal of A.C. pavement driveway and concrete pavement, concrete pads, and A.C. curbing.
 - 6. Removal of cyclone wire, wood fences and barricades.
 - 7. Removal of storm drainage piping, catch basins, and manholes.
 - 8. Removal of vegetation and trees as specified herein.
- B. Contractor shall provide labor, material and equipment required for demolishing, cutting, removing and disposing of existing construction as designated and shown on the Plans for the following as required, unless otherwise noted.

1.3 SUBMITTALS

- A. Comply with provisions of Caltrans Section 5-1.23 B(1).
- B. Submit all permits and certificates required for the project, for record purposes.
- C. Demolition schedule and proposed methods and operations.
- D. Permits and notices authorizing demolition.
- E. Letter or certificates of severance of utilities services from the affected agencies or utilities.
- F. Proposed haul route(s) from the demolition worksite to an authorized disposal site.

- G. Permit for transport and disposal of debris.
- H. Contractor shall photograph existing conditions of existing structure surfaces, equipment, and adjacent improvements that might be misconstrued as damage related to removal operations. File photographs with City prior to start of work.
- I. Submit proposed dust control measures.
- J. Submit proposed noise control measures.
- K. Work Schedule: Submit a proposed schedule of work items to be performed, and a description of how the work is to be accomplished, for the Engineer's review.
- L. Report of inspections conducted with the Engineer before and after performing work.

1.4 QUALITY ASSURANCE

- A. Comply with the following Standards: American National Standards Institute, Inc. "American National Standard Safety Requirements for Demolition" (ANSI A10.6 and A10.8).
- B. Regulatory Agencies:
 - 1. Comply with rules and regulations of State of California, California Code of Regulations, Title 8, Industrial Relations, Chapter 4, Subchapter 4, "Construction Safety Order."
 - 2. Comply with applicable local and state agencies having jurisdiction.
 - 3. Comply with governing EPA notification regulations.
- C. Secure all required Permits or Certificates for demolition or discontinuance of utilities, prior to beginning the work.

1.5 PROJECT CONDITIONS

- A. Disposition of Existing Improvements:
 - 1. All materials indicated to be removed shall become the property of the Contractor; dispose of these outside the project site.
 - a. Do not dispose of removed materials to the general public by sale, gift or in any other manner at the Site.
 - b. These provisions shall not be construed as limiting or prohibiting sale or disposal of such materials at the Site to duly licensed Contractors or material suppliers, provided materials are removed from the construction site by the Contractor.
 - 2. All removal of debris from the site, including removal of inventory to site of storage, is part of this Contract and shall be done by Contractor's employees and no others.

- B. Salvage and Reuse:
 - 1. Where units or items of existing work are designated to be removed and reused in the new work or are to become salvage, remove such units or items carefully.
 - a. Use tools and methods that will not damage such units or items.
 - b. Protect underlying or adjoining work from damage.
 - c. Salvaged items shall be cleaned by the Contractor.

- C. Protection:
 - 1. Erect and maintain temporary bracing, shoring, lights, barricades, except construction barricades for subsequent new construction, warning signs, and guards necessary to protect public, the City's employees, finishes, improvements to remain and adjoining property from damage, all in accordance with applicable regulations.
 - 2. Wet down areas affected by this work as required preventing dust and dirt from rising.

- D. Scheduling:
 - 1. Coordinate with the City in scheduling noisy or dirty work.
 - 2. Schedule work at the City's convenience to cause minimal interference with the City's normal operations.
 - 3. Jackhammering shall be coordinated with the City to minimize disturbance of occupants.

- E. Traffic Circulations: Ensure minimum interference with roads, streets, driveways, sidewalks, and adjacent facilities.
 - 1. Do not close or obstruct public thoroughfares without first obtaining the required permit or permission of the responsible jurisdiction.
 - 2. Where closing of a vehicular or pedestrian traffic circulation route is necessary, provide adequate directional signs to minimize the potential for confusion.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas affected by work of this Section and verify following:
 - 1. Disconnection of utilities as required.
 - 2. Utilities serving occupied portions of buildings on and off the site will not be disturbed or that temporary utility services have been provided.
 - 3. Removal by the City of the City's personal property, movable furniture and equipment items not designated for relocation.

- B. Where existing conditions conflict with representations of the Construction Documents, notify the City and obtain clarifications. Do not perform work affecting the conflicting conditions until clarification of the conflict is received.

3.2 PREPARATION

- A. Verify that the area to be demolished or removed has been vacated, or adequate space made available to perform the work.
- B. Arrange for, and verify termination of utility services to include removing meters and capping of lines.
- C. Lay out cutting work at Job Site and coordinate with related work for which cutting is required.

3.3 DEMOLITION

- A. If confirmed or suspected hazardous materials are encountered during operations, stop operations immediately and notify the Engineer.
- B. Perform work in accordance with ANSI A10.6-1969 unless otherwise noted.
- C. Provide noise and dust abatement as required to prevent contamination of adjacent areas.
 - 1. Remove all materials not designated as salvage, in their entirety.
 - 2. Remove building foundations in their entirety, unless otherwise indicated on the plans.
- D. Fill voids in the land left by the removal of existing structures as follows:
 - 1. In accordance with the requirements of Section 31 20 00, grade finished remaining surface to the contours shown, or if not shown, to match the existing natural contours.
- E. Lower, or remove, heavy structural framing members by hoist or crane.
- F. Concrete and Masonry:
 - 1. Demolish concrete and masonry in sections, less than 3 feet in any direction.
 - 2. Method of cutting shall be limited to saw cutting and torch.

3.4 CLEARING AND GRUBBING

- A. Locate and clearly flag vegetation to remain or to be relocated.
- B. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions and grubbing roots.

SITE PREPARATION

- C. Remove trash, debris, logs, concrete, masonry and other waste materials.
- D. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
- E. Completely remove stumps, roots, obstructions, and debris extending to a depth of 18-inches below subgrade.
- F. Use only hand methods for grubbing within drip line of remaining trees.
- G. Repair or replace vegetation indicated to remain that is damaged by construction operations, as directed by the City.
- H. Employ a qualified arborist, licensed in jurisdiction where the Project is located, to submit details of proposed repairs and to repair damage to shrubs.

3.5 CUTTING

- A. Make new openings neat.
- B. Do not cut or alter structural members and any utilities including appurtenances unless indicated to do so in the Construction Documents or written approval is received from the Engineer.
- C. Take care not to damage reinforcing or structural steel scheduled to remain in place.
- D. Concrete: Cut new openings in concrete by coring and saw cutting. Saw run-bys will not be permitted.

3.6 PREPARATION FOR NEW FINISH WORK

- A. Where demolished surfaces are scheduled to receive new finishes, Contractor shall restore such substrate to a condition ready to receive the scheduled new finishes, including grinding or leveling.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

3.8 FIELD QUALITY CONTROL

- A. The Engineer will accompany the Contractor before and after performance of work to observe physical condition of existing structures or improvements involved.

END OF SECTION

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SECTION 31 20 00

EARTH MOVING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Excavation and/or embankment from existing ground to subgrade, including soil sterilant, for roadways, driveways, parking areas, building pads, walks, paths, or trails and any other site improvements called for on the Plans.

1.2 RELATED DOCUMENTS

- A. Geotechnical Report: Found In Appendix A.
- B. ASTM:
 - 1. D 1557, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.
 - 2. D 1586, Method for Penetration Tests and Split-Barrel Sampling of Soils.
 - 3. D 2487, Classification of Soils for Engineering Purposes.
 - 4. D 3740, Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
 - 5. D 4318. Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
 - 6. E 329, Specification for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.
 - 7. E 548, Guide for General Criteria Used for Evaluating Laboratory Competence.
- C. California Building Code, California Code of Regulations, Title 24, Part 2, Chapter 18, Soils and Foundations, and Chapter 33, Safeguards During Construction.
- D. Caltrans Standard Specifications:
 - 1. Section 17, General.
 - 2. Section 19, Earthwork.
- E. CAL/OSHA, Title 8.

1.3 DEFINITIONS

- A. Borrow: Approved soil material imported from off-site for use as Structural Fill or Backfill.

- B. Excavation: Removal of material encountered above subgrade elevations.
 - 1. Authorized Over-Excavation: Excavation below subgrade elevations or beyond indicated horizontal dimensions as shown on plans or authorized by the Geotechnical Consultant.
 - 2. Unauthorized Over-Excavation: Excavation below subgrade elevations or beyond indicated horizontal dimensions without authorization by the Geotechnical Consultant. Unauthorized excavation shall be without additional compensation.
- C. Geotechnical Testing Agency: An independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock definition testing, as documented according to ASTM D 3740 and ASTM E 548.
- D. Structural Backfill: Soil materials approved by the Geotechnical Consultant and used to fill excavations resulting from removal of existing below grade facilities, including trees.
- E. Structural Fill: Soil materials approved by the Geotechnical Consultant and used to raise existing grades.
- F. Rock: Rock material in beds, ledges, unstratified masses, and conglomerate deposits and boulders of rock material $\frac{3}{4}$ -cubic yards or more in volume that when tested by an independent geotechnical testing agency, according to ASTM D 1586, exceeds a standard penetration resistance of 100 blows/2-inches.
- G. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man made stationary features constructed above or below grade.
- H. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, base or topsoil materials.
- I. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2-inches in diameter; and free of weeds, roots, and other deleterious materials.
- J. Unsuitable Material: Any soil material that is not suitable for a specific use on the Project. The Geotechnical Consultant will determine if a soil material is unsuitable.
- K. Relative Compaction: In-place dry density of soil expressed as percentage of maximum dry density of same materials, as determined by laboratory test procedure ASTM D 1557.
- L. Utilities: onsite underground pipes, conduits, ducts and cables.

1.4 SUBMITTALS

- A. Samples:
 - 1. If required by the Geotechnical Consultant, provide 20-pound samples, sealed in airtight containers, tagged with source locations and suppliers of each proposed soil material from on-site or borrow sources, 72 hours prior to use. Do not import materials to the Project without written approval of the Geotechnical Consultant.
 - 2. Provide materials from same source throughout work. Change of source requires approval of the Geotechnical Consultant.
- B. Material Test Reports: Provide, from a qualified testing agency, the following test results showing compliance with the project requirements:
 - 1. Classification according to ASTM D 2487 of each onsite or borrow soil material proposed for fill and backfill.
 - 2. Laboratory compaction curve in conformance with ASTM D 1557 for each onsite or borrow soil material proposed for fill and backfill.

1.5 QUALITY ASSURANCE

- A. Provide an independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock definition testing, as documented according to ASTM D 3740 and ASTM E 548.
- B. Conform all work and materials to the recommendations or requirements of the Geotechnical Report and meet the approval of the Geotechnical Consultant.
- C. Conform all work to the appropriate portion(s) of Caltrans Standard Specifications, Section 17 and 19.
- D. Percentage of compaction specified shall be the minimum acceptable. The percentage represents the ratio of the dry density of the compacted material to the maximum dry density of the material as determined by the procedure set forth in ASTM D 1557.
- E. Perform excavation, filling, compaction and related earthwork under the observation of the Geotechnical Consultant. Materials placed without approval of the Geotechnical Consultant will be presumed to be defective and, at the discretion of the Geotechnical Consultant, shall be removed and replaced at no cost to the City. Notify the Geotechnical Consultant at least 24-hours prior to commencement of earthwork and at least 48 hours prior to testing.
- F. The Geotechnical Consultant will perform observations and tests required to enable him to form an opinion of the acceptability of the Project earthwork. Correct earthwork that, in the opinion of the Geotechnical Consultant, does not meet the requirements of these Technical Specifications and the Geotechnical Report.

- G. Upon completion of the construction work, certify that all compacted fills and foundations are in place at the correct locations, and have been constructed in accordance with sound construction practice. In addition, certify that the materials used are of the types, quality and quantity required by these Technical Specifications and the Geotechnical Report. The Contractor shall be responsible for the stability of all fills and backfills constructed by his forces and shall replace portions that in the opinion of the Geotechnical Consultant have been displaced or are otherwise unsatisfactory due to the Contractor's operations.
- H. Finish subgrade tolerance at completion of grading:
 - 1. Building and paved areas: ± 0.05
 - 2. Other areas: ± 0.10 feet.

1.6 PROJECT CONDITIONS

- A. Promptly notify the City of surface or subsurface conditions differing from those disclosed in the Geotechnical Report. First notify the City verbally to permit verification and extent of condition and then in writing. No claim for conditions differing from those anticipated in the Contract Documents and disclosed in the Geotechnical Report will be allowed unless the Contractor has notified the City in writing of differing conditions prior to the Contractor starting work on affected items.
- B. Protect open excavations, trenches, and the like with fences, covers and railings to maintain safe pedestrian and vehicular traffic passage.
- C. Prevent erosion of freshly graded areas during construction and until such time as permanent drainage and erosion control measures have been installed.
- D. Temporarily stock-pile fill material in an orderly and safe manner and in a location approved by the City.
- E. Environmental Requirements: When unfavorable weather conditions necessitate interrupting earthwork operation, areas shall be prepared by compaction of surface and grading to avoid collection of water. Provide adequate temporary drainage to prevent erosion. After interruption, compaction specified in last layer shall be re-established before resuming work.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: On-site soils are considered suitable for use as fill provided the materials are placed in accordance with Geotechnical Recommendations. Highly expansive soils shall not be used as select structural fill, or used as backfill for trenches located within hardscape areas.

- B. Imported fill soils, if required, should be predominantly granular in nature, and should be free of organics, debris, or rocks over 3 inches in size, and shall be approved by the Geotechnical Engineer before importing to the site. Imported non-expansive soils shall have a Plasticity Index less than 15, and R-value of at least 20, and fines content between 15 and 65 percent. Import fill shall be considered non-hazardous per Department of Toxic Substances Control guidelines (DTSC, 2017) and non-corrosive per Caltrans Corrosion Guidelines (Caltrans, 2015).

2.2 SOIL STERILANT

- A. Commercial chemical for weed control, registered by EPA. Provide granular, liquid or wet-able powder form.

PART 3 - EXECUTION

3.1 GENERAL

- A. Conform to Section 19, Earthwork, Caltrans Standard Specifications as modified by the Contract Documents.
- B. Placement and compaction of material by flooding, ponding, or jetting will not be permitted.
- C. The use of explosives will not be permitted.
- D. Grading and earthwork operations shall be observed and tested by a representative of the Geotechnical Engineer for conformance with the project plans/specifications and the geotechnical recommendations. This work includes site preparation, selection of satisfactory materials, and placement and compaction of the subgrades and fills. Sufficient notification prior to commencement of earthwork is essential to make certain that the work will be properly observed.

3.2 CONTROL OF WATER AND DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding the site and surrounding area. Provide dewatering equipment necessary to drain and keep excavations and site free from water.
- B. Dewater during backfilling operation so that groundwater is maintained a least one foot below level of compaction effort.
- C. Obtain the Geotechnical Consultant's approval for proposed control of water and dewatering methods.

- D. Protect subgrades from softening, undermining, washout and damage by rain or water accumulation.
- E. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations.
- F. Maintain dewatering system in place until dewatering is no longer required.

3.3 WET WEATHER CONDITIONS

- A. Do not prepare subgrade, place or compact soil materials if subgrade or materials are above optimum moisture content.
- B. If the Geotechnical Consultant allows work to continue during wet weather conditions, conform to supplemental recommendations provided by the Geotechnical Consultant.

3.4 BRACING AND SHORING

- A. Conform to California and Federal OSHA requirements.
- B. Place and maintain such bracing and shoring as may be required to support the sides of the excavations for the proper protection of workmen; to facilitate the work; to prevent damage to the facility being constructed; and to prevent damage to adjacent structures or facilities. Remove all bracing and shoring upon completion of the work.
- C. Be solely responsible for all bracing and shoring and, if requested by the City, submit details and calculations to the City. The City may forward the submittal to the Geotechnical Consultant, the Design Engineer and/or the California Division of Industrial Safety for their review. The Contractor's submittal shall include the basic design, assumed soils conditions and estimation of forces to be resisted, together with plans and specifications of the materials and methods to be used, and shall be prepared by a Civil Engineer or Structural Engineer registered in California. No excavations related to the proposed facility shall precede a response to the submittal by the City.
- D. Be solely responsible for installing and extracting the sheathing in a manner which will not disturb the position or operation of the facility being constructed or adjacent utilities and facilities.

3.5 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil

- B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.
- C. Remove trash, debris, weeds, roots, and other waste materials.
- D. Stockpile topsoil materials designated to remain on site at a location approved by the City at a location away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.
- E. Do not stockpile topsoil within drip line of remaining trees.

3.6 EXCAVATION

- A. Excavate earth and rock to lines and grades shown on drawings and to the neat dimensions indicated on the Plans, required herein or as required to satisfactorily compact backfill.
- B. Remove and dispose of large rocks, pieces of concrete and other obstructions encountered during excavation.
- C. Excavation through buried concrete and other unknown obstructions will require specialized techniques for demolition and removal.
- D. Where forming is required, excavate only as much material as necessary to permit placing and removing forms.
- E. Provide supports, shoring and sheet piles required to support the sides of excavations or for protection of adjacent existing improvements.

3.7 GRADING

- A. Uniformly grade the Project to the elevations shown on plans
- B. Finish ditches, gutters and swales to the sections, lines and grades indicated and to permit proper surface drainage.
- C. Round tops and bottoms of slopes as indicated or to blend with existing contours.

3.8 SUBGRADE PREPARATION

- A. Subgrade Preparation: Prior to backfilling depressions created by the removal of old foundations and utility lines, scarify the bottom of the excavation to an approximate depth of 8 inches and uniformly moisture condition the scarified surfaces to a moisture content that is at least 2 percent over optimum. Compact the scarified surfaces to a minimum of 90 percent relative compaction at above optimum moisture content.

- B. Over-excavate any remaining soft (pumping) areas down to firm soil and backfill the area.
- C. Subgrade shall be maintained in a moist, but not wet, condition by periodically sprinkling water prior to the placement of additional fill or installation of roads. Subgrade that has been permitted to dry out and loosen or develop desiccation cracking should be scarified, moisture conditioned, and re-compacted as recommended above.
- D. Install underground utilities and service connections prior to final preparation of subgrade and placement of base materials for final surface facilities. Extend services so that final surface facilities are not disturbed when service connections are made.
- E. Prepare subgrades under the structural section of paved areas, curbs, gutters, walks, structures, other surface facilities and areas to receive structural fill.
- F. Protect utilities from damage during compaction of subgrades and until placement of final pavements or other surface facilities.
- G. Obtain the Geotechnical Consultant's approval of subgrades prior to placing pavement structural section.

3.9 FILL PLACEMENT AND COMPACTION

- A. Place fill in uniformly moisture conditioned and compacted lifts not exceeding 8 inches in loose thickness. Each lift should be thoroughly moisture conditioned and compacted to 90 percent before successive fill layers are placed.
- B. In order to achieve satisfactory compaction in the subgrade and fill soils, it may be necessary to adjust the soil moisture content at the time of soil compaction per geotechnical recommendations. This may require that water be added and thoroughly mixed into any soils which are too dry or that scarification and aeration be performed in any soils which are too wet.
- C. Obtain the Geotechnical Consultant's approval of surface to receive structural fill prior to placement of structural fill material.
- D. Place structural fill on prepared subgrade.
- E. Do not drop fill on structures. Do not backfill around, against or upon concrete or masonry structures until structure has attained sufficient strength to withstand loads imposed and the horizontal structural system had been installed.
- F. Do not compact by ponding, flooding or jetting.

- G. Perform compaction using rollers, pneumatic or vibratory compactors or other equipment and mechanical methods approved by the Geotechnical Consultant.

3.10 SOIL STERILIZATION

- A. Apply soil sterilant to areas indicated, such as beneath asphalt concrete pavement, brick pavement, concrete pavement and at grade concrete slabs, including sidewalks, curbs and gutters. Also where indicated apply soil sterilant below expansion and control joints and at areas where pipes, ducts or other features penetrate slabs.
- B. Apply soil sterilant uniformly and at the rates recommended by the manufacturer.
- C. Apply soil sterilant to prepared subgrade, or after installation of aggregate base as recommended by the manufacturer.

3.11 DISPOSAL

- A. Lawfully dispose of all unsuitable and excess or surplus material off-site at no cost to the City.

END OF SECTION

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APPENDIX A

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APPENDIX A

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June 28, 2017

BAGG Job No: BKFEN-33-00

Ms. Yousra Tilden
BKF Engineers
255 Shoreline Drive, Suite 200
Redwood City, CA 94065

Geotechnical Consultation
Platform and Vault Design
Lake Frey and Madigan

Dear Ms. Tilden:

This letter presents the results of our desktop study for the captioned project at Lake Frey and Lake Madigan, located in northwestern Solano County, about 14 miles north of Vallejo, California. Our recommendations are based on our brief visit to the two sites on September 21, 2016, our discussions regarding requirement of the project, and our research of published literature regarding geologic and seismic conditions in the vicinity.

Site Conditions

Both sites are located in an area mapped by Sims, et al (See Plate 2, Regional Geology Map) as being underlain by Rhyolitic lava flows that are part of the Tertiary Sonoma Volcanics. This rock formation contains zones of tuff, which are much weaker than the more prevalent lava flows. For the purposes of site classification, the Sonoma Volcanics as a whole, have been classified (Wills, et al, 2000) as Class B rocks, i.e. having a V_{S30} between 2,500 and 5,000 ft/sec. Similarly aged tuffs have been classified as Class C rocks; having a V_{S30} between 1,200 and 2,500 ft/sec.

The two sites are located a short distance from the State Alquist Priolo hazard zone around the Green Valley fault. The site at Lake Madigan is roughly 2/3 mile from the State fault hazard zone and the Lake Frey site is roughly 7/8 mile from the fault hazard zone. However, older fault traces within the Green Valley fault zone, but not within the Alquist Priolo hazard zone, are located about 1/4 mile east of Lake Madigan and within Lake Frey.

At Lake Frey, the relatively hard volcanic rocks are exposed at the surface throughout the site area; however, in the immediate vicinity of the wood platform at the base of the ladder, there is evidence of white/tan tuff at the surface. It is not known if this is a significant deposit, or

merely a small lens of the tuff. The lava rock was noted to have very widely spaced, near-vertical fractures and moderately to closely spaced fractures that slope into the hillside, toward the lake. We anticipate the tuff can most likely be excavated with a percussion spade; however, the lava flows will likely require a jack hammer or rock drill.

At Lake Madigan, however, the proposed construction site, which is in a broad valley, appears to be underlain by cobble fill at the base of the dam. Many of the cobbles were at least 12 inches in size. The depth of this fill is not expected to be significant, as there is a distinct break in slope where the base of the dam meets the native ground surface. While the spillway on the left side of the dam suggests firm bedrock is shallow, the gentle native slopes in the valley center at the toe of the dam indicate it would not be unreasonable to anticipate alluvial soils and/or some amount of completely weathered bedrock to be beneath the fill.

Proposed Project

Lake Frey dam has a rock outlet tunnel that conveys pipes from the outlet tower to the outfall at the tunnel's west portal. There is a decayed and damaged wooden platform at the portal, will be replaced with a larger, more durable platform designed and rated for heavy equipment. The existing access ladder, which provides maintenance access from the top of the outfall slope to the tunnel portal approximately 15 feet below, will also be replaced with a new ladder that is OSHA compliant. We also understand that a 1,500-pound capacity hoist will be added to the Lake Frey site. The hoist will be supported on new footings at the top of the ladder and on the outside edge of the lower platform.

The Lake Madigan outlet pipe begins at the outlet tower, runs through the dam and emerges at the toe of the dam in a vault with an abandoned gate valve that has been filled with concrete. New piping and a new butterfly valve are required for downstream control, which will be placed in a new cast-in-place concrete vault immediately downstream of the old vault. Remote control of the valve will be either by a bevel gear operator or hydraulic actuator.

2016 California Building Code Site Characterization

The Structural Engineering Design Provisions of the California Building Code (CBC) have been revised in recent years to reflect the changing knowledge regarding earthquake shaking from major earthquakes. The new code uses mapped spectral acceleration values for periods of 0.2 and 1.0 seconds, to better represent the probabilistic shaking that can be expected for various types of structures at a given site. The “mapped” values generally represent “bedrock” shaking with a 2 percent probability of being exceeded in a 50-year period. The values are then modified for site-specific use based on a broad classification of the soil profile at the site. Based on the soil information obtained from our research and observations at the site, and using the

site coordinates indicated in the following table, we derived the following earthquake ground motion parameters in accordance with 2016 California Building Code.

TABLE 1
Parameters for Seismic Design

2016 CBC Parameters	Corresponding Parameter Values	
	Lake Frey	Lake Madigan
Site Latitude	38.2910° North	37.3076° North
Site Longitude	122.1913° West	122.1926° West
Site Class, Table 1613A.5.2	Rock – Class B	Rock – Class B
Mapped S_s , Figure 1613.5(3)	1.863g	1.900g
Mapped S_1 , Figure 1613.5(4)	0.654g	0.668g
Site Coefficient F_a , Table 1613A.5.3(1)	1.00	1.00
Site Coefficient F_v , Table 1613A.5.3(2)	1.00	1.00
Site Modified $S_{MS} = F_a S_s$	1.863g	1.900g
Site Modified $S_{M1} = F_a S_1$	0.654g	0.668g
Design $S_{DS} = \frac{2}{3} S_{MS}$	1.242	1.267g
Design $S_{D1} = \frac{2}{3} S_{M1}$	0.436	0.446g

Foundation Recommendations

At Lake Frey, the new ladder and platform can be supported on excavated footings, shallow drilled piers, and/or drilled rock anchors. Footings should be at least one foot wide, at least one foot deep, and should not expose a vertical fracture within the excavation. Such footings can be designed for a bearing value of 4,000 psf in hard rock and 3,000 psf in tuff for total loads including seismic or wind loading. If the bottom edge of the footing is at least 3 footing widths away from the adjacent slope face, these bearing values may be increased to 6,000 psf and 4,500 psf, respectively.

Shallow drilled piers will essentially be end bearing, and should also be drilled such that the base of the pier is at least 3 diameters away from any slope face. Provided the drilled hole is cleaned of all loose material, the above bearing values may be used at the pier base.

Lateral capacity of shallow footings or drilled piers can be taken as an equivalent fluid pressure of 500 pcf within firm rock on level ground. For portions of foundations that are less than 3 widths (diameters) away from a slope face, the lateral resistance should be reduced to half that value. For drilled piers, the allowable passive can be assumed to act over 1½ diameters.

Because of the possibility of encountering zones of tuff within the lava flow, rock anchors should penetrate at least five continuous feet of hard rock, or an accumulation of 10 feet of hard rock. Rock anchors can be designed for a pullout skin friction resistance of 3,000 psi within the hard rock.

At Lake Madigan, shallow footings should be at least 1 foot wide and founded at least 18 inches below adjacent grade. Because of the likelihood of encountering alluvial soils or soils weathered in place from the underlying bedrock, these footings should be designed for conventional bearing values of 2,000 psf for dead loads and 3,000 psf for design loads. The latter can be increased by one third when including seismic loading. If it can be confirmed by this office that the footings are founded in firm, weathered bedrock, these values may be increased to 4,000 psf and 6,000 psf, respectively. Passive resistance can be obtained below a depth of 12 inches in soil at a rate of 300 pcf and at 500 pcf within weathered rock as identified by this office.

Closure

The conclusions and recommendations contained in this letter are based on a brief visit to each site, and on our research of available published geologic literature pertaining to the site vicinity. A site-specific investigation has not been completed for this study. It is therefore very important that BAGG Engineers is given the opportunity to observe conditions exposed during foundation construction, and unexpected soil/bedrock conditions may warrant revised recommendations. For this reason, BAGG Engineers cannot accept responsibility for the recommendations contained in this letter report if we are not allowed to observe foundation excavations during construction.

We trust this letter provides the information you require at this time. Please do not hesitate to contact us if you have any questions or comments.

Sincerely,
BAGG Engineers



Jason Van Zwol
VP/Chief Engineer



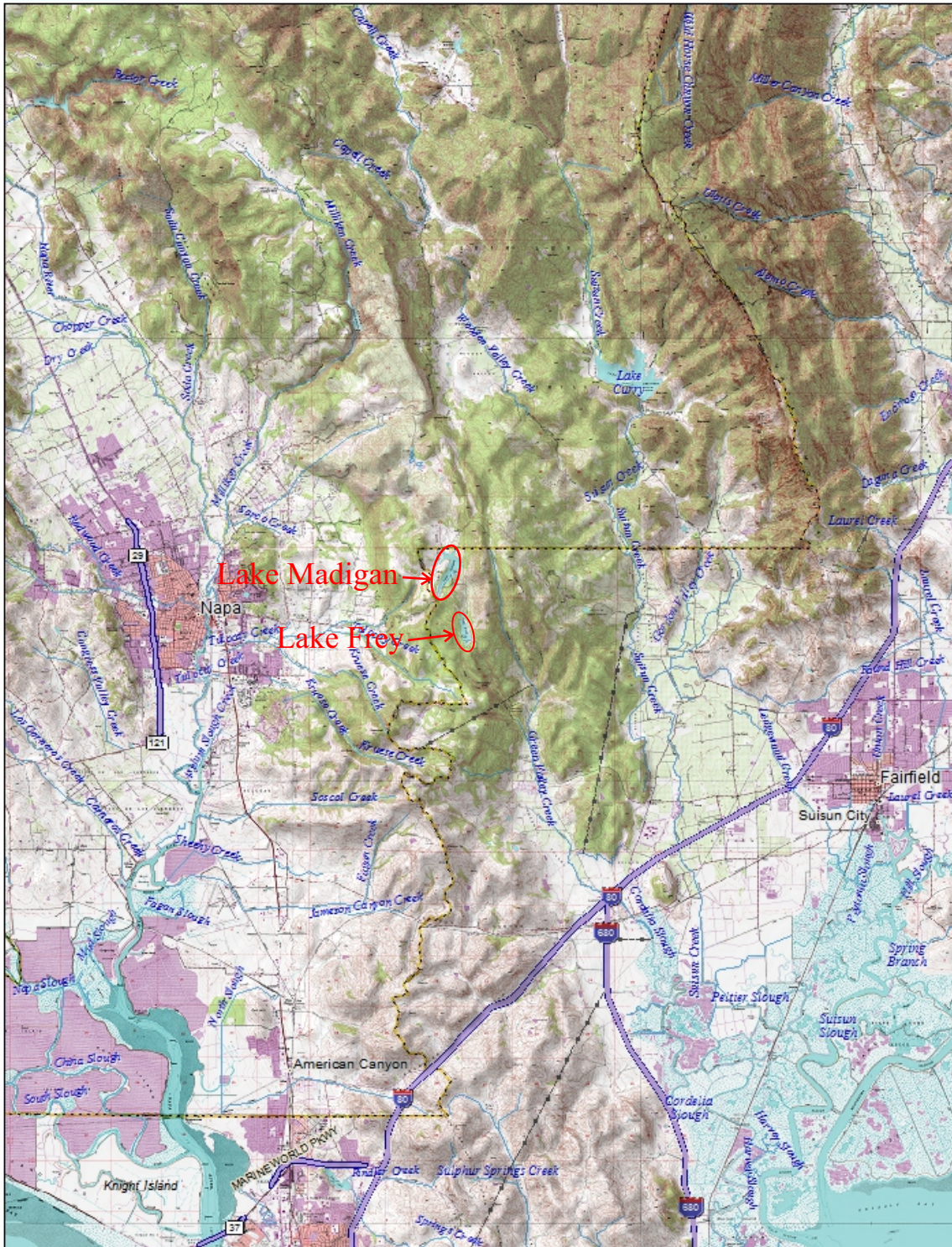
References:

BKF Engineers . Surveyors . Planners, Drawing Number "Topo", Sheet 1 of 1, *Topographic Survey, Lake Frey*, dated 2017/04/13, Job No: 160296.

Cornerstone Structural Engineering Group, Sheet S1, *Lake Madigan Plan & Elevation*, and Sheet S2, *Lake Frey Plan*, undated, marked with Project No: 2017015.

J.D. Sims, K.F. Fox Jr., J.A. Bartow, and E.J. Helley, *Preliminary Geologic Map of Solano County and Parts of Napa, Contra Costa, Marin, and Yolo Counties, California*, USGS Miscellaneous Field Studies Map MF-484, Sheet 3 of 5.

C.J. Wills, M. Petersen, W.A. Bryant, M. Reichle, G.J. Saucedo, S. Tan, G. Taylor, and J. Treiman, *A Site-Conditions Map for California Based on Geology and Shear-Wave Velocity*, Bulletin of the Seismological Society of America, 90, 6B, pp S187-S208, December 2000.



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MN (13.6° E)



Data Zoom 10-3

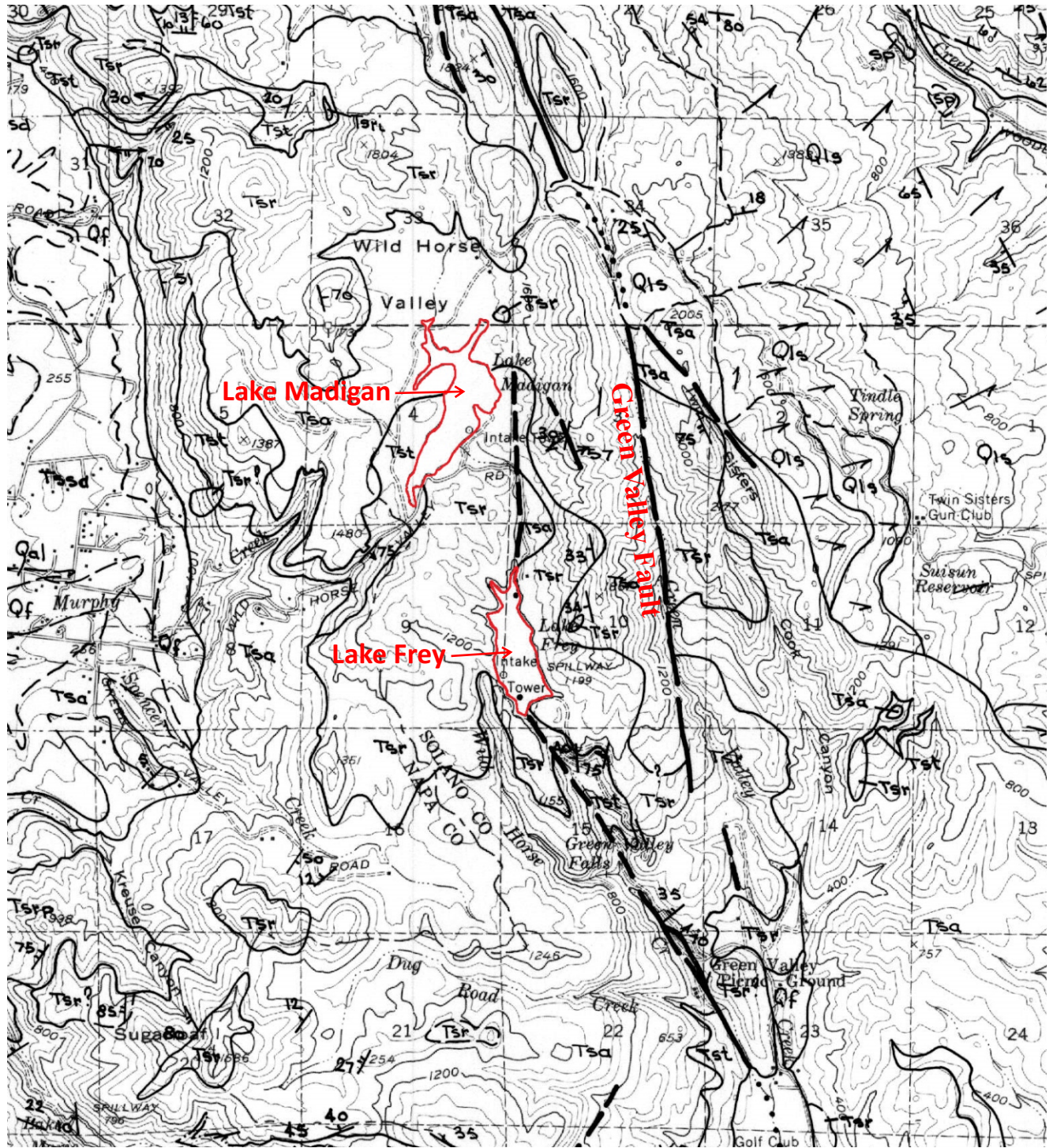
**VALLEJO LAKES FREY & MADIGAN
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SOLONO COUNTY, CALIFORNIA**

VICINITY MAP

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PLATE
1



Reference: Preliminary Geologic Map of Solano County and Parts of Napa, Contra Costa, Marin, and Yolo Counties, California, compiled by Sims, et al, 1973, USGS Map MF-484, Sheet 3 of 5.

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REGIONAL GEOLOGY MAP

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PLATE
2



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LAKE FREY PHOTOS

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PLATE
3



**VALLEJO LAKES FREY & MADIGAN
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LAKE MADIGAN PHOTOS

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PLATE
4