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**CONTRACT DOCUMENTS  
FOR**

**JEFFREY WAY  
UTILITY EXTENSION  
IMPROVEMENT PROJECT  
CIP PROJECT NO. 336-31695**

**Bid Opening  
July 15, 2025 at 11:00 a.m.**

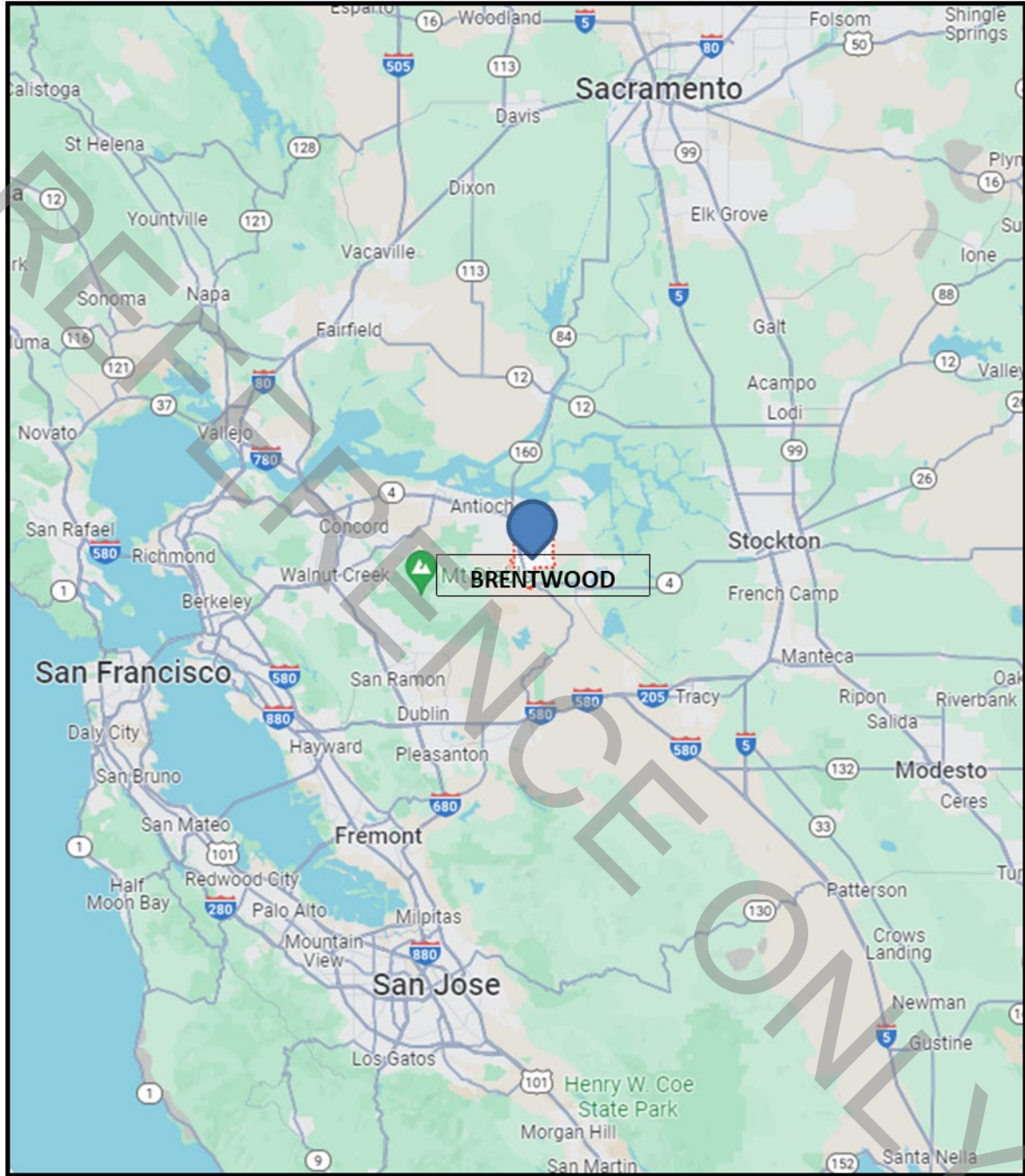
**Location of Bid Submittal:  
City Clerk  
City Hall  
150 City Park Way  
Brentwood, CA 94513**

**Approved by:  
Vatsal Patel for Allen Baquilar  
Director of Engineering/City Engineer**

\_\_\_\_\_  
Signature

6/23/25

\_\_\_\_\_  
Date



LOCATION MAP  
City of Brentwood

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REFERENCE ONLY

## Notice Inviting Bids

- 1. Bid Submission.** The City of Brentwood ("City") will accept sealed bids for its Jeffrey Way Utility Extension Improvement Project, CIP Project No. 336-31695 ("Project"), by or before July 15, 2025, at 11:00 a.m., at its City Clerk's office, located at City Hall, third floor, 150 City Park Way, Brentwood, California 94513, at which time the bids will be publicly opened and read aloud at City Hall, Council Chamber, 150 City Park Way, Brentwood, California 94513.

Bids that are hand delivered must be handed directly to the City employee staffing the City Hall third floor window. If the window is not staffed, you must contact the City Clerk by dialing 5440, using the phone at the third floor window, and hand deliver it to the City employee answering the door.

- 2. Project Information.**

- 2.1 Location and Description.** The Project is located at Empire Way, and is described as follows: Extend existing potable, non-potable, and sanitary sewer utilities westward along Empire Avenue through State Route 4 crossings to the Innovation Center.
- 2.2 Time for Final Completion.** The Project must be fully completed within 60 calendar days from the start date set forth in the Notice to Proceed. City anticipates that the Work will begin on or about September 1, 2025, but the anticipated start date is provided solely for convenience and is neither certain nor binding.
- 2.3 Estimated Cost.** The estimated construction cost is 1,565,000.

- 3. License and Registration Requirements.**

- 3.1 License.** This Project requires a valid California contractor's license for the following classification(s): Class "A".
- 3.2 DIR Registration.** City may not accept a Bid Proposal from or enter into the Contract with a bidder, without proof that the bidder is registered with the California Department of Industrial Relations ("DIR") to perform public work pursuant to Labor Code § 1725.5, subject to limited legal exceptions.

- 4. Contract Documents.** Bidders must request and obtain an electronic copy of the plans, specifications, bid forms and contract documents for the Project, and any addenda thereto ("Contract Documents") directly from the City (at no charge) by completing and submitting the "Document Request Form" located on the City's website at: <http://www.brentwoodca.gov/projects-bids-rfps>. The City may reject a bid submitted by a bidder that did not obtain the Contract Documents from the City as required.

- 5. Bid Security.** The Bid Proposal must be accompanied by bid security of ten percent of the maximum bid amount, in the form of a cashier's or certified check made payable to City, or a bid bond executed by a surety licensed to do business in the State of California on the Bid Bond form included with the Contract Documents. The bid security must guarantee that within ten days after City issues the Notice of Potential Award, the successful bidder will execute the Contract and submit the payment and performance bonds, insurance certificates and endorsements, valid Certificates of Reported Compliance as required under the California Air Resources Board's In-Use Off-Road Diesel-Fueled Fleets Regulation (13 CCR § 2449 et seq.) ("Off-Road Regulation"), if applicable, and any other submittals required by the Contract Documents, including information regarding local purchases and local labor if required by the Instructions to Bidders, using the form provided with the Notice of Potential Award, and as specified in the Notice of Potential Award.

**6. Prevailing Wage Requirements.**

**6.1 General.** Pursuant to California Labor Code § 1720 et seq., this Project is subject to the prevailing wage requirements applicable to the locality in which the Work is to be performed for each craft, classification or type of worker needed to perform the Work, including employer payments for health and welfare, pension, vacation, apprenticeship and similar purposes.

**6.2 Rates.** The prevailing rates are on file with the City and are available online at <http://www.dir.ca.gov/DLSR>. Each Contractor and Subcontractor must pay no less than the specified rates to all workers employed to work on the Project. The schedule of per diem wages is based upon a working day of eight hours. The rate for holiday and overtime work must be at least time and one-half.

**6.3 Compliance.** The Contract will be subject to compliance monitoring and enforcement by the DIR, under Labor Code § 1771.4.

**7. Performance and Payment Bonds.** The successful bidder will be required to provide performance and payment bonds, each for 100% of the Contract Price, as further specified in the Contract Documents.

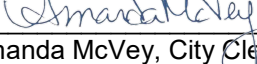
**8. Substitution of Securities.** Substitution of appropriate securities in lieu of retention amounts from progress payments is permitted under Public Contract Code § 22300.

**9. Subcontractor List.** Each Subcontractor must be registered with the DIR to perform work on public projects. Each bidder must submit a completed Subcontractor List form with its Bid Proposal, including the name, location of the place of business, California contractor license number, DIR registration number, and percentage of the Work to be performed (based on the base bid price) for each Subcontractor that will perform Work or service or fabricate or install Work for the prime contractor in excess of one-half of 1% of the bid price, using the Subcontractor List form included with the Contract Documents.

**10. Instructions to Bidders.** All bidders should carefully review the Instructions to Bidders for more detailed information before submitting a Bid Proposal. The definitions provided in Article 1 of the General Conditions apply to all of the Contract Documents, as defined therein, including this Notice Inviting Bids.

**11. Retention.**

**11.1 Percentage.** The percentage of retention that will be withheld from progress payments is 5%.

By:   
Amanda McVey, City Clerk

Date: June 18, 2025

Publication Date: June 20, 2025

END OF NOTICE INVITING BIDS

## Instructions to Bidders

Each Bid Proposal submitted to the City of Brentwood ("City") for its Jeffrey Way Utility Extension Improvement Project, CIP Project No. 336-31695 ("Project") must be submitted in accordance with the following instructions and requirements:

### 1. Bid Submission.

- 1.1 General.** Each Bid Proposal must be completed, using the form provided in the Contract Documents, signed, and submitted to City in a sealed envelope, with all required forms and attachments, by or before the date and time set forth in Section 1 of the Notice Inviting Bids, or as amended by subsequent addendum. Faxed or emailed Bid Proposals will not be accepted, unless otherwise specified. Late submissions will be returned unopened. City reserves the right to postpone the date or time for receiving or opening bids. Each bidder is solely responsible for all of its costs to prepare and submit its bid and by submitting a bid waives any right to recover those costs from City. The bid price(s) must include all costs to perform the Work as specified, including all labor, material, supplies, and equipment and all other direct or indirect costs such as applicable taxes, insurance and overhead.
- 1.2 Bid Envelope.** The sealed envelope containing the Bid Proposal and all required forms and attachments must be clearly labeled and addressed as follows:

**BID PROPOSAL:**

Jeffrey Way Utility Extension Improvement Project  
CIP Project No. 336-31695

City Clerk  
Attn: Amanda McVey  
City of Brentwood  
150 City Park Way  
Brentwood, CA 94513

The envelope must also be clearly labeled, as follows, with the bidder's name, address, and its registration number with the California Department of Industrial Relations ("DIR") for bidding on public works contracts (Labor Code §§ 1725.5 and 1771.1):

*[Contractor company name]*  
*[street address]*  
*[city, state, zip code]*  
DIR Registration No: \_\_\_\_\_

- 1.3 DIR Registration.** Subject to limited legal exceptions for joint venture bids and federally-funded projects, City may not accept a Bid Proposal from a bidder without proof that the bidder is registered with the DIR to perform public work under Labor Code § 1725.5. If City is unable to confirm that the bidder is currently registered with the DIR, City may disqualify the bidder and return its bid unopened. (Labor Code §§ 1725.5 and 1771.1(a).)
- 2. Bid Proposal Form and Enclosures.** Each Bid Proposal must be completed in ink using the Bid Proposal form included with the Contract Documents. The Bid Proposal form must be fully completed without interlineations, alterations, or erasures. Any necessary corrections must be clear and legible, and must be initialed by the bidder's authorized representative. A Bid Proposal submitted with exceptions or terms such as "negotiable," "will negotiate," or similar, will be considered nonresponsive. Each Bid Proposal must be accompanied by bid security, as set forth in

Section 4 below, and by a completed Subcontractor List and Non-Collusion Declaration using the forms included with the Contract Documents, and any other required enclosures, as applicable.

- 3. Authorization and Execution.** Each Bid Proposal must be signed by the bidder's authorized representative. A Bid Proposal submitted by a partnership must be signed in the partnership name by a general partner with authority to bind the partnership. A Bid Proposal submitted by a corporation must be signed with the legal name of the corporation, followed by the signature and title of two officers of the corporation with full authority to bind the corporation to the terms of the Bid Proposal, under California Corporations Code § 313.
- 4. Bid Security.** Each Bid Proposal must be accompanied by bid security of ten percent of the maximum bid amount, in the form of a cashier's check or certified check, made payable to the City, or bid bond using the form included in the Contract Documents and executed by a surety licensed to do business in the State of California. The bid security must guarantee that, within ten days after issuance of the Notice of Potential Award, the bidder will: execute and submit the enclosed Contract for the bid price; submit payment and performance bonds for 100% of the maximum Contract Price; submit the insurance certificates and endorsements; and submit valid Certificates of Reported Compliance as required by the Off-Road Regulation, if applicable, and any other submittals, if any, required by the Contract Documents, including information regarding local purchases and local labor if required by these Instructions to Bidders, using the form provided with the Notice of Potential Award, and as specified in the Notice of Potential Award A Bid Proposal may not be withdrawn for a period of 60 days after the bid opening without forfeiture of the bid security, except as authorized for material error under Public Contract Code § 5100 et seq.
- 5. Requests for Information.** Questions or requests for clarifications regarding the Project, the bid procedures, or any of the Contract Documents must be submitted in writing to Vatsal Patel, Engineering Manager, at [VPatel@brentwoodca.gov](mailto:VPatel@brentwoodca.gov). Oral responses are not authorized and are not binding on the City. Bidders should submit any such written inquiries no later than 4:00 p.m. at least five Working Days before the scheduled bid opening. Questions received any later might not be addressed before the bid deadline. An interpretation or clarification by City in response to a written inquiry will be issued in an addendum.
- 6. Pre-Bid Investigation.**

  - 6.1 General.** Each bidder is solely responsible at its sole expense for diligent and thorough review of the Contract Documents, examination of the Project site, and reasonable and prudent inquiry concerning known and potential site and area conditions prior to submitting a Bid Proposal. Each bidder is responsible for knowledge of conditions and requirements which reasonable review and investigation would have disclosed. However, except for any areas that are open to the public at large, bidders may not enter property owned or leased by the City or the Project site without prior written authorization from City.
  - 6.2 Document Review.** Each bidder is responsible for review of the Contract Documents and any informational documents provided "For Reference Only," e.g., as-builts, technical reports, test data, and the like. A bidder is responsible for notifying City of any errors, omissions, inconsistencies, or conflicts it discovers in the Contract Documents, acting solely in its capacity as a contractor and subject to the limitations of Public Contract Code § 1104. Notification of any such errors, omissions, inconsistencies, or conflicts must be submitted in writing to the City no later than five Working Days before the scheduled bid opening. (See Section 5, above.) City expressly disclaims responsibility for assumptions a bidder might draw from the presence or absence of information provided by City.
  - 6.3 Project Site.** Questions regarding the availability of soil test data, water table elevations, and the like should be submitted to the City in writing, as specified in Section 5, above. Any

subsurface exploration at the Project site must be done at the bidder's expense, but only with prior written authorization from City. All soil data and analyses available for inspection or provided in the Contract Documents apply only to the test hole locations. Any water table elevation indicated by a soil test report existed on the date the test hole was drilled. The bidder is responsible for determining and allowing for any differing soil or water table conditions during construction. Because groundwater levels may fluctuate, difference(s) in elevation between ground water shown in soil boring logs and ground water actually encountered during construction will not be considered changed Project site conditions. Actual locations and depths must be determined by bidder's field investigation. The bidder may request access to underlying or background information on the Project site in City's possession that is necessary for the bidder to form its own conclusions, including, if available, record drawings or other documents indicating the location of subsurface lines, utilities, or other structures.

- 6.4 Utility Company Standards.** The Project must be completed in a manner that satisfies the standards and requirements of any affected utility companies or agencies (collectively, "utility owners"). The successful bidder may be required by the third party utility owners to provide detailed plans prepared by a California registered civil engineer showing the necessary temporary support of the utilities during coordinated construction work. Bidders are directed to contact the affected third party utility owners about their requirements before submitting a Bid Proposal.
- 7. Bidders Interested in More Than One Bid.** No person, firm, or corporation may submit or be a party to more than one Bid Proposal unless alternate bids are specifically called for. However, a person, firm, or corporation that has submitted a subcontract proposal or quote to a bidder may submit subcontract proposals or quotes to other bidders.
- 8. Addenda.** Subject to the limitations of Public Contract Code § 4104.5, City reserves the right to issue addenda prior to bid time. Any addenda issued prior to the bid opening are part of the Contract Documents. Each bidder is solely responsible for ensuring it has received and reviewed all addenda prior to submitting its bid. Bidders should check City's website periodically for any addenda or updates on the Project at: <http://www.brentwoodca.gov/projects-bids-rfps>.
- 9. Brand Designations and "Or Equal" Substitutions.** Any specification designating a material, product, thing, or service by specific brand or trade name, followed by the words "or equal," is intended only to indicate quality and type of item desired, and bidders may request use of any equal material, product, thing, or service. All data substantiating the proposed substitute as an equal item must be submitted with the written request for substitution. A request for substitution must be submitted within 35 days after Notice of Potential Award unless otherwise provided in the Contract Documents. This provision does not apply to materials, products, things, or services that may lawfully be designated by a specific brand or trade name under Public Contract Code § 3400(c).
- 10. Bid Protest.** Any bid protest against another bidder must be submitted in writing and received by the City Clerk at 150 City Park Way, Brentwood, CA 94513 or sent via email at [CityClerk@brentwoodca.gov](mailto:CityClerk@brentwoodca.gov) before 5:00 p.m. no later than two Working Days following bid opening ("Bid Protest Deadline") and must comply with the following requirements:
- 10.1 General.** Only a bidder who has actually submitted a Bid Proposal is eligible to submit a bid protest against another bidder. Subcontractors are not eligible to submit bid protests. A bidder may not rely on the bid protest submitted by another bidder, but must timely pursue its own protest. For purposes of this Section 10, a "Working Day" means a day that City is open for normal business, and excludes weekends and holidays observed by City. Pursuant to Public Contract Code § 4104, inadvertent omission of a Subcontractor's DIR registration number on the Subcontractor List form is not grounds for a bid protest, provided

it is corrected within 24 hours of the bid opening or as otherwise provided under Labor Code § 1771.1(b).

- 10.2 Protest Contents.** The bid protest must contain a complete statement of the basis for the protest and must include all supporting documentation. Material submitted after the Bid Protest Deadline will not be considered. The protest must refer to the *specific* portion or portions of the Contract Documents upon which the protest is based. The protest must include the name, address, email address, and telephone number of the protesting bidder and any person submitting the protest on behalf of or as an authorized representative of the protesting bidder.
- 10.3 Copy to Protested Bidder.** Upon submission of its bid protest to City, the protesting bidder must also concurrently transmit the protest and all supporting documents to the protested bidder, and to any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest, by email or hand delivery to ensure delivery before the Bid Protest Deadline.
- 10.4 Response to Protest.** The protested bidder may submit a written response to the protest, provided the response is received by City before 5:00 p.m., within two Working Days after the Bid Protest Deadline or after actual receipt of the bid protest, whichever is sooner (the "Response Deadline"). The response must attach all supporting documentation. Material submitted after the Response Deadline will not be considered. The response must include the name, address, email address, and telephone number of the person responding on behalf of or representing the protested bidder if different from the protested bidder.
- 10.5 Copy to Protesting Bidder.** Upon submission of its response to the bid protest to the City, the protested bidder must also concurrently transmit by email or hand delivery, by or before the Response Deadline, a copy of its response and all supporting documents to the protesting bidder and to any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest.
- 10.6 Exclusive Remedy.** The procedure and time limits set forth in this Section are mandatory and are the bidder's sole and exclusive remedy in the event of a bid protest. A bidder's failure to comply with these procedures will constitute a waiver of any right to further pursue a bid protest, including filing a Government Code Claim or initiation of legal proceedings.
- 10.7 Right to Award.** City reserves the right, acting in its sole discretion, to reject any bid protest that it determines lacks merit, to award the Contract to the bidder it has determined to be the responsible bidder submitting the lowest responsive bid, and to issue a Notice to Proceed with the Work notwithstanding any pending or continuing challenge to its determination.
- 11. Reservation of Rights.** City reserves the unfettered right, acting in its sole discretion, to waive or to decline to waive any immaterial bid irregularities; to accept or reject any or all bids; to cancel or reschedule the bid; to postpone or abandon the Project entirely; or to perform all or part of the Work with its own forces. The Contract will be awarded, if at all, within 60 days after opening of bids or as otherwise specified in the Special Conditions, to the responsible bidder that submitted the lowest responsive bid. Any planned start date for the Project represents the City's expectations at the time the Notice Inviting Bids was first issued. City is not bound to issue a Notice to Proceed by or before such planned start date, and it reserves the right to issue the Notice to Proceed when the City determines, in its sole discretion, the appropriate time for commencing the Work. The City expressly disclaims responsibility for any assumptions a bidder might draw from the presence or absence of information provided by the City in any form. Each bidder is solely responsible for its costs to prepare and submit a bid, including site investigation costs.

12. **Bonds.** Within ten calendar days following City's issuance of the Notice of Potential Award to the successful bidder, the bidder must submit payment and performance bonds to City as specified in the Contract Documents using the bond forms included in the Contract Documents. All required bonds must be calculated on the maximum total Contract Price as awarded, including additive alternates, if applicable.
13. **License(s).** The successful bidder and its Subcontractor(s) must possess the California contractor's license(s) in the classification(s) required by law to perform the Work. The successful bidder must also obtain a City business license within 10 days following City's issuance of the Notice of Potential Award. Subcontractors must also obtain a City business license before performing any Work.
14. **Ineligible Subcontractor.** Any Subcontractor who is ineligible to perform work on a public works project under Labor Code §§ 1777.1 or 1777.7 is prohibited from performing work on the Project.
15. **Safety Orders.** If the Project includes construction of a pipeline, sewer, sewage disposal system, boring and jacking pits, or similar trenches or open excavations, which are five feet or deeper, each bid must include a bid item for adequate sheeting, shoring, and bracing, or equivalent method, for the protection of life or limb, which comply with safety orders as required by Labor Code § 6707.
16. **In-Use Off-Road Diesel-Fueled Fleets.** If the Project involves the use of vehicles subject to the California Air Resources Board's In-Use Off-Road Diesel-Fueled Fleets Regulation (13 CCR § 2449 et seq.) ("Off-Road Regulation"), then within ten calendar days following City's issuance of the Notice of Potential Award to the successful bidder, the bidder must submit to City valid Certificates of Reported Compliance for its fleet and its listed Subcontractors, if applicable, in accordance with the Off-Road Regulation, unless exempt under the Off-Road Regulation.
17. **Subcontractor Work Limits.** The prime contractor must perform at least 50% of the Work on the Project, calculated as a percentage of the base bid price, with its own forces, except for any Work identified as "Specialty Work" in the Contract Documents. The total bid amount for any such Specialty Work, as shown on the Bid Schedule, may be deducted from the base bid price before computing the 50% self-performance requirement. The remaining Work may be performed by qualified Subcontractor(s).
18. **Bid Schedule.** Each bidder must complete the Bid Schedule form with unit prices as indicated, and submit the completed Bid Schedule with its Bid Proposal.
  - 18.1 **Incorrect Totals.** In the event a computational error for any bid item (base bid or alternate) results in an incorrect extended total for that item, the submitted base bid or bid alternate total will be adjusted to reflect the corrected amount as the product of the estimated quantity and the unit cost. In the event of a discrepancy between the actual total of the itemized or unit prices shown on the Bid Schedule for the base bid, and the amount entered as the base bid on the Bid Proposal form, the actual total of the itemized or unit prices shown on the Bid Schedule for the base bid will be deemed the base bid price. Likewise, in the event of a discrepancy between the actual total of the itemized or unit prices shown on the Bid Schedule for any bid alternate, and the amount entered for the alternate on the Bid Proposal form, the actual total of the itemized prices shown on the Bid Schedule for that alternate will be deemed the alternate price. Nothing in this provision is intended to prevent a bidder from requesting to withdraw its bid for material error under Public Contract Code § 5100 et seq.
  - 18.2 **Estimated Quantities.** Unless identified as a "Final Pay Quantity," the quantities shown on the Bid Schedule are estimated and the actual quantities required to perform the Work may

be greater or less than the estimated amount. The Contract Price will be adjusted to reflect the actual quantities required for the Work based on the itemized or unit prices provided in the Bid Schedule, with no allowance for anticipated profit for quantities that are deleted or decreased, and no increase in the unit price, and without regard to the percentage increase or decrease of the estimated quantity and the actual quantity.

19. **Bidder's Questionnaire.** A completed, signed Bidder's Questionnaire using the form provided with the Contract Documents and including all required attachments must be submitted within 48 hours following a request by City. A bid that does not fully comply with this requirement may be rejected as nonresponsive. A bidder who submits a Bidder's Questionnaire which is subsequently determined to contain false or misleading information, or material omissions, may be disqualified as non-responsible.

END OF INSTRUCTIONS TO BIDDERS

**Bid Proposal**

Jeffrey Way Utility Extension Improvement Project  
CIP Project No. 336-31695

\_\_\_\_\_ (“Bidder”) hereby submits this Bid Proposal to the City of Brentwood (“City”) for the above-referenced project (“Project”) in response to the Notice Inviting Bids and in accordance with the Contract Documents referenced in the Notice.

1. **Base Bid.** Bidder proposes to perform and fully complete the Work for the Project as specified in the Contract Documents, within the time required for full completion of the Work, including all labor, materials, supplies, and equipment and all other direct or indirect costs including, but not limited to, taxes, insurance and all overhead, for the following price (“Base Bid”):  
\$ \_\_\_\_\_.

2. **Addenda.** Bidder agrees that it has confirmed receipt of or access to, and reviewed, all addenda issued for this bid. Bidder waives any claims it might have against the City based on its failure to receive, access, or review any addenda for any reason. Bidder specifically acknowledges receipt of the following addenda:

Addendum:	Date Received:	Addendum:	Date Received:
#01	_____	#05	_____
#02	_____	#06	_____
#03	_____	#07	_____
#04	_____	#08	_____

3. **Bidder’s Certifications and Warranties.** By signing and submitting this Bid Proposal, Bidder certifies and warrants the following:

- 3.1 **Examination of Contract Documents.** Bidder has thoroughly examined the Contract Documents and represents that, to the best of Bidder’s knowledge, there are no errors, omissions, or discrepancies in the Contract Documents, subject to the limitations of Public Contract Code § 1104.
- 3.2 **Examination of Worksite.** Bidder has had the opportunity to examine the Worksite and local conditions at the Project location.
- 3.3 **Bidder Responsibility.** Bidder is a responsible bidder, with the necessary ability, capacity, experience, skill, qualifications, workforce, equipment, and resources to perform or cause the Work to be performed in accordance with the Contract Documents and within the Contract Time.
- 3.4 **Responsibility for Bid.** Bidder has carefully reviewed this Bid Proposal and is solely responsible for any errors or omissions contained in its completed bid. All statements and information provided in this Bid Proposal and enclosures are true and correct to the best of Bidder’s knowledge.
- 3.5 **Nondiscrimination.** In preparing this bid, the Bidder has not engaged in discrimination against any prospective or present employee or Subcontractor on grounds of race, color, ancestry, national origin, ethnicity, religion, sex, sexual orientation, age, disability, or marital status.

**3.6 Iran Contracting Act.** If the Contract Price exceeds \$1,000,000, Bidder is not identified on a list created under the Iran Contracting Act, Public Contract Code § 2200 et seq. (the "Act"), as a person engaging in investment activities in Iran, as defined in the Act, or is otherwise expressly exempt under the Act.

**4. Award of Contract.** By signing and submitting this Bid Proposal, Bidder agrees that, if City issues the Notice of Potential Award to Bidder, then within ten days following issuance of the Notice of Potential Award to Bidder, Bidder will do all of the following:

**4.1 Execute Contract.** Enter into the Contract with City in accordance with the terms of this Bid Proposal, by signing and submitting to City the Contract prepared by City using the form included with the Contract Documents;

**4.2 Submit Required Bonds.** Submit to City a payment bond and a performance bond, each for 100% of the Contract Price, using the bond forms provided and in accordance with the requirements of the Contract Documents;

**4.3 Insurance Requirements.** Submit to City the insurance certificate(s) and endorsement(s) as required by the Contract Documents; and

**4.4 Certificates of Reported Compliance.** Submit to City valid Certificates of Reported Compliance for its fleet and its listed Subcontractors, if applicable, if the Project involves the use of vehicles subject to the Off-Road Regulation. (See Section 16 of the Instructions to Bidders.)

**4.5 Local Purchase and Labor Information (If Required).** Submit to City information regarding expected local purchases and local labor for the Project, if required by the Instructions to Bidders, using the form provided with the Notice of Potential Award.

**5. Bid Security.** As a guarantee that, if awarded the Contract, Bidder will perform its obligations under Section 4 above, Bidder is enclosing bid security in the amount of ten percent of its maximum bid amount in one of the following forms (check one):

\_\_\_\_\_ A cashier's check or certified check payable to City and issued by  
\_\_\_\_\_ [Bank name] in the amount of  
\$ \_\_\_\_\_.

\_\_\_\_\_ A bid bond, using the Bid Bond form included with the Contract Documents, payable to City and executed by a surety licensed to do business in the State of California.

[Signatures are on the following page]

This Bid Proposal is hereby submitted on \_\_\_\_\_, 20\_\_.

s/ \_\_\_\_\_

\_\_\_\_\_  
Name and Title

s/ \_\_\_\_\_  
[See Section 3 of Instructions to Bidders]

\_\_\_\_\_  
Name and Title

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
License #, Expiration Date, and Classification

\_\_\_\_\_  
Address

\_\_\_\_\_  
DIR Registration #

\_\_\_\_\_  
City, State, Zip

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Contact Name

\_\_\_\_\_  
Contact Email

END OF BID PROPOSAL

### Bid Schedule

This Bid Schedule must be completed in ink and included with the sealed Bid Proposal. Pricing must be provided for each Bid Item as indicated. Items marked "(SW)" are Specialty Work that must be performed by a qualified Subcontractor. The lump sum or unit cost for each item must be inclusive of all costs, whether direct or indirect, including profit and overhead. The sum of all amounts entered in the "Extended Total Amount" column must be identical to the Base Bid price entered in Section 1 of the Bid Proposal form.

AL = Allowance  
LF = Linear Foot

CF = Cubic Feet  
LS = Lump Sum

CY = Cubic Yard  
SF = Square Feet

EA = Each      LB = Pounds  
TON = Ton (2000 lbs)

BID ITEM NO.	ITEM DESCRIPTION	EST. QTY.	UNIT	UNIT COST	EXTENDED TOTAL AMOUNT
1	Construction Site Management	1	LS	\$	\$
2	Spill Prevention & Control	1	LS	\$	\$
3	Construction Traffic Control	1	LS	\$	\$
4	Demolition	3,100	SF	\$	\$
5	Clearing and Grubbing	1	LS	\$	\$
6	Earthwork	650	CY	\$	\$
7	Geogrid	3,100	SF	\$	\$
8	Erosion Control	1	LS	\$	\$
9	SWPPP Measures	1	LS	\$	\$
10	Sawcut and Grind Existing AC Pavement	100	LF	\$	\$
11	Aggregate Base (Class 2)	407	TON	\$	\$
12	Hot Mix Asphalt Type A	103	TON	\$	\$
13	Fog Seal	3,100	SF	\$	\$
14	Type A Concrete Curb and Gutter and Sub Drains	100	LF	\$	\$
15	Striping and Pavement Markers	100	LF	\$	\$
16	30-inch Steel Casing for Empire Avenue (Jack and Bore)	180	LF	\$	\$

BID ITEM NO.	ITEM DESCRIPTION	EST. QTY.	UNIT	UNIT COST	EXTENDED TOTAL AMOUNT
17	30-inch Steel Casing for Empire Avenue and State Route 4 (Open Trench)	110	LF	\$	\$
18	24-inch Steel Casings for Empire Avenue and State Route 4	200	LF	\$	\$
19	Sanitary Sewer Manhole	6	EA	\$	\$
20	Sanitary Sewer Pipe (8-inch)	100	LF	\$	\$
21	Sanitary Sewer Pipe (10-inch)	940	LF	\$	\$
22	Sanitary Sewer Pipe (12-inch)	70	LF	\$	\$
23	Potable Water Pipe (12-inch)	1,090	LF	\$	\$
24	Potable Valve	8	EA	\$	\$
25	Potable Blow Off Valve	3	EA	\$	\$
26	Non-Potable Water Pipe (8-inch)	1,090	LF	\$	\$
27	Non-Potable Gate Valve	6	EA	\$	\$
28	Non-Potable Blow Off Valve	4	EA	\$	\$
29	Galvanic Cathodic Protection	1	LS	\$	\$
30	Impressed Current Cathodic Protection	1	LS	\$	\$

\* Final Pay Quantity

TOTAL BASE BID: Items 1 through 30 inclusive: \$ \_\_\_\_\_

*Note: The amount entered as the "Total Base Bid" should be identical to the Base Bid amount entered in Section 1 of the Bid Proposal form.*

BIDDER NAME: \_\_\_\_\_

END OF BID SCHEDULE



**Noncollusion Declaration**

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

The undersigned declares:

I am the \_\_\_\_\_ [title] of \_\_\_\_\_  
[business name], the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

This declaration is intended to comply with California Public Contract Code § 7106 and Title 23 U.S.C § 112.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on \_\_\_\_\_ [date], at \_\_\_\_\_ [city], \_\_\_\_\_ [state].

s/ \_\_\_\_\_

\_\_\_\_\_  
Name [print]

END OF NONCOLLUSION DECLARATION

## Bid Bond

\_\_\_\_\_ (“Bidder”) has submitted a bid, dated \_\_\_\_\_, 20\_\_\_\_ (“Bid”), to the City of Brentwood (“City”) for work on the Jeffrey Way Utility Extension Improvement Project, CIP Project No. 336-31695 (“Project”). Under this duly executed bid bond (“Bid Bond”), Bidder as Principal and \_\_\_\_\_, its surety (“Surety”), are bound to City as obligee in the penal sum of ten percent of the maximum amount of the Bid (the “Bond Sum”). Bidder and Surety bind themselves and their respective heirs, executors, administrators, successors and assigns, jointly and severally, as follows:

1. **General.** If Bidder is awarded the Contract for the Project, Bidder will enter into the Contract with City in accordance with the terms of the Bid.
2. **Submittals.** Within ten days following issuance of the Notice of Potential Award to Bidder, Bidder must submit to City the following:
  - 2.1 **Contract.** The executed Contract, using the form provided by City in the Project contract documents (“Contract Documents”);
  - 2.2 **Payment Bond.** A payment bond for 100% of the maximum Contract Price, executed by a surety licensed to do business in the State of California using the Payment Bond form included with the Contract Documents;
  - 2.3 **Performance Bond.** A performance bond for 100% of the maximum Contract Price, executed by a surety licensed to do business in the State of California using the Performance Bond form included with the Contract Documents;
  - 2.4 **Insurance.** The insurance certificate(s) and endorsement(s) required by the Contract Documents;
  - 2.5 **Certificates of Reported Compliance.** Valid Certificates of Reported Compliance for its fleet and its listed Subcontractors, if applicable, in accordance with the In-Use Off-Road Diesel-Fueled Fleets Regulation (13 CCR § 2449 et seq.) (“Off-Road Regulation”), if the Project involves the use of vehicles subject to the Off-Road Regulation; and any other documents required by the Instructions to Bidders or Notice of Potential Award, including the submittal for local purchase and local labor information if required by the Instructions to Bidders, using the form provided with the Notice of Potential Award.
3. **Enforcement.** If Bidder fails to execute the Contract or to submit the bonds, insurance certificates, and valid Certificates of Reported Compliance as required by the Contract Documents, Surety guarantees that Bidder forfeits the Bond Sum to City. Any notice to Surety may be given in the manner specified in the Contract and delivered or transmitted to Surety as follows:

Attn: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

4. **Duration and Waiver.** If Bidder fulfills its obligations under Section 2, above, then this obligation will be null and void; otherwise, it will remain in full force and effect for 60 days following the bid opening or until this Bid Bond is returned to Bidder, whichever occurs first. Surety waives the provisions of Civil Code §§ 2819 and 2845.

This Bid Bond is entered into and effective on \_\_\_\_\_, 20\_\_\_\_\_.

**SURETY:**

\_\_\_\_\_  
Business Name

s/ \_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name, Title

(Attach Acknowledgment with Notary Seal and Power of Attorney)

**BIDDER:**

\_\_\_\_\_  
Business Name

s/ \_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name, Title

END OF BID BOND

**Bidder's Questionnaire**

**JEFFREY WAY UTILITY EXTENSION IMPROVEMENT PROJECT  
CIP PROJECT NO. 336-31695**

Within 48 hours following a request by City, a bidder must submit to City a completed, signed Bidder's Questionnaire using this form and all required attachments, including clearly labeled additional sheets as needed. City may request the Questionnaire from one or more of the apparent low bidders following the bid opening, and may use the completed Questionnaire as part of its investigation to evaluate a bidder's qualifications for this Project. The Questionnaire must be filled out completely, accurately, and legibly. Any errors, omissions, or misrepresentations in completion of the Questionnaire may be grounds for rejection of the bid or termination of a Contract awarded pursuant to the bid.

**Part A: General Information**

Bidder Business Name: \_\_\_\_\_ ("Bidder")

Check One:  Corporation (State of incorporation: \_\_\_\_\_)  
 Partnership  
 Sole Proprietorship  
 Joint Venture of: \_\_\_\_\_  
 Other: \_\_\_\_\_

Main Office Address and Phone: \_\_\_\_\_  
\_\_\_\_\_

Local Office Address and Phone: \_\_\_\_\_  
\_\_\_\_\_

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

Owner of Business: \_\_\_\_\_

Contact Name and Title: \_\_\_\_\_

Contact Phone and Email: \_\_\_\_\_

Bidder's California Contractor's License Number(s): \_\_\_\_\_

Bidder's DIR Registration Number: \_\_\_\_\_

**Part B: Bidder Experience**

1. How many years has Bidder been in business under its present business name? \_\_\_\_ years
2. Has Bidder completed projects similar in type and size to this Project as a general contractor?  
\_\_\_\_ Yes      \_\_\_\_ No

3. Has Bidder ever been disqualified from a bid on grounds that it is not responsible, or otherwise disqualified or debarred from bidding under state or federal law?  
 \_\_\_\_\_ Yes      \_\_\_\_\_ No

If yes, provide additional information on a separate sheet regarding the disqualification or debarment, including the name and address of the agency or owner of the project, the type and size of the project, the reasons that Bidder was disqualified or debarred, and the month and year in which the disqualification or debarment occurred.

4. Has Bidder ever been terminated for cause, alleged default, or legal violation from a construction project, either as a general contractor or as a subcontractor?  
 \_\_\_\_\_ Yes      \_\_\_\_\_ No

If yes, provide additional information on a separate sheet regarding the termination, including the name and address of the agency or owner of the subject project, the type and size of the project, whether Bidder was under contract as a general contractor or a subcontractor, the reasons that Bidder was terminated, and the month and year in which the termination occurred.

5. Provide information about Bidder's past projects performed as general contractor as follows:

- 5.1 Six most recently completed public works projects within the last three years;
- 5.2 Three largest completed projects within the last three years; and
- 5.3 Any project which is similar to this Project including scope and character of the work.

6. Use separate sheets to provide all of the following information for each project identified in response to the above three categories:

- 6.1 Project name, location, and description;
- 6.2 Owner (name, address, email, and phone number);
- 6.3 Prime contractor, if applicable (name, address, email, and phone number);
- 6.4 Architect or engineer (name, email, and phone number);
- 6.5 Project and/or construction manager (name, email, and phone number);
- 6.6 Scope of work performed (as general contractor or as subcontractor);
- 6.7 Initial contract price and final contract price (including change orders);
- 6.8 Original scheduled completion date and actual date of completion;
- 6.9 Time extensions granted (number of days);
- 6.10 Number and amount of stop notices or mechanic's liens filed;
- 6.11 Amount of any liquidated damages assessed against Bidder; and
- 6.12 Nature and resolution of any project-related claim, lawsuit, mediation, or arbitration involving Bidder.

**Part C: Safety**

1. Provide Bidder's Experience Modification Rate (EMR) for the last three years:

Year	EMR

2. Complete the following, based on information provided in Bidder's CalOSHA Form 300 or Form 300A, Annual Summary of Work-Related Illnesses and Injuries, from the most recent past calendar year:

- 2.1 Number of lost workday cases: \_\_\_\_\_
- 2.2 Number of medical treatment cases: \_\_\_\_\_
- 2.3 Number of deaths: \_\_\_\_\_

3. Has Bidder ever been cited, fined, or prosecuted by any local, state, or federal agency, including OSHA, CalOSHA, or EPA, for violation of any law, regulation, or requirements pertaining to health and safety?

\_\_\_\_\_ Yes \_\_\_\_\_ No

If yes, provide additional information on a separate sheet regarding each such citation, fine, or prosecution, including the name and address of the agency or owner of the project, the type and size of the project, the reasons for and nature of the citation, fine, or prosecution, and the month and year in which the incident giving rise to the citation, fine, or prosecution occurred.

4. Name, title, and email for person responsible for Bidder's safety program:

\_\_\_\_\_  
Name Title Email

**Part D: Verification**

In signing this document, I, the undersigned, declare that I am duly authorized to sign and submit this Bidder's Questionnaire on behalf of the named Bidder, and that all responses and information set forth in this Bidder's Questionnaire and accompanying attachments are, to the best of my knowledge, true, accurate and complete as of the date of submission. **I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.**

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

By: \_\_\_\_\_  
Name and Title

END OF BIDDER'S QUESTIONNAIRE

## Contract

This public works contract ("Contract") is entered into by and between the City of Brentwood ("City") and \_\_\_\_\_ ("Contractor"), for work on the Jeffrey Way Utility Extension Improvement Project, CIP Project No. 336-31695 ("Project").

The parties agree as follows:

1. **Award of Contract.** In response to the Notice Inviting Bids, Contractor has submitted a Bid Proposal to perform the Work to construct the Project. On \_\_\_\_\_, 20\_\_\_\_, City authorized award of this Contract to Contractor for the amount set forth in Section 4, below. City has elected to include the following Project alternate(s) in the Contract: No alternates.
2. **Contract Documents.** The Contract Documents incorporated into this Contract include and are comprised of all of the documents listed below. The definitions provided in Article 1 of the General Conditions apply to all of the Contract Documents, including this Contract.
  - 2.1 Notice Inviting Bids;
  - 2.2 Instructions to Bidders;
  - 2.3 Addenda, if any;
  - 2.4 Bid Proposal and attachments thereto;
  - 2.5 Contract;
  - 2.6 Payment and Performance Bonds;
  - 2.7 General Conditions;
  - 2.8 Special Conditions;
  - 2.9 Project Plans and Specifications;
  - 2.10 Change Orders, if any;
  - 2.11 Notice of Potential Award;
  - 2.12 Notice to Proceed; and
  - 2.13 The following: No other documents
3. **Contractor's Obligations.** Contractor will perform all of the Work required for the Project, as specified in the Contract Documents. Contractor must provide, furnish, and supply all things necessary and incidental for the timely performance and completion of the Work, including all necessary labor, materials, supplies, tools, equipment, transportation, onsite facilities, and utilities, unless otherwise specified in the Contract Documents. Contractor must use its best efforts to diligently prosecute and complete the Work in a professional and expeditious manner and to meet or exceed the performance standards required by the Contract Documents.
4. **Payment.** As full and complete compensation for Contractor's timely performance and completion of the Work in strict accordance with the terms and conditions of the Contract Documents, City will pay Contractor \$ \_\_\_\_\_ ("Contract Price") for all of Contractor's direct and indirect costs to perform the Work, including all labor, materials, supplies, equipment, taxes, insurance, bonds and all overhead costs, in accordance with the payment provisions in the General Conditions.
5. **Time for Completion.** Contractor will fully complete the Work for the Project, meeting all requirements for Final Completion, within 60 calendar days from the start date set forth in the Notice to Proceed ("Contract Time"). By signing below, Contractor expressly waives any claim for delayed early completion.

- 6. Liquidated Damages.** As further specified in Section 5.4 of the General Conditions, if Contractor fails to complete the Work within the Contract Time, City will assess liquidated damages in the amount of \$2,500 per day for each day of unexcused delay in achieving Final Completion, and such liquidated damages may be deducted from City's payments due or to become due to Contractor under this Contract.
- 7. Labor Code Compliance.**
- 7.1 General.** This Contract is subject to all applicable requirements of Chapter 1 of Part 7 of Division 2 of the Labor Code, including requirements pertaining to wages, working hours and workers' compensation insurance, as further specified in Article 9 of the General Conditions.
- 7.2 Prevailing Wages.** This Project is subject to the prevailing wage requirements applicable to the locality in which the Work is to be performed for each craft, classification or type of worker needed to perform the Work, including employer payments for health and welfare, pension, vacation, apprenticeship and similar purposes. Copies of these prevailing rates are available online at <http://www.dir.ca.gov/DLSR>.
- 7.3 DIR Registration.** City may not enter into the Contract with a bidder without proof that the bidder and its Subcontractors are registered with the California Department of Industrial Relations to perform public work pursuant to Labor Code § 1725.5, subject to limited legal exceptions.
- 8. Workers' Compensation Certification.** Pursuant to Labor Code § 1861, by signing this Contract, Contractor certifies as follows: "I am aware of the provisions of Labor Code § 3700 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 on this Contract."
- 9. Conflicts of Interest.** Contractor, its employees, Subcontractors, and agents may not have, maintain, or acquire a conflict of interest in relation to this Contract in violation of any City ordinance or requirement, or in violation of any California law, including Government Code § 1090 et seq., or the Political Reform Act, as set forth in Government Code § 81000 et seq. and its accompanying regulations. Any violation of this Section constitutes a material breach of the Contract.
- 10. Independent Contractor.** Contractor is an independent contractor under this Contract and will have control of the Work and the means and methods by which it is performed. Contractor and its Subcontractors are not employees of City and are not entitled to participate in any health, retirement, or any other employee benefits from City.
- 11. Notice.** Any notice, billing, or payment required by or pursuant to the Contract Documents must be made in writing, signed, dated, and sent to the other party by personal delivery, U.S. Mail, a reliable overnight delivery service, or by email as a PDF file. Notice is deemed effective upon delivery, except that service by U.S. Mail is deemed effective on the second working day after deposit for delivery. Notice for each party must be given as follows:

**City:**

City of Brentwood  
Engineering Department  
150 City Park Way  
Brentwood, CA 94513  
925-516-5420  
Attn: Vatsal Patel, Engineering Manager  
vpatel@brentwoodca.gov

**Contractor:**

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Attn: \_\_\_\_\_  
Email: \_\_\_\_\_  
Copy to: \_\_\_\_\_

**12. General Provisions.**

- 12.1 Assignment and Successors.** Contractor may not assign its rights or obligations under this Contract, in part or in whole, without City’s written consent. This Contract is binding on Contractor’s and City’s lawful heirs, successors and permitted assigns.
- 12.2 Third Party Beneficiaries.** There are no intended third party beneficiaries to this Contract.
- 12.3 Governing Law and Venue.** This Contract will be governed by California law and venue will be in the Contra Costa County Superior Court, and no other place. Contractor waives any right it may have pursuant to Code of Civil Procedure § 394, to file a motion to transfer any action arising from or relating to this Contract to a venue outside of Contra Costa County, California.
- 12.4 Amendment.** No amendment or modification of this Contract will be binding unless it is in a writing duly authorized and signed by the parties to this Contract.
- 12.5 Integration.** This Contract and the Contract Documents incorporated herein, including authorized amendments or Change Orders thereto, constitute the final, complete, and exclusive terms of the agreement between City and Contractor.
- 12.6 Severability.** If any provision of the Contract Documents is determined to be illegal, invalid, or unenforceable, in whole or in part, the remaining provisions of the Contract Documents will remain in full force and effect.
- 12.7 Iran Contracting Act.** If the Contract Price exceeds \$1,000,000, Contractor certifies, by signing below, that it is not identified on a list created under the Iran Contracting Act, Public Contract Code § 2200 et seq. (the “Act”), as a person engaging in investment activities in Iran, as defined in the Act, or is otherwise expressly exempt under the Act.

**12.8 Authorization.** Each individual signing below warrants that he or she is authorized to do so by the party that he or she represents, and that this Contract is legally binding on that party. If Contractor is a corporation, signatures from two officers of the corporation are required pursuant to California Corporations Code § 313.

**12.9 Digital/Electronic Signatures.** Using a City-approved method, this Contract may be executed through the use of digital or electronic signatures in accordance with Government Code Section 16.5. The presence of an electronic signature on this Contract will be construed as the Parties' consent to do business electronically.

*[Signatures are on the following page.]*

REFERENCE ONLY

The parties agree to this Contract as witnessed by the signatures below:

**CITY:**

Approved as to form:

s/ \_\_\_\_\_

s/ \_\_\_\_\_

Darin Gale, Interim City Manager

Katherine Wisinski, City Attorney

\_\_\_\_\_  
Name, Title

\_\_\_\_\_  
Name, Title

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

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

Attest:

s/ \_\_\_\_\_

Amanda McVey, City Clerk

\_\_\_\_\_  
Name, Title

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

**CONTRACTOR:** \_\_\_\_\_  
Business Name

s/ \_\_\_\_\_

Seal:

\_\_\_\_\_  
Name, Title

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

Second Signature (See Section 12.8):

s/ \_\_\_\_\_

\_\_\_\_\_  
Name, Title

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

\_\_\_\_\_  
Contractor's California License Number(s) and Expiration Date(s)

END OF CONTRACT

## Payment Bond

The City of Brentwood ("City") and \_\_\_\_\_ ("Contractor") have entered into a contract for work on the Jeffrey Way Utility Extension Improvement Project, CIP Project No. 336-31695 ("Project"). The Contract is incorporated by reference into this Payment Bond ("Bond").

1. **General.** Under this Bond, Contractor as principal and \_\_\_\_\_, its surety ("Surety"), are bound to City as obligee in an amount not less than \$ \_\_\_\_\_, under California Civil Code § 9550 et seq., to ensure payment to authorized claimants. This Bond is binding on the respective successors, assigns, owners, heirs, or executors of Surety and Contractor.
2. **Surety's Obligation.** If Contractor or any of its Subcontractors fails to pay a person authorized in California Civil Code § 9100 to assert a claim against a payment bond, any amounts due under the Unemployment Insurance Code with respect to work or labor performed under the Contract, or any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of Contractor and its Subcontractors under California Unemployment Insurance Code § 13020 with respect to the work and labor, then Surety will pay the obligation.
3. **Beneficiaries.** This Bond inures to the benefit of any of the persons named in California Civil Code § 9100, so as to give a right of action to those persons or their assigns in any suit brought upon this Bond. Contractor must promptly provide a copy of this Bond upon request by any person with legal rights under this Bond.
4. **Duration.** If Contractor promptly makes payment of all sums for all labor, materials, and equipment furnished for use in the performance of the Work required by the Contract, in conformance with the time requirements set forth in the Contract and as required by California law, Surety's obligations under this Bond will be null and void. Otherwise, Surety's obligations will remain in full force and effect.
5. **Waivers.** Surety waives any requirement to be notified of alterations to the Contract or extensions of time for performance of the Work under the Contract. Surety waives the provisions of Civil Code §§ 2819 and 2845. City waives the requirement of a new bond for any supplemental contract under Civil Code § 9550. Any notice to Surety may be given in the manner specified in the Contract and sent to Surety as follows:  
  
Attn: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_
6. **Law and Venue.** This Bond will be governed by California law, and venue for any dispute pursuant to this Bond will be in the Contra Costa County Superior Court, and no other place. Surety will be responsible for City's attorneys' fees and costs in any action to enforce the provisions of this Bond.

*[Signatures are on the following page.]*

7. **Effective Date; Execution.** This Bond is entered into and is effective on \_\_\_\_\_,  
20\_\_.

**SURETY:**

\_\_\_\_\_  
Business Name

s/ \_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name, Title

(Attach Acknowledgment with Notary Seal and Power of Attorney)

**CONTRACTOR:**

\_\_\_\_\_  
Business Name

s/ \_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name, Title

**APPROVED BY CITY:**

City of Brentwood

s/ \_\_\_\_\_

\_\_\_\_\_  
Date

Darin Gale, Interim City Manager

\_\_\_\_\_  
Name, Title

END OF PAYMENT BOND

## Performance Bond

The City of Brentwood ("City") and \_\_\_\_\_ ("Contractor") have entered into a contract for work on the Jeffrey Way Utility Extension Improvement Project, CIP Project No. 336-31695 ("Project"). The Contract is incorporated by reference into this Performance Bond ("Bond").

1. **General.** Under this Bond, Contractor as principal and \_\_\_\_\_, its surety ("Surety"), are bound to City as obligee for an amount not less than \$ \_\_\_\_\_ to ensure Contractor's faithful performance of its obligations under the Contract. This Bond is binding on the respective successors, assigns, owners, heirs, or executors of Surety and Contractor.
2. **Surety's Obligations.** Surety's obligations are co-extensive with Contractor's obligations under the Contract. If Contractor fully performs its obligations under the Contract, including its warranty obligations under the Contract, Surety's obligations under this Bond will become null and void. Otherwise, Surety's obligations will remain in full force and effect.
3. **Waiver.** Surety waives any requirement to be notified of and further consents to any alterations to the Contract made under the applicable provisions of the Contract Documents, including changes to the scope of Work or extensions of time for performance of Work under the Contract. Surety waives the provisions of Civil Code §§ 2819 and 2845.
4. **Application of Contract Balance.** Upon making a demand on this Bond for completion of the Work prior to acceptance of the Project, City will make the Contract Balance available to Surety for completion of the Work under the Contract. For purposes of this provision, the Contract Balance is defined as the total amount payable by City to Contractor as the Contract Price minus amounts already paid to Contractor, and minus any liquidated damages, credits, or backcharges to which City is entitled under the terms of the Contract.
5. **Contractor Default.** Upon written notification from City of Contractor's termination for default under Article 13 of the Contract General Conditions, time being of the essence, Surety must act within the time specified in Article 13 to remedy the default through one of the following courses of action:
  - 5.1 Arrange for completion of the Work under the Contract by Contractor, with City's consent, but only if Contractor is in default solely due to its financial inability to complete the Work;
  - 5.2 Arrange for completion of the Work under the Contract by a qualified contractor acceptable to City, and secured by performance and payment bonds issued by an admitted surety as required by the Contract Documents, at Surety's expense; or
  - 5.3 Waive its right to complete the Work under the Contract and reimburse City the amount of City's costs to have the remaining Work completed.
6. **Surety Default.** If Surety defaults on its obligations under the Bond, City will be entitled to recover all costs it incurs due to Surety's default, including legal, design professional, or delay costs.
7. **Notice.** Any notice to Surety may be given in the manner specified in the Contract and sent to Surety as follows:

Attn: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

**8. Law and Venue.** This Bond will be governed by California law, and venue for any dispute pursuant to this Bond will be in the Contra Costa County Superior Court, and no other place. Surety will be responsible for City's attorneys' fees and costs in any action to enforce the provisions of this Bond.

**9. Effective Date; Execution.** This Bond is entered into and effective on \_\_\_\_\_, 20\_\_\_\_.

**SURETY:**

\_\_\_\_\_  
Business Name

s/ \_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name, Title

(Attach Acknowledgment with Notary Seal and Power of Attorney)

**CONTRACTOR:**

\_\_\_\_\_  
Business Name

s/ \_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name, Title

**APPROVED BY CITY:**

City of Brentwood

s/ \_\_\_\_\_

\_\_\_\_\_  
Date

Darin Gale, Interim City Manager

\_\_\_\_\_  
Name, Title

END OF PERFORMANCE BOND

## General Conditions

### Article 1 - Definitions

**Definitions.** The following definitions apply to all of the Contract Documents unless otherwise indicated, e.g., additional definitions that apply solely to the Specifications or other technical documents. Defined terms and titles of documents are capitalized in the Contract Documents, with the exception of the following (in any tense or form): “day,” “furnish,” “including,” “install,” “work day,” or “working day.”

**Allowance** means a specific amount that must be included in the Bid Proposal for a specified purpose.

**Article**, as used in these General Conditions, means a numbered Article of the General Conditions, unless otherwise indicated by the context.

**Change Order** means a written document duly approved and executed by City, which changes the scope of Work, the Contract Price, or the Contract Time.

**City** means the municipality which has entered into the Contract with Contractor for performance of the Work, acting through its City Council, officers, employees, City Engineer, and any other authorized representatives.

**City Engineer** means the City Engineer for City and his or her authorized delegee(s).

**Claim** means a separate demand by Contractor for a change in the Contract Time or Contract Price, that has previously been submitted to City in accordance with the requirements of the Contract Documents, and which has been rejected by City, in whole or in part; a written demand by Contractor disputing a unilateral Change Order or a portion thereof; or a written demand by Contractor objecting to the amount of Final Payment.

**Contract** means the signed agreement between City and Contractor for performing the Work required for the Project, and all documents expressly incorporated therein.

**Contract Documents** means, collectively, all of the documents listed as such in Section 2 of the Contract, including the Notice Inviting Bids; the Instructions to Bidders; addenda, if any; the Bid Proposal and attachments thereto; the Contract; the Notice of Potential Award and Notice to Proceed; the payment and performance bonds; the General Conditions; the Special Conditions; the Project Plans and Specifications; any Change Orders; and any other documents which are clearly and unambiguously made part of the Contract Documents. The Contract Documents do not include documents provided “For Reference Only,” or documents that are intended solely to provide information regarding existing conditions.

**Contract Price** means the total compensation to be paid to Contractor for performance of the Work, as set forth in the Contract and as may be amended by Change Order or adjusted for an Allowance. The Contract Price is not subject to adjustment due to inflation or due to the increased cost of labor, material, supplies, or equipment following submission of the Bid Proposal.

**Contract Time** means the time specified for complete performance of the Work, as set forth in the Contract and as may be amended by Change Order.

**Contractor** means the individual, partnership, corporation, or joint venture that has signed the Contract with City to perform the Work.

**Day** means a calendar day unless otherwise specified.

**Design Professional** means the licensed individual(s) or firm(s) retained by City to provide architectural, engineering, or other design professional services for the Project. If no Design Professional has been retained for this Project, any reference to Design Professional is deemed to refer to the Engineer.

**DIR** means the California Department of Industrial Relations.

**Drawings** has the same meaning as Plans.

**Engineer** means the City Engineer for the City of Brentwood and their authorized delegees.

**Excusable Delay** is defined in Section 5.3(B), Excusable Delay.

**Extra Work** means new or unforeseen work added to the Project, as determined by the Engineer in his or her sole discretion, including Work that was not part of or incidental to the scope of the Work when the Contractor's bid was submitted; Work that is substantially different from the Work as described in the Contract Documents at bid time; or Work that results from a substantially differing and unforeseeable condition.

**Final Completion** means Contractor has fully completed all of the Work required by the Contract Documents to the City's satisfaction, including all punch list items and any required commissioning or training, and has provided the City with all required submittals, including the instructions and manuals, product warranties, and as-built drawings.

**Final Payment** means payment to Contractor of the unpaid Contract Price, including release of undisputed retention, less amounts withheld or deducted pursuant to the Contract Documents.

**Furnish** means to purchase and deliver for the Project.

**Government Code Claim** means a claim submitted pursuant to California Government Code § 900 et seq.

**Hazardous Materials** means any substance or material identified now or in the future as hazardous under any Laws, or any other substance or material that may be considered hazardous or otherwise subject to Laws governing handling, disposal, or cleanup.

**Including**, whether or not capitalized, means "including, but not limited to," unless the context clearly requires otherwise.

**Inspector** means the individual(s) or firm(s) retained or employed by City to inspect the workmanship, materials, and manner of construction of the Project and its components to ensure compliance with the Contract Documents and all Laws.

**Install** means to fix in place for materials, and to fix in place and connect for equipment.

**Laws** means all applicable local, state, and federal laws, regulations, rules, codes, ordinances, permits, orders, and the like enacted or imposed by or under the auspices of any governmental entity with jurisdiction over any of the Work or any performance of the Work, including health and safety requirements.

**Non-Excusable Delay** is defined in Section 5.3(D), Non-Excusable Delay.

**Plans** means the City-provided plans, drawings, details, or graphical depictions of the Project requirements, but does not include Shop Drawings.

**Project** means the public works project referenced in the Contract, as modified by any Project alternates elected by City, if any.

**Project Manager** means the individual designated by City to oversee and manage the Project on City's behalf and may include his or her authorized delegee(s) when the Project Manager is unavailable. If no Project Manager has been designated for this Project, any reference to Project Manager is deemed to refer to the Engineer.

**Recoverable Costs** is defined in Section 5.3(F), Recoverable Costs.

**Request for Information** or **RFI** means Contractor's written request for information about the Contract Documents, the Work or the Project, submitted to City in the manner and format specified by City.

**Section**, when capitalized in these General Conditions, means a numbered section or subsection of the General Conditions, unless the context clearly indicates otherwise.

**Shop Drawings** means drawings, plan details or other graphical depictions prepared by or on behalf of Contractor, and subject to City acceptance, which are intended to provide details for fabrication, installation, and the like, of items required by or shown in the Plans or Specifications.

**Specialty Work** means Work that must be performed by a specialized Subcontractor with the specified license or other special certification, and that the Contractor is not qualified to self-perform.

**Specifications** means the technical, text specifications describing the Project requirements, which are prepared for and incorporated into the Contract by or on behalf of City, and does not include the Contract, General Conditions or Special Conditions.

**Subcontractor** means an individual, partnership, corporation, or joint venture retained by Contractor directly or indirectly through a subcontract to perform a specific portion of the Work. The term Subcontractor applies to subcontractors of all tiers, unless otherwise indicated by the context. A third party such as a utility performing related work on the Project is not a Subcontractor, even if Contractor must coordinate its Work with the third party.

**Technical Specifications** has the same meaning as Specifications.

**Work** means all of the construction and services necessary for or incidental to completing the Project in conformance with the requirements of the Contract Documents.

**Work Day** or **Working Day**, whether or not capitalized, means a weekday when the City is open for business, and does not include holidays observed by the City.

**Worksite** means the place or places where the Work is performed, which includes, but may extend beyond the Project site, including separate locations for staging, storage, or fabrication.

## Article 2 - Roles and Responsibilities

### 2.1 City.

(A) **City Council.** The City Council has final authority in all matters affecting the Project, except to the extent it has delegated authority to the Engineer.

(B) **Engineer.** The Engineer, acting within the authority conferred by the City Council, is responsible for administration of the Project on behalf of City, including authority to provide directions to the Design Professional and to Contractor to ensure proper and timely completion of the Project. The Engineer's decisions are final and conclusive within the scope of his or her authority, including interpretation of the Contract Documents.

(C) **Project Manager.** The Project Manager assigned to the Project will be the primary point of contact for the Contractor and will serve as City's representative for daily administration of the Project on behalf of City. Unless otherwise specified, all of Contractor's communications to City (in any form) will go to or through the Project Manager. City reserves the right to reassign the Project Manager role at any time or to delegate duties to additional City representatives, without prior notice to or consent of Contractor.

(D) **Design Professional.** The Design Professional is responsible for the overall design of the Project and, to the extent authorized by City, may act on City's behalf to ensure performance of the Work in compliance with the Plans and Specifications, including any design changes authorized by Change Order. The Design Professional's duties may include review of Contractor's submittals, visits to any Worksite, inspecting the Work, evaluating test and inspection results, and participation in Project-related meetings, including any pre-construction conference, weekly meetings, and coordination meetings. The Design Professional's interpretation of the Plans or Specifications is final and conclusive.

### 2.2 Contractor.

(A) **General.** Contractor must provide all labor, materials, supplies, equipment, services, and incidentals necessary to perform and timely complete the Work in strict accordance with the Contract Documents, and in an economical and efficient manner in the best interests of City, and with minimal inconvenience to the public.

(B) **Responsibility for the Work and Risk of Loss.** Contractor is responsible for supervising and directing all aspects of the Work to facilitate the efficient and timely completion of the Work. Contractor is solely responsible for and required to exercise full control over the Work, including the construction means, methods, techniques, sequences, procedures, safety precautions and programs, and coordination of all portions of the Work with that of all other contractors and Subcontractors, except to the extent that the Contract Documents provide other specific instructions. Contractor's responsibilities extend to any plan, method or sequence suggested, but not required by City or specified in the Contract Documents. From the date of commencement of the Work until either the date on which City formally accepts the Project or the effective date of termination of the Contract, whichever is later, Contractor bears all risks of injury or damage to the Work and the materials and equipment delivered to any Worksite, by any cause including fire, earthquake, wind, weather, vandalism, or theft, subject to the limitations of Laws, including Public Contract Code § 7105.

(C) **Project Administration.** Contractor must provide sufficient and competent administration, staff, and skilled workforce necessary to perform and timely complete the Work in accordance with the Contract Documents. Before starting the Work, Contractor must designate in writing and provide complete contact information, including telephone numbers and email address, for the officer or employee in Contractor's organization who is to serve as Contractor's primary representative for the Project, and who has authority to act on Contractor's behalf. A Subcontractor may not serve as Contractor's primary representative.

(D) **On-Site Superintendent.** Contractor must, at all times during performance of the Work, provide a qualified and competent full-time superintendent acceptable to City, and assistants as necessary, who must be physically present at the Project site while any aspect of the Work is being performed. The superintendent must have full authority to act and communicate on behalf of Contractor, and Contractor will be bound by the superintendent's communications to City. City's approval of the superintendent is required before the Work commences. If City is not satisfied with the superintendent's performance, City may request a qualified replacement of the superintendent. Failure to comply may result in temporary suspension of the Work, at Contractor's sole expense and with no extension of Contract Time, until an approved superintendent is physically present to supervise the Work. Contractor must provide written notice to City, as soon as practicable, before replacing the superintendent.

(E) **Standards.** Contractor must, at all times, ensure that the Work is performed in an efficient, skillful manner following best practices and in full compliance with the Contract Documents, Laws, and applicable manufacturer's recommendations. Contractor has a material and ongoing obligation to provide true and complete information, to the best of its knowledge, with respect to all records, documents, or communications pertaining to the Project, including oral or written reports, statements, certifications, Change Order requests, or Claims.

(F) **Meetings.** Contractor, its project manager, superintendent and any primary Subcontractors requested by City, must attend a pre-construction conference, if requested by City, as well as weekly Project progress meetings scheduled with City. If applicable, Contractor may also be required to participate in coordination meetings with other parties relating to other work being performed on or near the Project site or in relation to the Project, including work or activities performed by City, other contractors, or other utility owners.

(G) **Construction Records.** Contractor will maintain up-to-date, thorough, legible, and dated daily job reports, which document all significant activity on the Project for each day that Work is performed on the Project. The daily report for each day must include the number of workers at the Project site; primary Work activities; major deliveries; problems encountered, including injuries, if any; weather and site conditions; and delays, if any. Contractor will take date and time-stamped photographs to document general progress of the Project, including site conditions prior to construction activities, before and after photographs at offset trench laterals, existing improvements and utilities, damage and restoration. Contractor will maintain copies of all subcontracts, Project-related correspondence with Subcontractors, and records of meetings with Subcontractors. Upon request by the City, Contractor will permit review of and/or provide copies of any of these construction records.

(H) **Responsible Party.** Contractor is solely responsible to City for the acts or omissions of any Subcontractors, or any other party or parties performing portions of the Work or providing equipment, materials or services for or on behalf of Contractor or the

Subcontractors. Upon City's written request, Contractor must promptly and permanently remove from the Project, at no cost to City, any employee or Subcontractor or employee of a Subcontractor who the Engineer has determined to be incompetent, intemperate or disorderly, or who has failed or refused to perform the Work as required under the Contract Documents.

(I) **Correction of Defects.** Contractor must promptly correct, at Contractor's sole expense, any Work that is determined by City to be deficient or defective in any way, including workmanship, materials, parts, or equipment. Workmanship, materials, parts, or equipment that do not conform to the requirements under the Contract Documents, as determined by City, will be considered defective and subject to rejection. Contractor must also promptly correct, at Contractor's sole expense, any Work performed beyond the lines and grades shown on the Plans or established by City, and any Extra Work performed without City's prior written approval. If Contractor fails to correct or to take reasonable steps toward correcting defective Work within five days following notice from City, or within the time specified in City's notice to correct, City may elect to have the defective Work corrected by its own forces or by a third party, in which case the cost of correction will be deducted from the Contract Price. If City elects to correct defective Work due to Contractor's failure or refusal to do so, City or its agents will have the right to take possession of and use any equipment, supplies, or materials available at the Project site or any Worksite on City property, in order to effectuate the correction, at no extra cost to City. Contractor's warranty obligations under Section 11.2, Warranty, will not be waived nor limited by City's actions to correct defective Work under these circumstances. Alternatively, City may elect to retain defective Work, and deduct the difference in value, as determined by the Engineer, from payments otherwise due to Contractor. This paragraph applies to any defective Work performed by Contractor during the one-year warranty period under Section 11.2.

(J) **Contractor's Records.** Contractor must maintain all of its records relating to the Project in any form, including paper documents, photos, videos, electronic records, approved samples, and the construction records required pursuant to paragraph (G), above. Project records subject to this provision include complete Project cost records and records relating to preparation of Contractor's bid, including estimates, take-offs, and price quotes or bids.

(1) Contractor's cost records must include all supporting documentation, including original receipts, invoices, and payroll records, evidencing its direct costs to perform the Work, including, but not limited to, costs for labor, materials, and equipment. Each cost record should include, at a minimum, a description of the expenditure with references to the applicable requirements of the Contract Documents, the amount actually paid, the date of payment, and whether the expenditure is part of the original Contract Price, related to an executed Change Order, or otherwise categorized by Contractor as Extra Work. Contractor's failure to comply with this provision as to any claimed cost operates as a waiver of any rights to recover the claimed cost.

(2) Contractor must continue to maintain its Project-related records in an organized manner for a period of five years after City's acceptance of the Project or following Contract termination, whichever occurs first. Subject to prior notice to Contractor, City is entitled to inspect or audit any of Contractor's records relating to the Project during Contractor's normal business hours. Contractor's records may also be subject to examination and audit by the California State Auditor, pursuant to Government Code § 8546.7. The record-keeping requirements set

forth in this subsection 2.2(J) will survive expiration or termination of the Contract.

(K) **Copies of Project Documents.** Contractor and its Subcontractors must keep copies, at the Project site, of all Work-related documents, including the Contract, permit(s), Plans, Specifications, addenda, Contract amendments, Change Orders, RFIs and RFI responses, Shop Drawings, as-built drawings, schedules, daily records, testing and inspection reports or results, and any related written interpretations. These documents must be available to City for reference at all times during construction of the Project.

### 2.3 Subcontractors.

(A) **General.** All Work which is not performed by Contractor with its own forces must be performed by Subcontractors. City reserves the right to approve or reject any and all Subcontractors proposed to perform the Work, for reasons including the Subcontractor's poor reputation, lack of relevant experience, financial instability, and lack of technical ability or adequate trained workforce. Each Subcontractor must obtain a City business license before performing any Work.

(B) **Contractual Obligations.** Contractor must require each Subcontractor to comply with the provisions of the Contract Documents as they apply to the Subcontractor's portion(s) of the Work, including the generally applicable terms of the Contract Documents, and to likewise bind their subcontractors. Contractor will provide that the rights that each Subcontractor may have against any manufacturer or supplier for breach of warranty or guarantee relating to items provided by the Subcontractor for the Project, will be assigned to City. Nothing in these Contract Documents creates a contractual relationship between a Subcontractor and City, but City is deemed to be a third-party beneficiary of the contract between Contractor and each Subcontractor.

(C) **Termination.** If the Contract is terminated, each Subcontractor's agreement must be assigned by Contractor to City, subject to the prior rights of any surety, but only if and to the extent that City accepts, in writing, the assignment by written notification, and assumes all rights and obligations of Contractor pursuant to each such subcontract agreement.

(D) **Substitution of Subcontractor.** If Contractor requests substitution of a listed Subcontractor under Public Contract Code § 4107, Contractor is solely responsible for all costs City incurs in responding to the request, including legal fees and costs to conduct a hearing, and any increased subcontract cost to perform the Work that was to be performed by the listed Subcontractor. If City determines that a Subcontractor is unacceptable to City based on the Subcontractor's failure to satisfactorily perform its Work, or for any of the grounds for substitution listed in Public Contract Code § 4107(a), City may request removal of the Subcontractor from the Project. Upon receipt of a written request from City to remove a Subcontractor pursuant to this paragraph, Contractor will immediately remove the Subcontractor from the Project and, at no further cost to City, will either (1) self-perform the remaining Work to the extent that Contractor is duly licensed and qualified to do so, or (2) substitute a Subcontractor that is acceptable to City, in compliance with Public Contract Code § 4107, as applicable.

## 2.4 Coordination of Work.

(A) **Concurrent Work.** City reserves the right to perform, have performed, or permit performance of other work on or adjacent to the Project site while the Work is being performed for the Project. Contractor is responsible for coordinating its Work with other work being performed on or adjacent to the Project site, including by any utility companies or agencies, and must avoid hindering, delaying, or interfering with the work of other contractors, individuals, or entities, and must ensure safe and reasonable site access and use as required or authorized by City. To the full extent permitted by law, Contractor must hold harmless and indemnify City against any and all claims arising from or related to Contractor's avoidable, negligent, or willful hindrance of, delay to, or interference with the work of any utility company or agency or another contractor or subcontractor.

(B) **Coordination.** If Contractor's Work will connect or interface with work performed by others, Contractor is responsible for independently measuring and visually inspecting such work to ensure a correct connection and interface. Contractor is responsible for any failure by Contractor or its Subcontractors to confirm measurements before proceeding with connecting Work. Before proceeding with any portion of the Work affected by the construction or operations of others, Contractor must give the Project Manager prompt written notification of any defects Contractor discovers which will prevent the proper execution of the Work. Failure to give notice of any known or reasonably discoverable defects will be deemed acknowledgement by Contractor that the work of others is not defective and will not prevent the proper execution of the Work. Contractor must also promptly notify City if work performed by others, including work or activities performed by City's own forces, is operating to hinder, delay, or interfere with Contractor's timely performance of the Work. City reserves the right to backcharge Contractor for any additional costs incurred due to Contractor's failure to comply with the requirements in this Section 2.4.

2.5 **Submittals.** Unless otherwise specified, Contractor must submit to the Engineer for review and acceptance, all schedules, Shop Drawings, samples, product data, and similar submittals required by the Contract Documents, or upon request by the Engineer. Unless otherwise specified, all submittals, including Requests for Information, are subject to the general provisions of this Section, as well as specific submittal requirements that may be included elsewhere in the Contract Documents, including the Special Conditions or Specifications. The Engineer may require submission of a submittal schedule at or before a pre-construction conference, as may be specified in the Notice to Proceed.

(A) **General.** Contractor is responsible for ensuring that its submittals are accurate and conform to the Contract Documents.

(B) **Time and Manner of Submission.** Contractor must ensure that its submittals are prepared and delivered in a manner consistent with the current City-accepted schedule for the Work and within the applicable time specified in the Contract Documents, or if no time is specified, in such time and sequence so as not to delay the performance of the Work or completion of the Project.

(C) **Required Contents.** Each submittal must include the Project name and contract number, Contractor's name and address, the name and address of any Subcontractor or supplier involved with the submittal, the date, and references to applicable Specification section(s) and/or drawing and detail number(s).

(D) **Required Corrections.** If corrections are required, Contractor must promptly make and submit any required corrections as specified in full conformance with the requirements of this Section, or other requirements that apply to that submittal.

(E) **Effect of Review and Acceptance.** Review and acceptance of a submittal by City will not relieve Contractor from complying with the requirements of the Contract Documents. Contractor is responsible for any errors in any submittal, and review or acceptance of a submittal by City is not an assumption of risk or liability by City.

(F) **Enforcement.** Any Work performed or any material furnished, installed, fabricated or used without City's prior acceptance of a required submittal is performed or provided at Contractor's risk, and Contractor may be required to bear the costs incident thereto, including the cost of removing and replacing such Work, repairs to other affected portions of the Work or material, and the cost of additional time or services required of City, including costs for the Design Professional, Project Manager, or Inspector.

(G) **Excessive RFIs.** A RFI will be considered excessive or unnecessary if City determines that the explanation or response to the RFI is clearly and unambiguously discernable from the Contract Documents. City's costs to review and respond to excessive or unnecessary RFIs may be deducted from payments otherwise due to Contractor.

- 2.6 Shop Drawings.** When Shop Drawings are required by the Specifications or requested by the Engineer, they must be prepared according to best practices at Contractor's expense. The Shop Drawings must be of a size and scale to clearly show all necessary details. Unless otherwise specified by City, Shop Drawings must be provided to the Engineer for review and acceptance at least 30 days before the Work will be performed. If City requires changes, the corrected Shop Drawings must be resubmitted to the Engineer for review within the time specified by the Engineer. For all Project components requiring Shop Drawings, Contractor will not furnish materials or perform any Work until the Shop Drawings for those components are accepted by City. Contractor is responsible for any errors or omissions in the Shop Drawings, shop fits and field corrections; any deviations from the Contract Documents; and for the results obtained by the use of Shop Drawings. Acceptance of Shop Drawings by City does not relieve Contractor of Contractor's responsibility.
- 2.7 Access to Work.** Contractor must afford prompt and safe access to any Worksite by City and its employees, agents, or consultants authorized by City; and upon request by City, Contractor must promptly arrange for City representatives to visit or inspect manufacturing sites or fabrication facilities for items to be incorporated into the Work.
- 2.8 Personnel.** Contractor and its Subcontractors must employ only competent and skillful personnel to perform the Work. Contractor and its Subcontractor's supervisors, security or safety personnel, and employees who have unescorted access to the Project site must possess proficiency in English sufficient to read, understand, receive, and implement oral or written communications or instructions relating to their respective job functions, including safety and security requirements. Upon written notification from the Engineer, Contractor and its Subcontractors must immediately discharge any personnel who are incompetent, disorderly, disruptive, threatening, abusive, or profane, or otherwise refuse or fail to comply with the requirements of the Contract Documents or Laws, including Laws pertaining to health and safety. Any such discharged personnel may not be re-employed or permitted on the Project in any capacity without City's prior written consent.

## Article 3 - Contract Documents

### 3.1 Interpretation of Contract Documents.

(A) **Plans and Specifications.** The Plans and Specifications included in the Contract Documents are complementary. If Work is shown on one but not on the other, Contractor must perform the Work as though fully described on both, consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. The Plans and Specifications are deemed to include and require everything necessary and reasonably incidental to completion of the Work, whether or not particularly mentioned or shown. Contractor must perform all Work and services and supply all things reasonably related to and inferable from the Contract Documents. In the event of a conflict between the Plans and Specifications, the Specifications will control, unless the drawing(s) at issue are dated later than the Specification(s) at issue. Detailed drawings take precedence over general drawings, and large-scale drawings take precedence over smaller scale drawings. Any arrangement or division of the Plans and Specifications into sections is for convenience and is not intended to limit the Work required by separate trades. A conclusion presented in the Plans or Specifications is only a recommendation. Actual locations and depths must be determined by Contractor's field investigation. Contractor may request access to underlying or background information in City's possession that is necessary for Contractor to form its own conclusions.

(B) **Duty to Notify and Seek Direction.** If Contractor becomes aware of a changed condition in the Project, or of any ambiguity, conflict, inconsistency, discrepancy, omission, or error in the Contract Documents, including the Plans or Specifications, Contractor must promptly submit a Request for Information to the Engineer and wait for a response from City before proceeding further with the related Work. The RFI must notify City of the issue and request clarification, interpretation or direction. The Engineer's clarification, interpretation or direction will be final and binding on Contractor. If Contractor proceeds with the related Work before obtaining City's response, Contractor will be responsible for any resulting costs, including the cost of correcting any incorrect or defective Work that results. Timely submission of a clear and complete RFI is essential to avoiding delay. Delay resulting from Contractor's failure to submit a timely and complete RFI to the Engineer is Non-Excusable Delay. If Contractor believes that City's response to an RFI justifies a change to the Contract Price or Contract Time, Contractor must perform the Work as directed, but may submit a timely Change Order request in accordance with the Contract Documents. (See Articles 5 and 6.)

(C) **Figures and Dimensions.** Figures control over scaled dimensions.

(D) **Technical or Trade Terms.** Any terms that have well-known technical or trade meanings will be interpreted in accordance with those meanings, unless otherwise specifically defined in the Contract Documents.

(E) **Measurements.** Contractor must verify all relevant measurements in the Contract Documents and at the Project site before ordering any material or performing any Work, and will be responsible for the correctness of those measurements or for costs that could have been avoided by independently verifying measurements.

(F) **Compliance with Laws.** The Contract Documents are intended to comply with Laws and will be interpreted to comply with Laws.

### 3.2 Order of Precedence. Information included in one Contract Document but not in another will not be considered a conflict or inconsistency. Unless otherwise specified in

the Special Conditions, in case of any conflict or inconsistency among the Contract Documents, the following order of precedence will apply, beginning from highest to lowest, with the most recent version taking precedent over an earlier version:

- (A) Change Orders;
- (B) Addenda;
- (C) Contract;
- (D) Notice to Proceed;
- (E) Attachment B – Federal Contract Requirements (only if used);
- (F) Special Conditions;
- (G) General Conditions;
- (H) Payment and Performance Bonds;
- (I) Specifications;
- (J) Plans;
- (K) Notice of Potential Award;
- (L) Notice Inviting Bids;
- (M) Attachment A – Federal Bidding Requirements (only if used);
- (N) Instructions to Bidders;
- (O) Contractor's Bid Proposal and attachments;
- (P) the City's standard specifications, as applicable; and
- (Q) Any generic documents prepared by and on behalf of a third party, that were not prepared specifically for this Project, such as the Caltrans Standard Specifications or Caltrans Special Provisions.

**3.3 Caltrans Standard Specifications.** Any reference to or incorporation of the Standard Specifications of the State of California, Department of Transportation ("Caltrans"), including "Standard Specifications," "Caltrans Specifications," "State Specifications," or "CSS," means the most current edition of Caltrans' Standard Specifications, unless otherwise specified ("Caltrans Standard Specifications"), including the most current amendments as of the date that Contractor's bid was submitted for this Project. The following provisions apply to use of or reference to the Caltrans Standard Specifications or Special Provisions:

(A) **Limitations.** The "General Provisions" of the Caltrans Standard Specifications, i.e., sections 1 through 9, do not apply to these Contract Documents with the exception of any specific provisions, if any, which are expressly stated to apply to these Contract Documents.

(B) **Conflicts or Inconsistencies.** If there is a conflict or inconsistency between any provision in the Caltrans Standard Specifications or Special Provisions and a provision of these Contract Documents, as determined by City, the provision in the Contract Documents will govern.

(C) **Meanings.** Terms used in the Caltrans Standard Specifications or Special Provisions are to be interpreted as follows:

- (1) Any reference to the "Engineer" is deemed to mean the City Engineer.
- (2) Any reference to the "Special Provisions" is deemed to mean the Special Conditions, unless the Caltrans Special Provisions are expressly included in the Contract Documents listed in Section 2 of the Contract.
- (3) Any reference to the "Department" or "State" is deemed to mean City.

- 3.4 For Reference Only.** Contractor is responsible for the careful review of any document, study, or report provided by City or appended to the Contract Documents solely for informational purposes and identified as "For Reference Only." Nothing in any document, study, or report so appended and identified is intended to supplement, alter, or void any provision of the Contract Documents. Contractor is advised that City or its representatives may be guided by information or recommendations included in such reference documents, particularly when making determinations as to the acceptability of proposed materials, methods, or changes in the Work. Any record drawings or similar final or accepted drawings or maps that are not part of the Contract Documents are deemed to be For Reference Only. The provisions of the Contract Documents are not modified by any perceived or actual conflict with provisions in any document that is provided For Reference Only.
- 3.5 Current Versions.** Unless otherwise specified by City, any reference to standard specifications, technical specifications, or any City or state codes or regulations means the latest specification, code, or regulation in effect on the date that bids were due.
- 3.6 Conformed Copies.** If City prepares a conformed set of the Contract Documents following award of the Contract, it will provide Contractor with two hard copy (paper) sets and one copy of the electronic file in PDF format. It is Contractor's responsibility to ensure that all Subcontractors, including fabricators, are provided with the conformed set of the Contract Documents at Contractor's sole expense.
- 3.7 Ownership.** No portion of the Contract Documents may be used for any purpose other than construction of the Project, without prior written consent from City. Contractor is deemed to have conveyed the copyright in any designs, drawings, specifications, Shop Drawings, or other documents (in paper or electronic form) developed by Contractor for the Project, and City will retain all rights to such works, including the right to possession.

#### **Article 4 - Bonds, Indemnity, and Insurance**

- 4.1 Payment and Performance Bonds.** Within ten days following issuance of the Notice of Potential Award, Contractor is required to provide a payment bond and a performance bond, each in the penal sum of not less than 100% of the Contract Price, and each executed by Contractor and its surety using the bond forms included with the Contract Documents.
- (A) **Surety.** Each bond must be issued and executed by a surety admitted in California. If an issuing surety cancels the bond or becomes insolvent, within seven days following written notice from City, Contractor must substitute a surety acceptable to City. If Contractor fails to substitute an acceptable surety within the specified time, City may, at its sole discretion, withhold payment from Contractor until the surety is replaced to City's satisfaction, or terminate the Contract for default.
- (B) **Supplemental Bonds for Increase in Contract Price.** If the Contract Price increases during construction by five percent or more over the original Contract Price, Contractor must provide supplemental or replacement bonds within ten days of written notice from City pursuant to this Section, covering 100% of the increased Contract Price and using the bond forms included with the Contract Documents.
- 4.2 Indemnity.** To the fullest extent permitted by law, Contractor must indemnify, defend, and hold harmless City, its Council, officers, officials, employees, agents, volunteers, and consultants (individually, an "Indemnitee," and collectively the "Indemnitees") from and

against any and all liability, loss, damage, claims, causes of action, demands, charges, fines, costs, and expenses (including, without limitation, attorney fees, expert witness fees, paralegal fees, and fees and costs of litigation or arbitration) (collectively, "Liability") of every nature arising out of or in connection with the acts or omissions of Contractor, its employees, Subcontractors, representatives, or agents, in bidding or performing the Work or in failing to comply with any obligation of Contractor under the Contract, except such Liability caused by the active negligence, sole negligence, or willful misconduct of an Indemnitee. This indemnity requirement applies to any Liability arising from alleged defects in the content or manner of submission of Contractor's bid for the Contract. Contractor's failure or refusal to timely accept a tender of defense pursuant to this Contract will be deemed a material breach of the Contract. City will timely notify Contractor upon receipt of any third-party claim relating to the Contract, as required by Public Contract Code § 9201. Contractor waives any right to express or implied indemnity against any Indemnitee. Contractor's indemnity obligations under this Contract will survive the expiration or any early termination of the Contract.

**4.3 Insurance.** No later than ten days following issuance of the Notice of Potential Award, Contractor must procure and provide proof of the insurance coverage required by this Section in the form of certificates and endorsements acceptable to City. The required insurance must cover the activities of Contractor and its Subcontractors relating to or arising from the performance of the Work, and must remain in full force and effect at all times during the period covered by the Contract, through the date of City's acceptance of the Project. All required insurance must be issued by a company licensed to do business in the State of California, and each such insurer must have an A.M. Best's financial strength rating of "A" or better and a financial size rating of "VIII" or better. If Contractor fails to provide any of the required coverage in full compliance with the requirements of the Contract Documents, City may, at its sole discretion, purchase such coverage at Contractor's expense and deduct the cost from payments due to Contractor, or terminate the Contract for default. The procurement of the required insurance will not be construed to limit Contractor's liability under this Contract or to fulfill Contractor's indemnification obligations under this Contract.

(A) **Policies and Limits.** The following insurance policies and limits are required for this Contract, unless otherwise specified in the Special Conditions:

(1) *Commercial General Liability ("CGL") Insurance:* The CGL insurance policy must be issued on an occurrence basis, written on a comprehensive general liability form, and must include coverage for liability arising from Contractor's or its Subcontractor's acts or omissions in the performance of the Work, including contractor's protective coverage, contractual liability, products and completed operations, and broad form property damage, with limits of at least \$5,000,000 per occurrence and at least \$4,000,000 general aggregate. The CGL insurance coverage may be arranged under a single policy for the full limits required or by a combination of underlying policies with the balance provided by excess or umbrella policies, provided each such policy complies with the requirements set forth in this Section, including required endorsements. This policy does not exclude explosion, collapse, underground excavation hazard, or removal of lateral support.

(2) *Automobile Liability Insurance:* The automobile liability insurance policy must provide coverage of at least \$2,000,000 combined single-limit per accident for bodily injury, death, or property damage, including hired and non-owned auto liability.

(3) *Workers' Compensation Insurance and Employer's Liability:* The workers' compensation and employer's liability insurance policy must comply with the requirements of the California Labor Code, providing coverage of at least \$1,000,000 or as otherwise required by the statute. If Contractor is self-insured, Contractor must provide its Certificate of Permission to Self-Insure, duly authorized by the DIR.

(4) *Pollution Liability Insurance:* The pollution liability insurance policy must be issued on an occurrence basis, providing coverage of at least \$2,000,000 for all loss arising out of claims for bodily injury, death, property damage, or environmental damage caused by pollution conditions resulting from the Work.

(5) *Builder's Risk Insurance:* The builder's risk insurance policy must be issued on an occurrence basis, for all-risk or "all perils" coverage on a 100% completed value basis on the insurable portion of the Project for the benefit of City.

(6) The inclusion of more than one insured will not operate to impair the rights of one insured against another, and the coverages afforded will apply as though separate policies have been issued to each insured.

(B) **Notice.** Each certificate of insurance must state that the coverage afforded by the policy or policies will not be reduced, cancelled or allowed to expire without at least 30 days advance written notice to City, unless due to non-payment of premiums, in which case ten days advance written notice must be made to City.

(C) **Waiver of Subrogation.** Each required policy must include an endorsement providing that the carrier will waive any right of subrogation it may have against City.

(D) **Required Endorsements.** The CGL policy, automobile liability policy, pollution liability policy, and builder's risk policy must include the following specific endorsements:

(1) The City, including its Council, officials, officers, employees, agents, volunteers and consultants (collectively, "Additional Insured") must be named as an additional insured for all liability arising out of the operations by or on behalf of the named insured, and the policy must protect the Additional Insured against any and all liability for personal injury, death or property damage or destruction arising directly or indirectly in the performance of the Contract. The additional insured endorsement must be provided using ISO form CG 20 10 11 85 or equivalent form(s) approved by the City.

(2) The inclusion of more than one insured will not operate to impair the rights of one insured against another, and the coverages afforded will apply as though separate policies have been issued to each insured.

(3) The insurance provided by Contractor is primary and no insurance held or owned by any Additional Insured may be called upon to contribute to a loss.

(4) This policy does not exclude explosion, collapse, underground excavation hazard, or removal of lateral support.

(E) **Contractor's Responsibilities.** This Section 4.3 establishes the minimum requirements for Contractor's insurance coverage in relation to this Project, but is not intended to limit Contractor's ability to procure additional or greater coverage. Contractor

is responsible for its own risk assessment and needs and is encouraged to consult its insurance provider to determine what coverage it may wish to carry beyond the minimum requirements of this Section. Contractor is solely responsible for the cost of its insurance coverage, including premium payments, deductibles, or self-insured retentions, and no Additional Insured will be responsible or liable for any of the cost of Contractor's insurance coverage.

(F) **Deductibles and Self-Insured Retentions.** Any deductibles or self-insured retentions that apply to the required insurance (collectively, "deductibles") in excess of \$100,000 are subject to approval by the City's Risk Manager, acting in his or her sole discretion, and must be declared by Contractor when it submits its certificates of insurance and endorsements pursuant to this Section 4.3. If the City's Risk Manager determines that the deductibles are unacceptably high, at City's option, Contractor must either reduce or eliminate the deductibles as they apply to City and all required Additional Insured; or must provide a financial guarantee, to City's satisfaction, guaranteeing payment of losses and related investigation, claim administration, and legal expenses.

(G) **Subcontractors.** Contractor must ensure that each Subcontractor is required to maintain the same insurance coverage required under this Section 4.3, with respect to its performance of Work on the Project, including those requirements related to the Additional Insureds and waiver of subrogation, but excluding pollution liability or builder's risk insurance unless otherwise specified in the Special Conditions. A Subcontractor may be eligible for reduced insurance coverage or limits, but only to the extent approved in writing in advance by the City's Risk Manager. Contractor must confirm that each Subcontractor has complied with these insurance requirements before the Subcontractor is permitted to begin Work on the Project. Upon request by the City, Contractor must provide certificates and endorsements submitted by each Subcontractor to prove compliance with this requirement. The insurance requirements for Subcontractors do not replace or limit the Contractor's insurance obligations.

## Article 5 - Contract Time

**5.1 Time is of the Essence.** Time is of the essence in Contractor's performance and completion of the Work, and Contractor must diligently prosecute the Work and complete it within the Contract Time.

(A) **General.** Contractor must commence the Work on the date indicated in the Notice to Proceed and must fully complete the Work in strict compliance with all requirements of the Contract Documents and within the Contract Time. Contractor may not begin performing the Work before the date specified in the Notice to Proceed.

(B) **Authorization.** Contractor is not entitled to compensation or credit for any Work performed before the date specified in the Notice to Proceed, with the exception of any schedules, submittals, or other requirements, if any, that must be provided or performed before issuance of the Notice to Proceed.

(C) **Rate of Progress.** Contractor and its Subcontractors must, at all times, provide workers, materials, and equipment sufficient to maintain the rate of progress necessary to ensure full completion of the Work within the Contract Time. If City determines that Contractor is failing to prosecute the Work at a sufficient rate of progress, City may, in its sole discretion, direct Contractor to provide additional workers, materials, or equipment, or to work additional hours or days without additional cost to City, in order to achieve a rate of progress satisfactory to City. If Contractor fails to comply with City's directive in

this regard, City may, at Contractor's expense, separately contract for additional workers, materials, or equipment or use City's own forces to achieve the necessary rate of progress. Alternatively, City may terminate the Contract based on Contractor's default.

**5.2 Schedule Requirements.** Contractor must prepare all schedules using standard, commercial scheduling software acceptable to the Engineer, and must provide the schedules in electronic and paper form as requested by the Engineer. In addition to the general scheduling requirements set forth below, Contractor must also comply with any scheduling requirements included in the Special Conditions or in the Technical Specifications.

(A) **Baseline (As-Planned) Schedule.** Within ten calendar days following City's issuance of the Notice to Proceed (or as otherwise specified in the Notice to Proceed), Contractor must submit to City for review and acceptance a baseline (as-planned) schedule using critical path methodology showing in detail how Contractor plans to perform and fully complete the Work within the Contract Time, including labor, equipment, materials, and fabricated items. The baseline schedule must show the order of the major items of Work and the dates of start and completion of each item, including when the materials and equipment will be procured. The schedule must also include the work of all trades, reflecting anticipated labor or crew hours and equipment loading for the construction activities, and must be sufficiently comprehensive and detailed to enable progress to be monitored on a day-by-day basis. For each activity, the baseline schedule must be dated, provided in the format specified in the Contract Documents or as required by City, and must include, at a minimum, a description of the activity, the start and completion dates of the activity, and the duration of the activity.

(1) **Specialized Materials Ordering.** Within five calendar days following issuance of the Notice to Proceed, Contractor must order any specialized material or equipment for the Work that is not readily available from material suppliers. Contractor must also retain documentation of the purchase order date(s).

(B) **City's Review of Schedules.** City will review and may note exceptions to the baseline schedule, and to the progress schedules submitted as required below, to assure completion of the Work within the Contract Time. Contractor is solely responsible for resolving any exceptions noted in a schedule and, within seven days, must correct the schedule to address the exceptions. City's review or acceptance of Contractor's schedules will not operate to waive or limit Contractor's duty to complete the Project within the Contract Time, nor to waive or limit City's right to assess liquidated damages for Contractor's unexcused failure to do so.

(C) **Progress Schedules.** After City accepts the final baseline schedule with no exceptions, Contractor must submit an updated progress schedule and three-week look-ahead schedule, in the format specified by City, for review and acceptance with each application for a progress payment, or when otherwise specified by City, until completion of the Work. The updated progress schedule must: show how the actual progress of the Work as constructed to date compares to the baseline schedule; reflect any proposed changes in the construction schedule or method of operations, including to achieve Project milestones within the Contract Time; and identify any actual or potential impacts to the critical path. Contractor must also submit periodic reports to City of any changes in the projected material or equipment delivery dates for the Project.

(1) **Float.** The progress schedule must show early and late completion dates for each task. The number of days between those dates will be designated as the

“float.” Any float belongs to the Project and may be allocated by the Engineer to best serve timely completion of the Project.

(2) **Failure to Submit Schedule.** Reliable, up-to-date schedules are essential to efficient and cost-effective administration of the Project and timely completion. If Contractor fails to submit a schedule within the time periods specified in this Section, or submits a schedule to which City has noted exceptions that are not corrected, City may withhold up to five percent from payment(s) otherwise due to Contractor until the exceptions are resolved, the schedule is corrected and resubmitted, and City has accepted the schedule. In addition, Contractor’s failure to comply with the schedule requirements in this Section 5.2 will be deemed a material default and a waiver of any claims for Excusable Delay or loss of productivity arising during any period when Contractor is out of compliance, subject only to the limits of Public Contract Code § 7102.

(D) **Recovery Schedule.** If City determines that the Work is more than one week behind schedule, within seven days following written notice of such determination, Contractor must submit a recovery schedule, showing how Contractor intends to perform and complete the Work within the Contract Time, based on actual progress to date.

(E) **Effect of Acceptance.** Contractor and its Subcontractors must perform the Work in accordance with the most current City-accepted schedule unless otherwise directed by City. City’s acceptance of a schedule does not operate to extend the time for completion of the Work or any component of the Work, and will not affect City’s right to assess liquidated damages for Contractor’s unexcused delay in completing the Work within the Contract Time.

(F) **Posting.** Contractor must at all times prominently post a copy of the most current City-accepted progress or recovery schedule in its on-site office.

(G) **Reservation of Rights.** City reserves the right to direct the sequence in which the Work must be performed or to make changes in the sequence of the Work in order to facilitate the performance of work by City or others, or to facilitate City’s use of its property. The Contract Time or Contract Price may be adjusted to the extent such changes in sequence actually increase or decrease Contractor’s time or cost to perform the Work.

(H) **Authorized Working Days and Times.** Contractor is limited to working Monday through Friday, excluding holidays, during City’s normal business hours, except as provided in the Special Conditions or as authorized in writing by City. City reserves the right to charge Contractor for additional costs incurred by City due to Work performed on days or during hours not expressly authorized in the Contract Documents, including reimbursement of costs incurred for inspection, testing, and construction management services.

### 5.3 Delay and Extensions of Contract Time.

(A) **Notice of Delay.** If Contractor becomes aware of any actual or potential delay affecting the critical path, Contractor must promptly notify the Engineer in writing, regardless of the nature or cause of the delay, so that City has a reasonable opportunity to mitigate or avoid the delay.

(B) **Excusable Delay.** The Contract Time may be extended if Contractor encounters “Excusable Delay,” which is an unavoidable delay in completing the Work within the

Contract Time due to causes completely beyond Contractor's control, and which Contractor could not have avoided or mitigated through reasonable care, planning, foresight, or diligence, provided that Contractor is otherwise fully performing its obligations under the Contract Documents. Grounds for Excusable Delay may include fire, natural disasters including earthquake or unusually severe weather, acts of terror or vandalism, epidemic, unforeseeable adverse government actions, unforeseeable actions of third parties, encountering unforeseeable hazardous materials, unforeseeable site conditions, or suspension for convenience under Article 13. The Contract Time will not be extended based on circumstances which will not unavoidably delay completing the Work within the Contract Time based on critical path analysis.

(C) **Weather Delays.** A "Weather Delay Day" is a Working Day during which Contractor and its forces, including Subcontractors, are unable to perform more than 40% of the critical path Work scheduled for that day due to adverse weather conditions which impair the ability to safely or effectively perform the scheduled critical path Work that day. Adverse weather conditions may include rain, saturated soil, and Project site clean-up required due to adverse weather. Determination of what constitutes critical path Work scheduled for that day will be based on the most current, City-approved schedule. Contractor will be entitled to a non-compensable extension of the Contract Time for each Weather Delay Day in excess of the normal Weather Delay Days within a given month as determined by reliable records, including monthly rainfall averages, for the preceding ten years (or as otherwise specified in the Special Conditions or Specifications).

- (1) Contractor must fully comply with the applicable procedures in Articles 5 and 6 of the General Conditions regarding requests to modify the Contract Time.
- (2) Contractor will not be entitled to an extension of time for a Weather Delay Day to the extent Contractor is responsible for concurrent delay on that day.
- (3) Contractor must take reasonable steps to mitigate the consequences of Weather Delay Days, including prudent workforce management and protecting the Work, Project Site, materials, and equipment.

(D) **Non-Excusable Delay.** Delay which Contractor could have avoided or mitigated through reasonable care, planning, foresight, or diligence is "Non-Excusable Delay." Contractor is not entitled to an extension of Contract Time or any compensation for Non-Excusable Delay, or for Excusable Delay that is concurrent with Non-Excusable Delay. Non-Excusable Delay includes delay caused by:

- (1) weather conditions which are normal for the location of the Project, as determined by reliable records, including monthly rainfall averages, for the preceding ten years;
- (2) Contractor's failure to order equipment and materials sufficiently in advance of the time needed for completion of the Work within the Contract Time;
- (3) Contractor's failure to provide adequate notification to utility companies or agencies for connections or services necessary for completion of the Work within the Contract Time;
- (4) foreseeable conditions which Contractor could have ascertained from reasonably diligent inspection of the Project site or review of the Contract Documents or other information provided or available to Contractor;

- (5) Contractor's failure, refusal, or financial inability to perform the Work within the Contract Time, including insufficient funds to pay its Subcontractors or suppliers;
- (6) performance or non-performance by Contractor's Subcontractors or suppliers;
- (7) the time required to respond to excessive RFIs (see Section 2.5(G));
- (8) delayed submission of required submittals, or the time required for correction and resubmission of defective submittals;
- (9) time required for repair of, re-testing, or re-inspection of defective Work;
- (10) enforcement of Laws by City, or outside agencies with jurisdiction over the Work; or
- (11) City's exercise or enforcement of any of its rights or Contractor's duties pursuant to the Contract Documents, including correction of defective Work, extra inspections or testing due to non-compliance with Contract requirements, safety compliance, environmental compliance, or rejection and return of defective or deficient submittals.

(E) **Compensable Delay.** Pursuant to Public Contract Code § 7102, in addition to entitlement to an extension of Contract Time, Contractor is entitled to compensation for costs incurred due to delay caused solely by City, when that delay is unreasonable under the circumstances involved and not within the contemplation of the parties ("Compensable Delay"). Contractor is not entitled to an extension of Contract Time or recovery of costs for Compensable Delay that is concurrent with Non-Excusable Delay. Delay due to Weather Delay Days in excess of normal for a given month, as set forth in Section 5.3(C), is not Compensable Delay, and will only entitle Contractor to an extension of time commensurate with the time lost due to such delay.

(F) **Recoverable Costs.** Contractor is not entitled to compensation for Excusable Delay unless it is Compensable Delay, as defined above. Contractor is entitled to recover only the actual, direct, reasonable, and substantiated costs ("Recoverable Costs") for each working day that the Compensable Delay prevents Contractor from proceeding with more than 50% of the critical path Work scheduled for that day, based on the most recent progress schedule accepted by City. Recoverable Costs will not include home office overhead or lost profit.

(G) **Request for Extension of Contract Time or Recoverable Costs.** A request for an extension of Contract Time or any associated Recoverable Costs must be submitted in writing to City within 14 calendar days of the date the delay is first encountered, even if the duration of the delay is not yet known at that time, or any entitlement to the Contract Time extension or to the Recoverable Costs will be deemed waived. In addition to complying with the requirements of this Article 5, the request must be submitted in compliance with the Change Order request procedures in Article 6 below. Strict compliance with these requirements is necessary to ensure that any delay or consequences of delay may be mitigated as soon as possible, and to facilitate cost-efficient administration of the Project and timely performance of the Work. Any request for an extension of Contract Time or Recoverable Costs that does not strictly comply with all of the requirements of Article 5 and Article 6 will be deemed waived.

(1) *Required Contents.* The request must include a detailed description of the cause(s) of the delay and must also describe the measures that Contractor has taken to mitigate the delay and/or its effects, including efforts to mitigate the cost impact of the delay, such as by workforce management or by a change in sequencing. If the delay is still ongoing at the time the request is submitted, the request should also include Contractor's plan for continued mitigation of the delay or its effects.

(2) *Delay Days and Costs.* The request must specify the number of days of Excusable Delay claimed or provide a realistic estimate if the duration of the delay is not yet known. If Contractor believes it is entitled to Recoverable Costs for Compensable Delay, the request must specify the amount and basis for the Recoverable Costs that are claimed or provide a realistic estimate if the amount is not yet known. Any estimate of delay duration or cost must be updated in writing and submitted with all required supporting documentation as soon as the actual time and cost is known. The maximum extension of Contract Time will be the number of days, if any, by which an Excusable Delay or a Compensable Delay exceeds any concurrent Non-Excusable Delay. Contractor is entitled to an extension of Contract Time, or compensation for Recoverable Costs, only if, and only to the extent that, such delay will unavoidably delay Final Completion.

(3) *Supporting Documentation.* The request must also include any and all supporting documentation necessary to evidence the delay and its actual impacts, including scheduling and cost impacts with a time impact analysis using critical path methodology and demonstrating the unavoidable delay to Final Completion. The time impact analysis must be submitted in a form or format acceptable to City.

(4) *Burden of Proof.* Contractor has the burden of proving that: the delay was an Excusable Delay or Compensable Delay, as defined above; Contractor has fully complied with its scheduling obligations in Section 5.2, Schedule Requirements; Contractor has made reasonable efforts to mitigate the delay and its schedule and cost impacts; the delay will unavoidably result in delaying Final Completion; and any Recoverable Costs claimed by Contractor were actually incurred and were reasonable under the circumstances.

(5) *Legal Compliance.* Nothing in this Section 5.3 is intended to require the waiver, alteration, or limitation of the applicability of Public Contract Code § 7102.

(6) *No Waiver.* Any grant of an extension of Contract Time, or compensation for Recoverable Costs due to Compensable Delay, will not operate as a waiver of City's right to assess liquidated damages for Non-Excusable Delay.

(7) *Dispute Resolution.* In the event of a dispute over entitlement to an extension of Contract Time or compensation for Recoverable Costs, Contractor may not stop Work pending resolution of the dispute, but must continue to comply with its duty to diligently prosecute the performance and timely completion of the Work. Contractor's sole recourse for an unresolved dispute based on City's rejection of a Change Order request for an extension of Contract Time or compensation for Recoverable Costs is to comply with the dispute resolution provisions set forth in Article 12 below.

**5.4 Liquidated Damages.** It is expressly understood that if Final Completion is not achieved within the Contract Time, City will suffer damages from the delay that are difficult to determine and accurately specify. Pursuant to Public Contract Code § 7203, if Contractor fails to achieve Final Completion within the Contract Time due to Contractor's Non-Excusable Delay, City will charge Contractor in the amount specified in the Contract for each calendar day that Final Completion is delayed beyond the Contract Time, as liquidated damages and not as a penalty. Any waiver of accrued liquidated damages, in whole or in part, is subject to approval of the City Council or its authorized delegee.

(A) **Liquidated Damages.** Liquidated damages will not be assessed for any Excusable Delay or Compensable Delay, as set forth above.

(B) **Milestones.** Liquidated damages may also be separately assessed for failure to meet milestones specified elsewhere in the Contract Documents.

(C) **Setoff.** City is entitled to deduct the amount of liquidated damages assessed against any payments otherwise due to Contractor, including progress payments, Final Payment, or unreleased retention. If there are insufficient Contract funds remaining to cover the full amount of liquidated damages assessed, City is entitled to recover the balance from Contractor or its performance bond surety.

(D) **Occupancy or Use.** Occupancy or use of the Project in whole or in part prior to Final Completion does not constitute City's acceptance of the Project and will not operate as a waiver of City's right to assess liquidated damages for Contractor's Non-Excusable Delay in achieving Final Completion.

(E) **Other Remedies.** City's right to liquidated damages under this Section applies only to damages arising from Contractor's Non-Excusable Delay or failure to complete the Work within the Contract Time. City retains its right to pursue all other remedies under the Contract for other types of damage, including damage to property or persons, costs or diminution in value from defective materials or workmanship, costs to repair or complete the Work, or other liability caused by Contractor.

## Article 6 - Contract Modification

**6.1 Contract Modification.** Subject to the limited exception set forth in subsection (D) below, any change in the Work or the Contract Documents, including the Contract Price or Contract Time, will not be a valid and binding change to the Contract unless it is formalized in a Change Order, including a "no-cost" Change Order or a unilateral Change Order. Changes in the Work pursuant to this Article 6 will not operate to release, limit, or abridge Contractor's warranty obligations pursuant to Article 11 or any obligations of Contractor's bond sureties.

(A) **City-Directed Changes.** City may direct changes in the scope or sequence of Work or the requirements of the Contract Documents, without invalidating the Contract. Such changes may include Extra Work as set forth in subsection (C) below, or deletion or modification of portions of the Work. Contractor must promptly comply with City-directed changes in the Work in accordance with the original Contract Documents, even if Contractor and City have not yet reached agreement as to adjustments to the Contract Price or Contract Time for the change in the Work or for the Extra Work. Contractor is not entitled to extra compensation for cost savings resulting from "value engineering" pursuant to Public Contract Code § 7101, except to the extent authorized in advance by

City in writing, and subject to any applicable procedural requirements for submitting a proposal for value engineering cost savings.

(B) **Disputes.** In the event of a dispute over entitlement to or the amount of a change in Contract Time or a change in Contract Price related to a City-directed change in the Work, Contractor must perform the Work as directed and may not delay its Work or cease Work pending resolution of the dispute, but must continue to comply with its duty to diligently prosecute the performance and timely completion of the Work, including the Work in dispute. Likewise, in the event that City and Contractor dispute whether a portion or portions of the Work are already required by the Contract Documents or constitute Extra Work, or otherwise dispute the interpretation of any portion(s) of the Contract Documents, Contractor must perform the Work as directed and may not delay its Work or cease Work pending resolution of the dispute, but must continue to comply with its duty to diligently prosecute the performance and timely completion of the Work, including the Work in dispute, as directed by City. If Contractor refuses to perform the Work in dispute, City may, acting in its sole discretion, elect to delete the Work from the Contract and reduce the Contract Price accordingly, and self-perform the Work or direct that the Work be performed by others. Alternatively, City may elect to terminate the Contract for convenience or for cause. Contractor's sole recourse for an unresolved dispute related to changes in the Work or performance of any Extra Work is to comply with the dispute resolution provisions set forth in Article 12, below.

(C) **Extra Work.** City may direct Contractor to perform Extra Work related to the Project. Contractor must promptly perform any Extra Work as directed or authorized by City in accordance with the original Contract Documents, even if Contractor and City have not yet reached agreement on adjustments to the Contract Price or Contract Time for such Extra Work. If Contractor believes it is necessary to perform Extra Work due to changed conditions, Contractor must promptly notify the Engineer in writing, specifically identifying the Extra Work and the reason(s) the Contractor believes it is Extra Work. This notification requirement does not constitute a Change Order request pursuant to Section 6.2, below. Contractor must maintain detailed daily records that itemize the cost of each element of Extra Work, and sufficiently distinguish the direct cost of the Extra Work from the cost of other Work performed. For each day that Contractor performs Extra Work, or Work that Contractor contends is Extra Work, Contractor must submit no later than the following Working Day, a daily report of the Extra Work performed that day and the related costs, together with copies of certified payroll, invoices, and other documentation substantiating the costs ("Extra Work Report"). The Engineer will make any adjustments to Contractor's Extra Work Report(s) based on the Engineer's records of the Work. When an Extra Work Report(s) is agreed on and signed by both City and Contractor, the Extra Work Report(s) will become the basis for payment under a duly authorized and signed Change Order. Failure to submit the required documentation by close of business on the next Working Day is deemed a full and complete waiver for any change in the Contract Price or Contract Time for any Extra Work performed that day.

(D) **Minor Changes and RFIs.** Minor field changes, including RFI replies from City, that do not affect the Contract Price or Contract Time and that are approved by the Engineer acting within his or her scope of authority, do not require a Change Order. By executing an RFI reply from City, Contractor agrees that it will perform the Work as clarified therein, with no change to the Contract Price or Contract Time.

(E) **Remedy for Non-Compliance.** Contractor's failure to promptly comply with a City-directed change is deemed a material breach of the Contract, and in addition to all other remedies available to it, City may, at its sole discretion, hire another contractor or

use its own forces to complete the disputed Work at Contractor's sole expense, and may deduct the cost from the Contract Price.

**6.2 Contractor Change Order Requests.** Contractor must submit a request or proposal for a change in the Work, compensation for Extra Work, or a change in the Contract Price or Contract Time as a written Change Order request or proposal.

(A) **Time for Submission.** Any request for a change in the Contract Price or the Contract Time must be submitted in writing to the Engineer within 14 calendar days of the date that Contractor first encounters the circumstances, information or conditions giving rise to the Change Order request, even if the total amount of the requested change in the Contract Price or impact on the Contract Time is not yet known at that time. If City requests that Contractor propose the terms of a Change Order, unless otherwise specified in City's request, Contractor must provide the Engineer with a written proposal for the change in the Contract Price or Contract Time within five working days of receiving City's request, in a form satisfactory to the Engineer.

(B) **Required Contents.** Any Change Order request or proposal submitted by Contractor must include a complete breakdown of actual or estimated costs and credits, and must itemize labor, materials, equipment, taxes, insurance, subcontract amounts, and, if applicable, Extra Work Reports. Any estimated cost must be updated in writing as soon as the actual amount is known.

(C) **Required Documentation.** All claimed costs must be fully documented, and any related request for an extension of time or delay-related costs must be included at that time and in compliance with the requirements of Article 5 of the General Conditions. Upon request, Contractor must permit City to inspect its original and unaltered bidding records, subcontract agreements, subcontract change orders, purchase orders, invoices, or receipts associated with the claimed costs.

(D) **Required Form.** Contractor must use City's form(s) for submitting all Change Order requests or proposals, unless otherwise specified by City.

(E) **Certification.** All Change Order requests must be signed by Contractor and must include the following certification:

"The undersigned Contractor certifies under penalty of perjury that its statements and representations in this Change Order request are true and correct. Contractor warrants that this Change Order request is comprehensive and complete as to the Work or changes referenced herein, and agrees that any known or foreseeable costs, expenses, or time extension requests not included herein, are deemed waived."

**6.3 Adjustments to Contract Price.** The amount of any increase or decrease in the Contract Price will be determined based on one of the following methods listed below, in the order listed with unit pricing taking precedence over the other methods. Markup applies only to City-authorized time and material Work, and does not apply to any other payments to Contractor. For Work items or components that are deleted in their entirety, Contractor will only be entitled to compensation for those direct, actual, and documented costs (including restocking fees), reasonably incurred before Contractor was notified of the City's intent to delete the Work, with no markup for overhead, profit, or other indirect costs.

(A) **Unit Pricing.** Amounts previously provided by Contractor in the form of unit prices, either in a bid schedule or in a post-award schedule of values pursuant to Section 8.1, Schedule of Values, will apply to determine the price for the affected Work, to the extent applicable unit prices have been provided for that type of Work. No additional markup for overhead, profit, or other indirect costs will be added to the calculation.

(B) **Lump Sum.** A mutually agreed upon, all-inclusive lump sum price for the affected Work with no additional markup for overhead, profit, or other indirect costs.

(C) **Time and Materials.** On a time and materials basis, if and only to the extent compensation on a time and materials basis is expressly authorized by City in advance of Contractor's performance of the Work and subject to any not-to-exceed limit. Time and materials compensation for increased costs or Extra Work (but not decreased costs or deleted Work) will include allowed markup for overhead, profit, and other indirect costs, calculated as the total of the following sums, the cumulative total of which may not exceed the maximum markup rate of 15%:

(1) All direct labor costs provided by the Contractor, excluding superintendence, project management, or administrative costs, plus 15% markup;

(2) All direct material costs provided by the Contractor, including sales tax, plus 15% markup;

(3) All direct plant and equipment rental costs provided by the Contractor, plus 15% markup;

(4) All direct additional subcontract costs plus 10% markup for Work performed by Subcontractors; and

(5) Increased bond or insurance premium costs computed at 1.5% of the total of the previous four sums.

**6.4 Unilateral Change Order.** If the parties dispute the terms of a proposed Change Order, including disputes over the amount of compensation or extension of time that Contractor has requested, the value of deleted or changed Work, what constitutes Extra Work, or quantities used, City may elect to issue a unilateral Change Order, directing performance of the Work, and authorizing a change in the Contract Price or Contract Time for the adjustment to compensation or time that the City believes is merited. Contractor's sole recourse to dispute the terms of a unilateral Change Order is to submit a timely Claim pursuant to Article 12, below.

**6.5 Non-Compliance Deemed Waiver.** Contractor waives its entitlement to any increase in the Contract Price or Contract Time if Contractor fails to fully comply with the provisions of this Article. Contractor will not be paid for unauthorized Extra Work.

## Article 7 - General Construction Provisions

### 7.1 Permits, Fees, Business License, and Taxes.

(A) **Permits, Fees, and City Business License.** Contractor must obtain and pay for all permits, fees, and licenses required to perform the Work, including a City business license. Contractor must cooperate with and provide notifications to all government agencies with jurisdiction over the Project, as may be required. Contractor must provide

City with copies of all records of permits and permit applications, payment of required fees, and any licenses required for the Work.

(B) **Taxes.** Contractor must pay for all taxes on labor, material, and equipment, except Federal Excise Tax to the extent that City is exempt from Federal Excise Tax.

**7.2 Temporary Facilities.** Contractor must provide, at Contractor's sole expense, any and all temporary facilities for the Project, including an onsite staging area for materials and equipment, a field office, sanitary facilities, utilities, storage, scaffolds, barricades, walkways, and any other temporary structure required to safely perform the Work along with any incidental utility services. The location of all temporary facilities must be approved by the City prior to installation. Temporary facilities must be safe and adequate for the intended use and installed and maintained in accordance with Laws and the Contract Documents. Contractor must fence and screen the Project site and, if applicable, any separate Worksites, including the staging area, and its operation must minimize inconvenience to neighboring properties. Additional provisions pertaining to temporary facilities may be included in the Specifications or Special Conditions.

(A) **Utilities.** Contractor must install and maintain the power, water, sewer, and all other utilities required for the Project site, including the piping, wiring, internet and wifi connections, and any related equipment necessary to maintain the temporary facilities.

(B) **Removal and Repair.** Contractor must promptly remove all such temporary facilities when they are no longer needed or upon completion of the Work, whichever comes first. Contractor must promptly repair any damage to City's property or to other property caused by the installation, use, or removal of the temporary facilities, and must promptly restore the property to its original or intended condition.

**7.3 Noninterference and Site Management.** Contractor must avoid interfering with City's use of its property at or adjacent to the Project site, including use of roadways, entrances, parking areas, walkways, and structures. Contractor must also minimize disruption of access to private property in the Project vicinity. Contractor must coordinate with affected property owners, tenants, and businesses, and maintain some vehicle and pedestrian access to their residences or properties at all times. Temporary access ramps, fencing or other measures must be provided as needed. Before blocking access to a private driveway or parking lot, Contractor must provide effective notice to the affected parties at least 48 hours in advance of the pending closure and allow them to remove vehicles. Private driveways, residences and parking lots must have access to a roadway during non-Work hours.

(A) **Offsite Acquisition.** Unless otherwise provided by City, Contractor must acquire, use, and dispose of, at its sole expense, any Worksites, licenses, easements, and temporary facilities necessary to access and perform the Work.

(B) **Offsite Staging Area and Field Office.** If additional space beyond the Project site is needed, such as for the staging area or the field office, Contractor may need to make arrangements with the nearby property owner(s) to secure the space. Before using or occupying any property owned by a third party, Contractor must provide City with a copy of the necessary license agreement, easement, or other written authorization from the property owner, together with a written release from the property owner holding City harmless from any related liability, in a form acceptable to the City Attorney.

(C) **Traffic Management.** Contractor must provide traffic management and traffic controls as specified in the Contract Documents, as required by Laws, and as otherwise

required to ensure public and worker safety, and to avoid interference with public or private operations or the normal flow of vehicular, bicycle, or pedestrian traffic.

- 7.4 Signs.** No signs may be displayed on or about City's property, except signage which is required by Laws or by the Contract Documents, without City's prior written approval as to size, design, and location.

**7.5 Project Site and Nearby Property Protections.**

(A) **General.** Contractor is responsible at all times, on a 24-hour basis and at its sole cost, for protecting the Work, the Project site, and the materials and equipment to be incorporated into the Work, until the City has accepted the Project, excluding any exceptions to acceptance, if any. Except as specifically authorized by City, Contractor must confine its operations to the area of the Project site indicated in the Plans and Specifications. Contractor is liable for any damage caused by Contractor or its Subcontractors to the Work, City's property, the property of adjacent or nearby property owners and the work or personal property of other contractors working for City, including damage related to Contractor's failure to adequately secure the Work or any Worksite.

(1) Subject to City's approval, Contractor will provide and install safeguards to protect the Work; any Worksite, including the Project site; City's real or personal property and the real or personal property of adjacent or nearby property owners, including plant and tree protections.

(2) City wastewater systems may not be interrupted. If the Work disrupts existing sewer facilities, Contractor must immediately notify City and establish a plan, subject to City's approval, to convey the sewage in closed conduits back into the sanitary sewer system. Sewage must not be permitted to flow in trenches or be covered by backfill.

(3) Contractor must remove with due care, and store at City's request, any objects or material from the Project site that City will salvage or reuse at another location.

(4) If directed by Engineer, Contractor must promptly repair or replace any property damage, as specified by the Engineer. However, acting in its sole discretion, City may elect to have the property damage remedied otherwise, and may deduct the cost to repair or replace the damaged property from payment otherwise due to Contractor.

(5) Contractor will not permit any structure or infrastructure to be loaded in a manner that will damage or endanger the integrity of the structure or infrastructure.

(B) **Securing Project Site.** After completion of Work each day, Contractor must secure the Project site and, to the extent feasible, make the area reasonably accessible to the public unless City approves otherwise. All excess materials and equipment not protected by approved traffic control devices must be relocated to the staging area or demobilized. Trench spoils must be hauled off the Project site daily and open excavations must be protected with steel plates. Contractor and Subcontractor personnel may not occupy or use the Project site for any purpose during non-Work hours, except as may be provided in the Contract Documents or pursuant to prior written authorization from City.

(C) **Unforeseen Conditions.** If Contractor encounters facilities, utilities, or other unknown conditions not shown on or reasonably inferable from the Plans or apparent from inspection of the Project site, Contractor must immediately notify the City and promptly submit a Request for Information to obtain further directions from the Engineer. Contractor must avoid taking any action which could cause damage to the facilities or utilities pending further direction from the Engineer. The Engineer's written response will be final and binding on Contractor. If the Engineer's subsequent direction to Contractor affects Contractor's cost or time to perform the Work, Contractor may submit a Change Order request as set forth in Article 6 above.

(D) **Support; Adjacent Properties.** Contractor must provide, install, and maintain all shoring, bracing, and underpinning necessary to provide support to City's property and adjacent properties and improvements thereon. Contractor must provide notifications to adjacent property owners as may be required by Laws. See also, Section 7.15, Trenching of Five Feet or More.

(E) **Notification of Property Damage.** Contractor must immediately notify the City of damage to any real or personal property resulting from Work on the Project. Contractor must immediately provide a written report to City of any such property damage in excess of \$500 (based on estimated cost to repair or replace) within 24 hours of the occurrence. The written report must include: (1) the location and nature of the damage, and the owner of the property, if known; (2) the name and address of each employee of Contractor or any Subcontractor involved in the damage; (3) a detailed description of the incident, including precise location, time, and names and contact information for known witnesses; and (4) a police or first responder report, if applicable. If Contractor is required to file an accident report with another government agency, Contractor will provide a copy of the report to City.

## 7.6 Materials and Equipment.

(A) **General.** Unless otherwise specified, all materials and equipment required for the Work must be new, free from defects, and of the best grade for the intended purpose, and furnished in sufficient quantities to ensure the proper and expeditious performance of the Work. Contractor must employ measures to preserve the specified quality and fitness of the materials and equipment. Unless otherwise specified, all materials and equipment required for the Work are deemed to include all components required for complete installation and intended operation and must be installed in accordance with the manufacturer's recommendations or instructions. Contractor is responsible for all shipping, handling, and storage costs associated with the materials and equipment required for the Work. Contractor is responsible for providing security and protecting the Work and all of the required materials, supplies, tools and equipment at Contractor's sole cost until City has formally accepted the Project as set forth in Section 11.1, Final Completion. Contractor will not assign, sell, mortgage, or hypothecate any materials or equipment for the Project, or remove any materials or equipment that have been installed or delivered.

(B) **City-Provided.** If the Work includes installation of materials or equipment to be provided by City, Contractor is solely responsible for the proper examination, handling, storage, and installation in accordance with the Contract Documents. Contractor must notify City of any defects discovered in City-provided materials or equipment, sufficiently in advance of scheduled use or installation to afford adequate time to procure replacement materials or equipment as needed. Contractor is solely responsible for any loss of or damage to such items which occurs while the items are in Contractor's custody

and control, the cost of which may be offset from the Contract Price and deducted from any payment(s) due to Contractor.

(C) **Intellectual Property Rights.** Contractor must, at its sole expense, obtain any authorization or license required for use of patented or copyright-protected materials, equipment, devices, or processes that are incorporated into the Work. Contractor's indemnity obligations in Article 4 apply to any claimed violation of intellectual property rights.

## 7.7 Substitutions.

(A) **"Or Equal."** Any Specification designating a material, product, or thing (collectively, "item") or service by specific brand or trade name, followed by the words "or equal," is intended only to indicate the quality and type of item or service desired, and Contractor may request use of any equal item or service. Unless otherwise stated in the Specifications, any reference to a specific brand or trade name for an item or service that is used solely for the purpose of describing the type of item or service desired, will be deemed to be followed by the words "or equal." A substitution will only be approved if it is a true "equal" item or service in every aspect of design, function, and quality, as determined by City, including dimensions, weight, maintenance requirements, durability, fit with other elements, and schedule impacts.

(B) **Request for Substitution.** A post-award request for substitution of an item or service must be submitted in writing to the Engineer for approval in advance, within the applicable time period provided in the Contract Documents. If no time period is specified, the substitution request may be submitted any time within 35 days after the date of award of the Contract, or sufficiently in advance of the time needed to avoid delay of the Work, whichever is earlier.

(C) **Substantiation.** Any available data substantiating the proposed substitute as an equal item or service must be submitted with the written request for substitution. Contractor's failure to timely provide all necessary substantiation, including any required test results as soon as they are available, is grounds for rejection of the proposed substitution, without further review.

(D) **Burden of Proving Equality.** Contractor has the burden of proving the equality of the proposed substitution at Contractor's sole cost. City has sole discretion to determine whether a proposed substitution is equal, and City's determination is final.

(E) **Approval or Rejection.** If the proposed substitution is approved, Contractor is solely responsible for any additional costs or time associated with the substituted item or service. If the proposed substitution is rejected, Contractor must, without delay, install the item or use the service as specified by City.

(F) **Contractor's Obligations.** City's approval of a proposed substitution will not relieve Contractor from any of its obligations under the Contract Documents. In the event Contractor makes an unauthorized substitution, Contractor will be solely responsible for all resulting cost impacts, including the cost of removal and replacement and the impact to other design elements.

## 7.8 Testing and Inspection.

(A) **General.** All materials, equipment, and workmanship used in the Work are subject to inspection and testing by City at all times and at all locations during

construction and/or fabrication, including at any Worksite, shops, and yards. All manufacturers' application or installation instructions must be provided to the Inspector at least ten days prior to the first such application or installation. Contractor must, at all times, make the Work available for testing or inspection. Neither City's inspection or testing of Work, nor its failure to do so, operate to waive or limit Contractor's duty to complete the Work in accordance with the Contract Documents.

(B) **Scheduling and Notification.** Contractor must cooperate with City in coordinating the inspections and testing. Contractor must submit samples of materials, at Contractor's expense, and schedule all tests required by the Contract Documents in time to avoid any delay to the progress of the Work. Contractor must notify the Engineer no later than noon of the Working Day before any inspection or testing and must provide timely notice to the other necessary parties as specified in the Contract Documents. If Contractor schedules an inspection or test beyond regular Work hours, or on a Saturday, Sunday, or recognized City holiday, Contractor must notify the Engineer at least two Working Days in advance for approval. If approved, Contractor must reimburse City for the cost of the overtime inspection or testing. Such costs, including the City's hourly costs for required personnel, may be deducted from payments otherwise due to Contractor.

(C) **Responsibility for Costs.** City will bear the initial cost of inspection and testing to be performed by independent consultants retained by City, subject to the following exceptions:

- (1) Contractor will be responsible for the costs of any subsequent inspections or tests which are required to substantiate compliance with the Contract Documents, and any associated remediation costs.
- (2) Contractor will be responsible for inspection costs, at City's hourly rates, for inspection time lost because the Work is not ready, or Contractor fails to appear for a scheduled inspection.
- (3) If any portion of the Work that is subject to inspection or testing is covered or concealed by Contractor prior to the inspection or testing, Contractor will bear the cost of making that portion of the Work available for the inspection or testing required by the Contract Documents, and any associated repair or remediation costs.
- (4) Contractor is responsible for properly shoring all compaction test sites deeper than five feet below grade, as required under Section 7.15 below.
- (5) Any Work or material that is defective or fails to comply with the requirements of the Contract Documents must be promptly repaired, removed, replaced, or corrected by Contractor, at Contractor's sole expense, even if that Work or material was previously inspected or included in a progress payment.

(D) **Contractor's Obligations.** Contractor is solely responsible for any delay occasioned by remediation of defective or noncompliant Work or material. Inspection or testing of the Work does not in any way relieve Contractor of its obligations to perform the Work as specified. Any Work done without the inspection(s) or testing required by the Contract Documents will be subject to rejection by City.

(E) **Distant Locations.** If required off-site testing or inspection must be conducted at a location more than 100 miles from the Project site, Contractor is solely responsible for the additional travel costs required for testing and/or inspection at such locations.

(F) **Final Inspection.** The provisions of this Section 7.8 also apply to final inspection under Article 11, Completion and Warranty Provisions.

**7.9 Project Site Conditions and Maintenance.** Contractor must at all times, on a 24-hour basis and at its sole cost, maintain the Project site and staging and storage areas in clean, neat, and sanitary condition and in compliance with all Laws pertaining to safety, air quality, and dust control. Adequate toilets must be provided, and properly maintained and serviced for all workers on the Project site, located in a suitably secluded area, subject to City's prior approval. Contractor must also, on a daily basis and at its sole cost, remove and properly dispose of the debris and waste materials from the Project site.

(A) **Air Emissions Control.** Contractor must not discharge smoke or other air contaminants into the atmosphere in violation of any Laws. Contractor must comply with all Laws, including the California Air Resources Board's In-Use Off-Road Diesel-Fueled Fleets Regulation (13 CCR § 2449 et seq.).

(B) **Dust and Debris.** Contractor must minimize and confine dust and debris resulting from the Work. Contractor must abate dust nuisance by cleaning, sweeping, and immediately sprinkling with water excavated areas of dirt or other materials prone to cause dust, and within one hour after the Engineer notifies Contractor that an airborne nuisance exists. The Engineer may direct that Contractor provide an approved water-spraying truck for this purpose. If water is used for dust control, Contractor will only use the minimum necessary. Contractor must take all necessary steps to keep waste water out of streets, gutters, or storm drains. See Section 7.19, Environmental Control. If City determines that the dust control is not adequate, City may have the work done by others and deduct the cost from the Contract Price. Contractor will immediately remove any excess excavated material from the Project site and any dirt deposited on public streets.

(C) **Clean up.** Before discontinuing Work in an area, Contractor must clean the area and remove all debris and waste along with the construction equipment, tools, machinery, and surplus materials.

(1) Except as otherwise specified, all excess Project materials, and the materials removed from existing improvements on the Project site with no salvage value or intended reuse by City, will be Contractor's property.

(2) Hauling trucks and other vehicles leaving the Project site must be cleaned of exterior mud or dirt before traveling on City streets. Materials and loose debris must be delivered and loaded to prevent dropping materials or debris. Contractor must immediately remove spillage from hauling on any publicly traveled way. Streets affected by Work on the Project must be kept clean by street sweeping.

(D) **Disposal.** Contractor must dispose of all Project debris and waste materials in a safe and legal manner. Contractor may not burn or bury waste materials on the Project site. Contractor will not allow any dirt, refuse, excavated material, surplus concrete or mortar, or any associated washings, to be disposed of onto streets, into manholes or into the storm drain system.

(E) **Completion.** At the completion of the Work, Contractor must remove from the Project site all of its equipment, tools, surplus materials, waste materials and debris, presenting a clean and neat appearance. Before demobilizing from the Project site, Contractor must ensure that all surfaces are cleaned, sealed, waxed, or finished as applicable, and that all marks, stains, paint splatters, and the like have been properly

removed from the completed Work and the surrounding areas. Contractor must ensure that all parts of the construction are properly joined with the previously existing and adjacent improvements and conditions. Contractor must provide all cutting, fitting and patching needed to accomplish that requirement. Contractor must also repair or replace all existing improvements that are damaged or removed during the Work, both on and off the Project site, including curbs, sidewalks, driveways, fences, signs, landscaping, utilities, street surfaces and structures. Repairs and replacements must be at least equal to the previously existing improvements, and the condition, finish and dimensions must match the previously existing improvements. Contractor must restore to original condition all property or items that are not designated for alteration under the Contract Documents and leave each Worksite clean and ready for occupancy or use by City.

(F) **Non-Compliance.** If Contractor fails to comply with its maintenance and cleanup obligations or any City clean up order, City may, acting in its sole discretion, elect to suspend the Work until the condition(s) is corrected with no increase in the Contract Time or Contract Price, or undertake appropriate cleanup measures without further notice and deduct the cost from any amounts due or to become due to Contractor.

**7.10 Instructions and Manuals.** Contractor must provide to City three copies each of all instructions and manuals required by the Contract Documents, unless otherwise specified. These must be complete as to drawings, details, parts lists, performance data, and other information that may be required for City to easily maintain and service the materials and equipment installed for this Project.

(A) **Submittal Requirements.** The instructions and manuals, along with any required guarantees, must be delivered to City for review prior to requesting final inspection pursuant to Section 11.1(A), unless otherwise specified.

(B) **Training.** Contractor or its Subcontractors must train City's personnel in the operation and maintenance of any complex equipment or systems as a condition precedent to Final Completion, if required in the Contract Documents.

**7.11 As-built Drawings.** Contractor and its Subcontractors must prepare and maintain at the Project site a detailed, complete and accurate as-built set of the Plans which will be used solely for the purpose of recording changes made in any portion of the original Plans in order to create accurate record drawings at the end of the Project.

(A) **Duty to Update.** The as-built drawings must be updated as changes occur, on a daily basis if necessary. City may withhold the estimated cost for City to have the as-built drawings prepared from payments otherwise due to Contractor, until the as-built drawings are brought up to date to the satisfaction of City. Actual locations to scale must be identified on the as-built drawings for all runs of mechanical and electrical work, including all site utilities installed underground, in walls, floors, or otherwise concealed. Deviations from the original Plans must be shown in detail. The exact location of all main runs, whether piping, conduit, ductwork or drain lines, must be shown by dimension and elevation. The location of all buried pipelines, appurtenances, or other improvements must be represented by coordinates and by the horizontal distance from visible above-ground improvements.

(B) **Final Completion.** Contractor must verify that all changes in the Work are depicted in the as-built drawings and must deliver the complete set of as-built drawings to the Engineer for review and acceptance as a condition precedent to Final Completion and Final Payment.

## 7.12 Existing Utilities.

(A) **General.** The Work may be performed in developed, urban areas with existing utilities, both above and below ground, including utilities identified in the Contract Documents or in other informational documents or records. Contractor must take due care to locate identified or reasonably identifiable utilities before proceeding with trenching, excavation, or any other activity that could damage or disrupt existing utilities. This may include excavation with small equipment, potholing, or hand excavation, and, if practical, using white paint or other suitable markings to delineate the area to be excavated. Except as otherwise provided herein, Contractor will be responsible for costs resulting from damage to identified or reasonably identifiable utilities due to Contractor's negligence or failure to comply with the Contract Documents, including the requirements in this Article 7.

(B) **Unidentified Utilities.** Pursuant to Government Code § 4215, if, during the performance of the Work, Contractor discovers utility facilities not identified by City in the Contract Documents, Contractor must immediately provide written notice to City and the utility. City assumes responsibility for the timely removal, relocation, or protection of existing main or trunkline utility facilities located on the Project site if those utilities are not identified in the Contract Documents. Contractor will be compensated in accordance with the provisions of the Contract Documents for the costs of locating, repairing damage not due to Contractor's failure to exercise reasonable care, and removing or relocating utility facilities not indicated in the Plans or Specifications with reasonable accuracy, and for equipment on the Project necessarily idled during such work. Contractor will not be assessed liquidated damages for delay in completion of the Work, to the extent the delay was caused by City's failure to provide for removal or relocation of the utility facilities.

7.13 **Notice of Excavation.** Contractor must comply with all applicable requirements in Government Code § 4216 et seq., which are incorporated by reference herein.

7.14 **Trenching and Excavations of Four Feet or More.** As required by Public Contract Code § 7104, if the Work includes digging trenches or other excavations that extend deeper than four feet below the surface, the provisions in this Section apply to the Work and the Project.

(A) **Duty to Notify.** Contractor must promptly, and before the following conditions are disturbed, provide written notice to City if Contractor finds any of the following conditions:

(1) Material that Contractor believes may be a hazardous waste, as defined in § 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with the provisions of existing Laws;

(2) Subsurface or latent physical conditions at the Project site differing from those indicated by information about the Project site made available to bidders prior to the deadline for submitting bids; or

(3) Unknown physical conditions at the Project site of any unusual nature, materially different from those ordinarily encountered and generally recognized as inherent in work of the character required by the Contract Documents.

(B) **City Investigation.** City will promptly investigate the conditions and if City finds that the conditions materially differ from those indicated, apparent, or reasonably inferred

from information about the Project site made available to bidders, or involve hazardous waste, and cause a decrease or increase in Contractor's cost of, or the time required for, performance of any part of the Work, City will issue a Change Order.

(C) **Disputes.** In the event that a dispute arises between City and Contractor regarding any of the conditions specified in subsection (B) above, or the terms of a Change Order issued by City, Contractor will not be excused from completing the Work within the Contract Time, but must proceed with all Work to be performed under the Contract. Contractor will retain any and all rights provided either by the Contract or by Laws which pertain to the resolution of disputes between Contractor and City.

**7.15 Trenching of Five Feet or More.** As required by Labor Code § 6705, if the Contract Price exceeds \$25,000 and the Work includes the excavation of any trench or trenches of five feet or more in depth, a detailed plan must be submitted to City for acceptance in advance of the excavation. The detailed plan must show the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation. If the plan varies from the shoring system standards, it must be prepared by a California registered civil or structural engineer. Use of a shoring, sloping, or protective system less effective than that required by the Construction Safety Orders is prohibited.

**7.16 New Utility Connections.** Except as otherwise specified, City will pay connection charges and meter costs for new permanent utilities required by the Contract Documents, if any. Contractor must notify City sufficiently in advance of the time needed to request service from each utility provider so that connections and services are initiated in accordance with the Project schedule.

**7.17 Lines and Grades.** Contractor is required to use any benchmark provided by the Engineer. Unless otherwise specified in the Contract Documents, Contractor must provide all lines and grades required to execute the Work. Contractor must also provide, preserve, and replace if necessary, all construction stakes required for the Project. All stakes or marks must be set by a California licensed surveyor or a California registered civil engineer. Contractor must notify the Engineer of any discrepancies found between Contractor's staking and grading and information provided by the Contract Documents. Upon completion, all Work must conform to the lines, elevations, and grades shown in the Plans, including any changes directed by a Change Order.

**7.18 Historic or Archeological Items.**

(A) **Contractor's Obligations.** Contractor must ensure that all persons performing Work at the Project site are required to immediately notify the Project Manager, upon discovery of any potential historic or archeological items, including historic or prehistoric ruins, a burial ground, archaeological or vertebrate paleontological site, including fossilized footprints or other archeological, paleontological or historical feature on the Project site (collectively, "Historic or Archeological Items").

(B) **Discovery; Cessation of Work.** Upon discovery of any potential Historic or Archeological Items, Work must be stopped within an 85-foot radius of the find and may not resume until authorized in writing by City. If required by City, Contractor must assist in protecting or recovering the Historic or Archeological Items, with any such assistance to be compensated as Extra Work on a time and materials basis under Article 6, Contract Modification. At City's discretion, a suspension of Work required due to discovery of

Historic or Archeological Items may be treated as Excusable Delay pursuant to Article 5, or as a suspension for convenience under Article 13.

**7.19 Environmental Control.** Contractor must not pollute any drainage course or its tributary inlets with fuels, oils, bitumens, acids, insecticides, herbicides or other harmful materials. Contractor must prevent the release of any hazardous material or hazardous waste into the soil or groundwater, and prevent the unlawful discharge of pollutants into City's storm drain system and watercourses as required below. Contractor and its Subcontractors must at all times in the performance of the Work comply with all Laws concerning pollution of waterways.

(A) **Stormwater Permit.** Contractor must comply with all applicable conditions of the State Water Resources Control Board National Pollutant Discharge Elimination System General Permit for Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction Activity ("Stormwater Permit").

(B) **Contractor's Obligations.** If required for the Work, a copy of the Stormwater Permit is on file in City's principal administrative offices, and Contractor must comply with it without adjustment of the Contract Price or the Contract Time. Contractor must timely and completely submit required reports and monitoring information required by the conditions of the Stormwater Permit. Contractor also must comply with all other Laws governing discharge of stormwater, including applicable municipal stormwater management programs.

**7.20 Noise Control.** Contractor must comply with all applicable noise control Laws. Noise control requirements apply to all equipment used for the Work or related to the Work, including trucks, transit mixers or transient equipment that may or may not be owned by Contractor.

**7.21 Mined Materials.** Pursuant to Public Contract Code § 20676, Contractor will not purchase any sand, gravel, or other minerals for the Work from an operation subject to the Surface Mining and Reclamation Act of 1975 (Public Resources Code § 2710 et seq.) unless the Contractor certifies, under penalty of perjury, that the minerals are from a mining operation included on the AB 3098 List, which may be accessed online at: <https://www.conservation.ca.gov/smgb/Pages/AB-3098-List.aspx>.

## Article 8 - Payment

**8.1 Schedule of Values.** Prior to submitting its first application for payment, Contractor must prepare and submit to the Project Manager a schedule of values apportioned to the various divisions and phases of the Work, including mobilization and demobilization. If a Bid Schedule was submitted with Contractor's bid, the amounts in the schedule of values must be consistent with the Bid Schedule. Each line item contained in the schedule of values must be assigned a value such that the total of all items equals the Contract Price. The items must be sufficiently detailed to enable accurate evaluation of the percentage of completion claimed in each application for payment, and the assigned value consistent with any itemized or unit pricing submitted with Contractor's bid.

(A) **Measurements for Unit Price Work.** Materials and items of Work to be paid for on the basis of unit pricing will be measured according to the methods specified in the Contract Documents.

(B) **Deleted or Reduced Work.** Contractor will not be compensated for Work that City has deleted or reduced in scope, except for any labor, material, or equipment costs for such Work that Contractor reasonably incurred before Contractor learned that the Work could be deleted or reduced. Contractor will only be compensated for those actual, direct and documented costs incurred, and will not be entitled to any mark up for overhead or lost profits.

**8.2 Progress Payments.** Following the last day of each month, or as otherwise required by the Special Conditions or Specifications, Contractor will submit to the Project Manager a monthly application for payment for Work performed during the preceding month based on the estimated value of the Work performed during that preceding month.

(A) **Application for Payment.** Each application for payment must be itemized to include labor, materials, and equipment incorporated into the Work, and materials and equipment delivered to the Project site, as well as authorized and approved Change Orders. Each payment application must be supported by the unit prices submitted with Contractor's Bid Schedule and/or schedule of values and any other substantiating data required by the Contract Documents.

(B) **Payment of Undisputed Amounts.** City will pay the undisputed amount due within 30 days after Contractor has submitted a complete and accurate payment application, subject to Public Contract Code § 20104.50. City will deduct a percentage from each progress payment as retention, as set forth in Section 8.5, below, and may deduct or withhold additional amounts as set forth in Section 8.3, below.

**8.3 Adjustment of Payment Application.** City may adjust or reject the amount requested in a payment application, including application for Final Payment, in whole or in part, if the amount requested is disputed or unsubstantiated. Contractor will be notified in writing of the basis for the modification to the amount requested. City may also deduct or withhold from payment otherwise due based upon any of the circumstances and amounts listed below. Sums withheld from payment otherwise due will be released when the basis for that withholding has been remedied and no longer exists.

(A) For Contractor's unexcused failure to perform the Work as required by the Contract Documents, including correction or completion of punch list items, City may withhold or deduct an amount based on the City's estimated cost to correct or complete the Work.

(B) For loss or damage caused by Contractor or its Subcontractors arising out of or relating to performance of the Work or any failure to protect the Project site, City may deduct an amount based on the estimated cost to repair or replace.

(C) For Contractor's failure to pay its Subcontractors and suppliers when payment is due, City may withhold an amount equal to the total of past due payments and may opt to pay that amount separately via joint check pursuant to Section 8.6(B), Joint Checks.

(D) For Contractor's failure to timely correct rejected, nonconforming, or defective Work, City may withhold or deduct an amount based on the City's estimated cost to correct or complete the Work.

(E) For any unreleased stop notice, City may withhold 125% of the amount claimed.

(F) For Contractor's failure to submit any required schedule or schedule update in the manner specified or within the time specified in the Contract Documents, City may

withhold an amount equal to five percent of the total amount requested until Contractor complies with its schedule submittal obligations.

(G) For Contractor's failure to maintain or submit as-built documents in the manner specified or within the time specified in the Contract Documents, City may withhold or deduct an amount based on the City's cost to prepare the as-builts.

(H) For Work performed without Shop Drawings that have been accepted by City, when accepted Shop Drawings are required before proceeding with the Work, City may deduct an amount based on the estimated cost to correct unsatisfactory Work or diminution in value.

(I) For fines, payments, or penalties assessed under the Labor Code, City may deduct from payments due to Contractor as required by Laws and as directed by the Division of Labor Standards Enforcement.

(J) For any other fines, payments, or penalties assessed against the City relating to Contractor's acts or omissions, including violations of Laws, City may withhold or deduct such amounts from payment otherwise due to Contractor.

(K) For any other costs or charges that may be withheld or deducted from payments to Contractor, as provided in the Contract Documents, including liquidated damages, City may withhold or deduct such amounts from payment otherwise due to Contractor.

**8.4 Early Occupancy.** Neither City's payment of progress payments nor its partial or full use or occupancy of the Project constitutes acceptance of any part of the Work.

**8.5 Retention.** City will retain five percent of the full amount due on each progress payment (i.e., the amount due before any withholding or deductions pursuant to Section 8.3, Adjustment of Payment Application), or the percentage stated in the Notice Inviting Bids, whichever is greater, as retention to ensure full and satisfactory performance of the Work. Contractor is not entitled to any reduction in the rate of withholding at any time, nor to release of any retention before 35 days following City's recordation of the Notice of Completion, subject to the terms of Public Contract Code § 7107.

(A) **Substitution of Securities.** As provided by Public Contract Code § 22300, Contractor may request in writing that it be allowed, at its sole expense, to substitute securities for the retention withheld by City. Any escrow agreement entered into pursuant to this provision must fully comply with Public Contract Code § 22300 and will be subject to approval as to form by City's legal counsel. If City exercises its right to draw upon such securities in the event of default pursuant to section (7) of the statutory Escrow Agreement for Security Deposits in Lieu of Retention, pursuant to subdivision (g) of Public Contract Code § 22300 ("Escrow Agreement"), and if Contractor disputes that it is in default, its sole remedy is to comply with the dispute resolution procedures in Article 12 and the provisions therein. It is agreed that for purposes of this paragraph, an event of default includes City's rights pursuant to these Contract Documents to withhold or deduct sums from retention, including withholding or deduction for liquidated damages, incomplete or defective Work, stop payment notices, or backcharges. It is further agreed that if any individual authorized to give or receive written notice on behalf of a party pursuant to section (10) of the Escrow Agreement are unavailable to give or receive notice on behalf of that party due to separation from employment, retirement, death, or other circumstances, the successor or delegee of the named individual is deemed to be the individual authorized to give or receive notice pursuant to section (10) of the Escrow Agreement.

(B) **Release of Undisputed Retention.** All undisputed retention, less any amounts that may be assessed as liquidated damages, retained for stop notices, or otherwise withheld pursuant to Section 8.3, Adjustment of Payment Application, will be released as Final Payment to Contractor no sooner than 35 days following recordation of the notice of completion, and no later than 60 days following acceptance of the Project by City's governing body or authorized designee pursuant to Section 11.1(C), Acceptance, or, if the Project has not been accepted, no later than 60 days after the Project is otherwise considered complete pursuant to Public Contract Code § 7107(c).

**8.6 Payment to Subcontractors and Suppliers.** Each month, Contractor must promptly pay each Subcontractor and supplier the value of the portion of labor, materials, and equipment incorporated into the Work or delivered to the Project site by the Subcontractor or supplier during the preceding month. Such payments must be made in accordance with the requirements of Laws pertaining to such payments, and those of the Contract Documents and applicable subcontract or supplier contract.

(A) **Withholding for Stop Notice.** Pursuant to Civil Code § 9358, City will withhold 125% of the amount claimed by an unreleased stop notice, a portion of which may be retained by City for the costs incurred in handling the stop notice claim, including attorneys' fees and costs, as authorized by law.

(B) **Joint Checks.** City reserves the right, acting in its sole discretion, to issue joint checks made payable to Contractor and a Subcontractor or supplier, if City determines this is necessary to ensure fair and timely payment for a Subcontractor or supplier who has provided services or goods for the Project. As a condition to release of payment by a joint check, the joint check payees may be required to execute a joint check agreement in a form provided or approved by the City Attorney's Office. The joint check payees will be jointly and severally responsible for the allocation and disbursement of funds paid by joint check. Payment by joint check will not be construed to create a contractual relationship between City and a Subcontractor or supplier of any tier beyond the scope of the joint check agreement.

**8.7 Final Payment.** Contractor's application for Final Payment must comply with the requirements for submitting an application for a progress payment as stated in Section 8.2, above. Corrections to previous progress payments, including adjustments to estimated quantities for unit priced items, may be included in the Final Payment. If Contractor fails to submit a timely application for Final Payment, City reserves the right to unilaterally process and issue Final Payment without an application from Contractor in order to close out the Project. For the purposes of determining the deadline for Claim submission pursuant to Article 12, the date of Final Payment is deemed to be the date that City acts to release undisputed retention as final payment to Contractor, or otherwise provides written notice to Contractor of Final Payment or that no undisputed funds remain available for Final Payment due to offsetting withholdings or deductions pursuant to Section 8.3, Adjustment of Payment Application. If the amount due from Contractor to City exceeds the amount of Final Payment, City retains the right to recover the balance from Contractor or its sureties.

**8.8 Release of Claims.** City may, at any time, require that payment of the undisputed portion of any progress payment or Final Payment be contingent upon Contractor furnishing City with a written waiver and release of all claims against City arising from or related to the portion of Work covered by those undisputed amounts subject to the limitations of Public Contract Code § 7100. Any disputed amounts may be specifically excluded from the release.

- 8.9 Warranty of Title.** Contractor warrants that title to all work, materials, or equipment incorporated into the Work and included in a request for payment will pass over to City free of any claims, liens, or encumbrances upon payment to Contractor.

## Article 9 - Labor Provisions

- 9.1 Discrimination Prohibited.** Discrimination against any prospective or present employee engaged in the Work on grounds of race, color, ancestry, national origin, ethnicity, religion, sex, sexual orientation, age, disability, or marital status is strictly prohibited. Contractor and its Subcontractors are required to comply with all applicable Laws prohibiting discrimination, including the California Fair Employment and Housing Act (Govt. Code § 12900 et seq.), Government Code § 11135, and Labor Code §§ 1735, 1777.5, 1777.6, and 3077.5.

**9.2 Labor Code Requirements.**

(A) **Eight Hour Day.** Pursuant to Labor Code § 1810, eight hours of labor constitute a legal day's work under this Contract.

(B) **Penalty.** Pursuant to Labor Code § 1813, Contractor will forfeit to City as a penalty, the sum of \$25.00 for each day during which a worker employed by Contractor or any Subcontractor is required or permitted to work more than eight hours in any one calendar day or more than 40 hours per calendar week, except if such workers are paid overtime under Labor Code § 1815.

(C) **Apprentices.** Contractor is responsible for compliance with the requirements governing employment and payment of apprentices, as set forth in Labor Code § 1777.5, which is fully incorporated by reference.

(D) **Notices.** Pursuant to Labor Code § 1771.4, Contractor is required to post all job site notices prescribed by Laws.

- 9.3 Prevailing Wages.** Each worker performing Work under this Contract that is covered under Labor Code §§ 1720, 1720.3, or 1720.9, including cleanup at the Project site, must be paid at a rate not less than the prevailing wage as defined in §§ 1771 and 1774 of the Labor Code. The prevailing wage rates are on file with the City and available online at <http://www.dir.ca.gov/dlsr>. Contractor must post a copy of the applicable prevailing rates at the Project site.

(A) **Penalties.** Pursuant to Labor Code § 1775, Contractor and any Subcontractor will forfeit to City as a penalty up to \$200.00 for each calendar day, or portion thereof, for each worker paid less than the applicable prevailing wage rate. Contractor must also pay each worker the difference between the applicable prevailing wage rate and the amount actually paid to that worker.

(B) **Federal Requirements.** If this Project is subject to federal prevailing wage requirements in addition to California prevailing wage requirements, Contractor and its Subcontractors are required to pay the higher of the currently applicable state or federal prevailing wage rates.

- 9.4 Payroll Records.** Contractor must comply with the provisions of Labor Code §§ 1771.4, 1776, and 1812 and all implementing regulations, which are fully incorporated by this

reference, including requirements for monthly electronic submission of payroll records to the DIR.

(A) **Contractor and Subcontractor Obligations.** Contractor and each Subcontractor must keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed in connection with the Work. Each payroll record must 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; and
- (2) Contractor or the Subcontractor has complied with the requirements of Labor Code §§ 1771, 1811, and 1815 for any Work performed by its employees on the Project.

(B) **Certified Record.** A certified copy of an employee's payroll record must be made available for inspection or furnished to the employee or his or her authorized representative on request, to City, to the Division of Labor Standards Enforcement, to the Division of Apprenticeship Standards of the DIR, and as further required by the Labor Code.

(C) **Enforcement.** Upon notice of noncompliance with Labor Code § 1776, Contractor or Subcontractor has ten days in which to comply with the requirements of this section. If Contractor or Subcontractor fails to do so within the ten-day period, Contractor or Subcontractor will forfeit a penalty of \$100.00 per day, or portion thereof, for each worker for whom compliance is required, until strict compliance is achieved. Upon request by the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement, these penalties will be withheld from payments then due to Contractor.

**9.5 Labor Compliance.** Pursuant to Labor Code § 1771.4, the Contract for this Project is subject to compliance monitoring and enforcement by the DIR.

## **Article 10 - Safety Provisions**

**10.1 Safety Precautions and Programs.** Contractor and its Subcontractors are fully responsible for safety precautions and programs, and for the safety of persons and property in the performance of the Work. Contractor and its Subcontractors must at all times comply with all applicable health and safety Laws and seek to avoid injury, loss, or damage to persons or property by taking reasonable steps to protect its employees and other persons at any Worksite, materials and equipment stored on or off site, and property at or adjacent to any Worksite.

(A) **Reporting Requirements.** Contractor must immediately notify the City of any death, serious injury or illness resulting from Work on the Project. Contractor must immediately provide a written report to City of each recordable accident or injury occurring at any Worksite within 24 hours of the occurrence. The written report must include: (1) the name and address of the injured or deceased person; (2) the name and address of each employee of Contractor or of any Subcontractor involved in the incident; (3) a detailed description of the incident, including precise location, time, and names and contact information for known witnesses; and (4) a police or first responder report, if

applicable. If Contractor is required to file an accident report with a government agency, Contractor will provide a copy of the report to City.

(B) **Legal Compliance.** Contractor's safety program must comply with the applicable legal and regulatory requirements. Contractor must provide City with copies of all notices required by Laws.

(C) **Contractor's Obligations.** Any damage or loss caused by Contractor arising from the Work which is not insured under property insurance must be promptly remedied by Contractor.

(D) **Remedies.** If City determines, in its sole discretion, that any part of the Work or Project site is unsafe, City may, without assuming responsibility for Contractor's safety program, require Contractor or its Subcontractor to cease performance of the Work or to take corrective measures to City's satisfaction. If Contractor fails to promptly take the required corrective measures, City may perform them and deduct the cost from the Contract Price. Contractor agrees it is not entitled to submit a Claim for damages, for an increase in Contract Price, or for a change in Contract Time based on Contractor's compliance with City's request for corrective measures pursuant to this provision.

**10.2 Hazardous Materials.** Unless otherwise specified in the Contract Documents, this Contract does not include the removal, handling, or disturbance of any asbestos or other Hazardous Materials. If Contractor encounters materials on the Project site that Contractor reasonably believes to be asbestos or other Hazardous Materials, and the asbestos or other Hazardous Materials have not been rendered harmless, Contractor may continue Work in unaffected areas reasonably believed to be safe, but must immediately cease work on the area affected and report the condition to City. No asbestos, asbestos-containing products or other Hazardous Materials may be used in performance of the Work.

**10.3 Material Safety.** Contractor is solely responsible for complying with § 5194 of Title 8 of the California Code of Regulations, including by providing information to Contractor's employees about any hazardous chemicals to which they may be exposed in the course of the Work. A hazard communication program and other forms of warning and training about such exposure must be used. Contractor must also maintain Safety Data Sheets ("SDS") at the Project site, as required by Laws, for materials or substances used or consumed in the performance of the Work. The SDS will be accessible and available to Contractor's employees, Subcontractors, and City.

(A) **Contractor Obligations.** Contractor is solely responsible for the proper delivery, handling, use, storage, removal, and disposal of all materials brought to the Project site and/or used in the performance of the Work. Contractor must notify the Engineer if a specified product or material cannot be used safely.

(B) **Labeling.** Contractor must ensure proper labeling on any material brought onto the Project site so that any persons working with or in the vicinity of the material may be informed as to the identity of the material, any potential hazards, and requirements for proper handling, protections, and disposal.

**10.4 Hazardous Condition.** Contractor is solely responsible for determining whether a hazardous condition exists or is created during the course of the Work, involving a risk of bodily harm to any person or risk of damage to any property. If a hazardous condition exists or is created, Contractor must take all precautions necessary to address the condition and ensure that the Work progresses safely under the circumstances.

Hazardous conditions may result from, but are not limited to, use of specified materials or equipment, the Work location, the Project site condition, the method of construction, or the way any Work must be performed.

- 10.5 Emergencies.** In an emergency affecting the safety or protection of persons, Work, or property at or adjacent to any Worksite, Contractor must take reasonable and prompt actions to prevent damage, injury, or loss, without prior authorization from the City if, under the circumstances, there is inadequate time to seek prior authorization from the City.

## Article 11 - Completion and Warranty Provisions

### 11.1 Final Completion.

(A) **Final Inspection and Punch List.** When the Work required by this Contract is fully performed, Contractor must provide written notification to City requesting final inspection. The Engineer will schedule the date and time for final inspection, which must include Contractor's primary representative for this Project and its superintendent. Based on that inspection, City will prepare a punch list of any items that are incomplete, missing, defective, incorrectly installed, or otherwise not compliant with the Contract Documents. The punch list to Contractor will specify the time by which all of the punch list items must be completed or corrected. The punch list may include City's estimated cost to complete each punch list item if Contractor fails to do so within the specified time. The omission of any non-compliant item from a punch list will not relieve Contractor from fulfilling all requirements of the Contract Documents. Contractor's failure to complete any punch list item within the time specified in the punch list will not waive or abridge its warranty obligations for any such items that must be completed by the City or by a third party retained by the City due to Contractor's failure to timely complete any such outstanding item.

(B) **Requirements for Final Completion.** Final Completion will be achieved upon completion or correction of all punch list items, as verified by City's further inspection, and upon satisfaction of all other Contract requirements, including any commissioning required under the Contract Documents and submission of all final submittals, including instructions and manuals as required under Section 7.10, and complete, final as-built drawings as required under Section 7.11, all to City's satisfaction.

(C) **Acceptance.** The Project will be considered accepted upon City Council action during a public meeting to accept the Project, unless the Engineer is authorized to accept the Project, in which case the Project will be considered accepted upon the date of the Engineer's issuance of a written notice of acceptance. In order to avoid delay of Project close out, the City may elect, acting in its sole discretion, to accept the Project as complete subject to exceptions for punch list items that are not completed within the time specified in the punch list.

(D) **Final Payment and Release of Retention.** Final Payment and release of retention, less any sums withheld pursuant to the provisions of the Contract Documents, will not be made sooner than 35 days after recordation of the notice of completion. If Contractor fails to complete all of the punch list items within the specified time, City may withhold up to 150% of City's estimated cost to complete each of the remaining items from Final Payment and may use the withheld retention to pay for the costs to self-perform the outstanding items or to retain a third party to complete any such outstanding punch list item.

## 11.2 Warranty.

(A) **General.** Contractor warrants that all materials and equipment will be new unless otherwise specified, of good quality, in conformance with the Contract Documents, and free from defective workmanship and materials. Contractor further warrants that the Work will be free from material defects not intrinsic in the design or materials required in the Contract Documents. Contractor warrants that materials or items incorporated into the Work comply with the requirements and standards in the Contract Documents, including compliance with Laws, and that any Hazardous Materials encountered or used were handled as required by Laws. At City's request, Contractor must furnish satisfactory evidence of the quality and type of materials and equipment furnished. Contractor's warranty does not extend to damage caused by normal wear and tear, or improper use or maintenance.

(B) **Warranty Period.** Contractor's warranty must guarantee its Work for a period of one year from the date of Project acceptance (the "Warranty Period"), except when a longer guarantee is provided by a supplier or manufacturer or is required by the Specifications or Special Conditions. Contractor must obtain from its Subcontractors, suppliers and manufacturers any special or extended warranties required by the Contract Documents.

(C) **Warranty Documents.** As a condition precedent to Final Completion, Contractor must supply City with all warranty and guarantee documents relevant to equipment and materials incorporated into the Work and guaranteed by their suppliers or manufacturers.

(D) **Subcontractors.** The warranty obligations in the Contract Documents apply to Work performed by Contractor and its Subcontractors, and Contractor agrees to be co-guarantor of such Work.

(E) **Contractor's Obligations.** Upon written notice from City to Contractor of any defect in the Work discovered during the Warranty Period, Contractor or its responsible Subcontractor must promptly correct the defective Work at its own cost. Contractor's obligation to correct defects discovered during the Warranty Period will continue past the expiration of the Warranty Period as to any defects in Work for which Contractor was notified prior to expiration of the Warranty Period. Work performed during the Warranty Period ("Warranty Work") will be subject to the warranty provisions in this Section 11.2 for a one-year period that begins upon completion of such Warranty Work to City's satisfaction.

(F) **City's Remedies.** If Contractor or its responsible Subcontractor fails to correct defective Work within ten days following notice by City, or sooner if required by the circumstances, City may correct the defects to conform with the Contract Documents at Contractor's sole expense. Contractor must reimburse City for its costs in accordance with subsection (H), below.

(G) **Emergency Repairs.** In cases of emergency where any delay in correcting defective Work could cause harm, loss or damage, City may immediately correct the defects to conform with the Contract Documents at Contractor's sole expense. Contractor or its surety must reimburse City for its costs in accordance with subsection (H), below.

(H) **Reimbursement.** Contractor must reimburse City for its costs to repair under subsections (F) or (G), above, within 30 days following City's submission of a demand for

payment pursuant to this provision. If City is required to initiate legal action to compel Contractor's compliance with this provision, and City is the prevailing party in such action, Contractor and its surety are solely responsible for all of City's attorney's fees and legal costs expended to enforce Contractor's warranty obligations herein, in addition to any and all costs City incurs to correct the defective Work.

**11.3 Use Prior to Final Completion.** City reserves the right to occupy or make use of the Project, or any portions of the Project, prior to Final Completion if City has determined that the Project or portion of it is in a condition suitable for the proposed occupation or use, and that it is in its best interest to occupy or make use of the Project, or any portions of it, prior to Final Completion.

(A) **Non-Waiver.** Occupation or use of the Project, in whole or in part, prior to Final Completion will not operate as acceptance of the Work or any portion of it, nor will it operate as a waiver of any of City's rights or Contractor's duties pursuant to these Contract Documents, and will not affect nor bear on the determination of the time of substantial completion with respect to any statute of repose pertaining to the time for filing an action for construction defect.

(B) **City's Responsibility.** City will be responsible for the cost of maintenance and repairs due to normal wear and tear with respect to those portions of the Project that are being occupied or used before Final Completion. The Contract Price or the Contract Time may be adjusted pursuant to the applicable provisions of these Contract Documents if, and only to the extent that, any occupation or use under this Section actually adds to Contractor's cost or time to complete the Work within the Contract Time.

**11.4 Substantial Completion.** For purposes of determining "substantial completion" with respect to any statute of repose pertaining to the time for filing an action for construction defect, "substantial completion" is deemed to mean the last date that Contractor or any Subcontractor performs Work on the Project prior to City acceptance of the Project, except for warranty work performed under this Article.

## Article 12 - Dispute Resolution

**12.1 Claims.** This Article applies to and provides the exclusive procedures for any Claim arising from or related to the Contract or performance of the Work.

(A) **Limitations.** A Claim may only include the portion of a previously rejected demand that remains in dispute between Contractor and City. With the exception of any dispute regarding the amount of money actually paid to Contractor as Final Payment, Contractor is not entitled to submit a Claim demanding a change in the Contract Time or the Contract Price, which has not previously been submitted to City in full compliance with Article 5 and Article 6, and subsequently rejected in whole or in part by City.

(B) **Scope of Article.** This Article is intended to provide the exclusive procedures for submission and resolution of Claims of any amount and applies in addition to the provisions of Public Contract Code § 9204 and § 20104 et seq., which are incorporated by reference herein.

(C) **No Work Delay.** Notwithstanding the submission of a Claim or any other dispute between the parties related to the Project or the Contract Documents, Contractor must perform the Work and may not delay or cease Work pending resolution of a Claim or

other dispute, but must continue to diligently prosecute the performance and timely completion of the Work, including the Work pertaining to the Claim or other dispute.

(D) **Informal Resolution.** Contractor will make a good faith effort to informally resolve a dispute before initiating a Claim, preferably by face-to-face meeting between authorized representatives of Contractor and City.

**12.2 Claims Submission.** The following requirements apply to any Claim subject to this Article:

(A) **Substantiation.** The Claim must be submitted to City in writing, by registered or certified mail with return receipt requested and clearly identified as a "Claim" submitted pursuant to this Article 12. The Claim must include all of the documents necessary to substantiate the Claim including the Change Order request that was rejected in whole or in part, and a copy of City's written rejection that is in dispute. The Claim must clearly identify and describe the dispute, including relevant references to applicable portions of the Contract Documents, and a chronology of relevant events. Any Claim for additional payment must include a complete, itemized breakdown of all known or estimated labor, materials, taxes, insurance, and subcontract, or other costs. Substantiating documentation such as payroll records, receipts, invoices, or the like, must be submitted in support of each component of claimed cost. Any Claim for an extension of time or delay costs must be substantiated with a schedule analysis and narrative depicting and explaining claimed time impacts.

(B) **Claim Format and Content.** A Claim must be submitted in the following format:

(1) Provide a cover letter, specifically identifying the submission as a "Claim" submitted under this Article 12 and specifying the requested remedy (e.g., amount of proposed change to Contract Price and/or change to Contract Time).

(2) Provide a summary of each Claim, including underlying facts and the basis for entitlement, and identify each specific demand at issue, including the specific Change Order request (by number and submittal date), and the date of City's rejection of that demand, in whole or in part.

(3) Provide a detailed explanation of each issue in dispute. For multiple issues included within a single Claim or for multiple Claims submitted concurrently, separately number and identify each individual issue or Claim, and include the following for each separate issue or Claim:

a. A succinct statement of the matter in dispute, including Contractor's position and the basis for that position;

b. Identify and attach all documents that substantiate the Claim, including relevant provisions of the Contract Documents, RFIs, calculations, and schedule analysis (see subsection (A), Substantiation, above);

c. A chronology of relevant events; and

d. Analysis and basis for claimed changes to Contract Price, Contract Time, or any other remedy requested.

(4) Provide a summary of issues and corresponding claimed damages. If, by the time of the Claim submission deadline (below), the precise amount of the requested change in the Contract Price or Contract Time is not yet known, Contractor must provide a good faith estimate, including the basis for that estimate, and must identify the date by which it is anticipated that the Claim will be updated to provide final amounts.

(5) Include the following certification, executed by Contractor's authorized representative:

"The undersigned Contractor certifies under penalty of perjury that its statements and representations in this Claim submittal are true and correct. Contractor warrants that this Claim submittal is comprehensive and complete as to the matters in dispute, and agrees that any costs, expenses, or delay not included herein are deemed waived."

(C) **Submission Deadlines.**

(1) A Claim disputing rejection of a request for a change in the Contract Time or Contract Price must be submitted within 21 days following the date that City notified Contractor in writing that a request for a change in the Contract Time or Contract Price, duly submitted in compliance with Article 5 and Article 6, has been rejected in whole or in part. A Claim disputing the terms of a unilateral Change Order must be submitted within 21 days following the date of issuance of the unilateral Change Order. These Claim deadlines apply even if Contractor cannot yet quantify the total amount of any requested change in the Contract Time or Contract Price. If the Contractor cannot quantify those amounts, it must submit an estimate of the amounts claimed pending final determination of the requested remedy by Contractor.

(2) With the exception of any dispute regarding the amount of Final Payment, any Claim must be filed on or before the date of Final Payment or will be deemed waived.

(3) A Claim disputing the amount of Final Payment must be submitted within 21 days of the effective date of Final Payment, under Section 8.7, Final Payment.

(4) Strict compliance with these Claim submission deadlines is necessary to ensure that any dispute may be mitigated as soon as possible, and to facilitate cost-efficient administration of the Project. **Any Claim that is not submitted within the specified deadlines will be deemed waived by Contractor.**

**12.3 City's Response.** City will respond within 45 days of receipt of the Claim with a written statement identifying which portion(s) of the Claim are disputed, unless the 45-day period is extended by mutual agreement of City and Contractor or as otherwise allowed under Public Contract Code § 9204. However, if City determines that the Claim is not adequately substantiated pursuant to Section 12.2(A), Substantiation, City may first request in writing, within 30 days of receipt of the Claim, any additional documentation supporting the Claim or relating to defenses to the Claim that City may have against the Claim.

(A) **Additional Information.** If additional information is thereafter required, it may be requested and provided upon mutual agreement of City and Contractor. If Contractor's Claim is based on estimated amounts, Contractor has a continuing duty to update its

Claim as soon as possible with information on actual amounts in order to facilitate prompt and fair resolution of the Claim.

(B) **Non-Waiver.** Any failure by City to respond within the times specified above will not be construed as acceptance of the Claim, in whole or in part, or as a waiver of any provision of these Contract Documents.

**12.4 Meet and Confer.** If Contractor disputes City's written response, or City fails to respond within the specified time, within 15 days of receipt of City's response or within 15 days of City's failure to respond within the applicable 45-day time period under Section 12.3, respectively, Contractor may notify City of the dispute in writing sent by registered or certified mail, return receipt requested, and demand an informal conference to meet and confer for settlement of the issues in dispute. If Contractor fails to notify City of the dispute and demand an informal conference to meet and confer in writing within the specified time, Contractor's Claim will be deemed waived.

(A) **Schedule Meet and Confer.** Upon receipt of the demand to meet and confer, City will schedule the meet and confer conference to be held within 30 days, or later if needed to ensure the mutual availability of each of the individuals that each party requires to represent its interests at the meet and confer conference.

(B) **Location for Meet and Confer.** The meet and confer conference will be scheduled at a location at or near City's principal office.

(C) **Written Statement After Meet and Confer.** Within ten working days after the meet and confer has concluded, City will issue a written statement identifying which portion(s) of the Claim remain in dispute, if any.

(D) **Submission to Mediation.** If the Claim or any portion remains in dispute following the meet and confer conference, within ten working days after the City issues the written statement identifying any portion(s) of the Claim remaining in dispute, the Contractor may identify in writing disputed portion(s) of the Claim, which will be submitted for mediation, as set forth below.

**12.5 Mediation and Government Code Claims.**

(A) **Mediation.** Within ten working days after the City issues the written statement identifying any portion(s) of the Claim remaining in dispute following the meet and confer, City and Contractor will mutually agree to a mediator, as provided under Public Contract Code § 9204. Mediation will be scheduled to ensure the mutual availability of the selected mediator and all of the individuals that each party requires to represent its interests. If there are multiple Claims in dispute, the parties may agree to schedule the mediation to address all outstanding Claims at the same time. The parties will share the costs of the mediator and mediation fees equally, but each party is otherwise solely and separately responsible for its own costs to prepare for and participate in the mediation, including costs for its legal counsel or any other consultants.

(B) **Government Code Claims.**

(1) Timely presentation of a Government Code Claim is a condition precedent to filing any legal action based on or arising from the Contract. Compliance with the Claim submission requirements in this Article 12 is a condition precedent to filing a Government Code Claim.

(2) The time for filing a Government Code Claim will be tolled from the time Contractor submits its written Claim pursuant to Section 12.2, above, until the time that Claim is denied in whole or in part at the conclusion of the meet and confer process, including any period of time used by the meet and confer process. However, if the Claim is submitted to mediation, the time for filing a Government Code Claim will be tolled until conclusion of the mediation, including any continuations, if the Claim is not fully resolved by mutual agreement of the parties during the mediation or any continuation of the mediation.

- 12.6 Tort Claims.** This Article does not apply to tort claims and nothing in this Article is intended nor will be construed to change the time periods for filing tort-based Government Code Claims.
- 12.7 Arbitration.** It is expressly agreed, under Code of Civil Procedure § 1296, that in any arbitration to resolve a dispute relating to this Contract, the arbitrator's award must be supported by law and substantial evidence.
- 12.8 Burden of Proof and Limitations.** Contractor bears the burden of proving entitlement to and the amount of any claimed damages. Contractor is not entitled to damages calculated on a total cost basis, but must prove actual damages. Contractor is not entitled to speculative, special, or consequential damages, including home office overhead or any form of overhead not directly incurred at the Project site or any other Worksite; lost profits; loss of productivity; lost opportunity to work on other projects; diminished bonding capacity; increased cost of financing for the Project; extended capital costs; non-availability of labor, material or equipment due to delays; or any other indirect loss arising from the Contract. The Eichleay Formula or similar formula will not be used for any recovery under the Contract. The City will not be directly liable to any Subcontractor or supplier.
- 12.9 Legal Proceedings.** In any legal proceeding that involves enforcement of any requirements of the Contract Documents, the finder of fact will receive detailed instructions on the meaning and operation of the Contract Documents, including conditions, limitations of liability, remedies, claim procedures, and other provisions bearing on the defenses and theories of liability. Detailed findings of fact will be requested to verify enforcement of the Contract Documents. All of the City's remedies under the Contract Documents will be construed as cumulative, and not exclusive, and the City reserves all rights to all remedies available under law or equity as to any dispute arising from or relating to the Contract Documents or performance of the Work.
- 12.10 Other Disputes.** The procedures in this Article 12 will apply to any and all disputes or legal actions, in addition to Claims, arising from or related to this Contract, including disputes regarding suspension or early termination of the Contract, unless and only to the extent that compliance with a procedural requirement is expressly and specifically waived by City. Nothing in this Article is intended to delay suspension or termination under Article 13.

### **Article 13 - Suspension and Termination**

- 13.1 Suspension for Cause.** In addition to all other remedies available to City, if Contractor fails to perform or correct Work in accordance with the Contract Documents, including non-compliance with applicable environmental or health and safety Laws, City may immediately order the Work, or any portion of it, suspended until the circumstances giving rise to the suspension have been eliminated to City's satisfaction.

(A) **Notice of Suspension.** Upon receipt of City's written notice to suspend the Work, in whole or in part, except as otherwise specified in the notice of suspension, Contractor and its Subcontractors must promptly stop Work as specified in the notice of suspension; comply with directions for cleaning and securing the Worksite; and protect the completed and in-progress Work and materials. Contractor is solely responsible for any damages or loss resulting from its failure to adequately secure and protect the Project.

(B) **Resumption of Work.** Upon receipt of the City's written notice to resume the suspended Work, in whole or in part, except as otherwise specified in the notice to resume, Contractor and its Subcontractors must promptly re-mobilize and resume the Work as specified; and within ten days from the date of the notice to resume, Contractor must submit a recovery schedule, prepared in accordance with the Contract Documents, showing how Contractor will complete the Work within the Contract Time.

(C) **Failure to Comply.** Contractor will not be entitled to an increase in the Contract Time or Contract Price for a suspension occasioned by Contractor's failure to comply with the Contract Documents.

(D) **No Duty to Suspend.** City's right to suspend the Work will not give rise to a duty to suspend the Work, and City's failure to suspend the Work will not constitute a defense to Contractor's failure to comply with the requirements of the Contract Documents.

**13.2 Suspension for Convenience.** City reserves the right to suspend, delay, or interrupt the performance of the Work in whole or in part, for a period of time determined to be appropriate for City's convenience. Upon notice by City pursuant to this provision, Contractor must immediately suspend, delay, or interrupt the Work and secure the Project site as directed by City except for taking measures to protect completed or in-progress Work as directed in the suspension notice, and subject to the provisions of Section 13.1(A) and (B), above. If Contractor submits a timely request for a Change Order in compliance with Articles 5 and 6, the Contract Price and the Contract Time will be equitably adjusted by Change Order pursuant to the terms of Articles 5 and 6 to reflect the cost and delay impact occasioned by such suspension for convenience, except to the extent that any such impacts were caused by Contractor's failure to comply with the Contract Documents or the terms of the suspension notice or notice to resume. However, the Contract Time will only be extended if the suspension causes or will cause unavoidable delay in Final Completion. If Contractor disputes the terms of a Change Order issued for such equitable adjustment due to suspension for convenience, its sole recourse is to comply with the Claim procedures in Article 12.

**13.3 Termination for Default.** City may declare that Contractor is in default of the Contract for a material breach of or inability to fully, promptly, or satisfactorily perform its obligations under the Contract.

(A) **Default.** Events giving rise to a declaration of default include Contractor's refusal or failure to supply sufficient skilled workers, proper materials, or equipment to perform the Work within the Contract Time; Contractor's refusal or failure to make prompt payment to its employees, Subcontractors, or suppliers or to correct defective Work or damage; Contractor's failure to comply with Laws, or orders of any public agency with jurisdiction over the Project; evidence of Contractor's bankruptcy, insolvency, or lack of financial capacity to complete the Work as required within the Contract Time; suspension, revocation, or expiration and nonrenewal of Contractor's license or DIR registration; dissolution, liquidation, reorganization, or other major change in Contractor's

organization, ownership, structure, or existence as a business entity; unauthorized assignment of Contractor's rights or duties under the Contract; or any material breach of the Contract requirements.

(B) **Notice of Default and Opportunity to Cure.** Upon City's declaration that Contractor is in default due to a material breach of the Contract Documents, if City determines that the default is curable, City will afford Contractor the opportunity to cure the default within ten days of City's notice of default, or within a period of time reasonably necessary for such cure, including a shorter period of time if applicable.

(C) **Termination.** If Contractor fails to cure the default or fails to expediently take steps reasonably calculated to cure the default within the time period specified in the notice of default, City may issue written notice to Contractor and its performance bond surety of City's termination of the Contract for default.

(D) **Waiver.** Time being of the essence in the performance of the Work, if Contractor's surety fails to arrange for completion of the Work in accordance with the Performance Bond within seven calendar days from the date of the notice of termination pursuant to paragraph (C), City may immediately make arrangements for the completion of the Work through use of its own forces, by hiring a replacement contractor, or by any other means that City determines advisable under the circumstances. Contractor and its surety will be jointly and severally liable for any additional cost incurred by City to complete the Work following termination, where "additional cost" means all cost in excess of the cost City would have incurred if Contractor had timely completed Work without the default and termination. In addition, City will have the right to immediate possession and use of any materials, supplies, and equipment procured for the Project and located at the Project site or any Worksite on City property for the purposes of completing the remaining Work.

(E) **Compensation.** Within 30 days of receipt of updated as-builts, all warranties, manuals, instructions, or other required documents for Work installed to date, and delivery to City of all equipment and materials for the Project for which Contractor has already been compensated, Contractor will be compensated for the Work satisfactorily performed in compliance with the Contract Documents up to the effective date of the termination pursuant to the terms of Article 8, Payment, subject to City's rights to withhold or deduct sums from payment otherwise due pursuant to Section 8.3, and excluding any costs Contractor incurs as a result of the termination, including any cancellation or restocking charges or fees due to third parties. If Contractor disputes the amount of compensation determined by City, its sole recourse is to comply with the Claim Procedures in Article 12, by submitting a Claim no later than 30 days following notice from City of the total compensation to be paid by City.

(F) **Wrongful Termination.** If Contractor disputes the termination, its sole recourse is to comply with the Claim procedures in Article 12. If a court of competent jurisdiction or an arbitrator later determines that the termination for default was wrongful, the termination will be deemed to be a termination for convenience, and Contractor's damages will be strictly limited to the compensation provided for termination for convenience under Section 13.4, below. Contractor waives any claim for any other damages for wrongful termination including special or consequential damages, lost opportunity costs, or lost profits, and any award of damages is subject to Section 12.8, Burden of Proof and Limitations.

**13.4 Termination for Convenience.** City reserves the right, acting in its sole discretion, to terminate all or part of the Contract for convenience upon written notice to Contractor.

(A) **Compensation to Contractor.** In the event of City's termination for convenience, Contractor waives any claim for damages, including for loss of anticipated profits from the Project. The following will constitute full and fair compensation to Contractor, and Contractor will not be entitled to any additional claim or compensation:

(1) **Completed Work.** The value of its Work satisfactorily performed as of the date notice of termination is received, based on Contractor's schedule of values and unpaid costs for items delivered to the Project site that were fabricated for incorporation in the Work;

(2) **Demobilization.** Demobilization costs specified in the schedule of values, or if demobilization costs were not provided in a schedule of values pursuant to Section 8.1, then based on actual, reasonable, and fully documented demobilization costs; and

(3) **Termination Markup.** Five percent of the total value of the Work performed as of the date of notice of termination, including reasonable, actual, and documented costs to comply with the direction in the notice of termination for convenience, and demobilization costs, which is deemed to cover all overhead and profit to date.

(B) **Disputes.** If Contractor disputes the amount of compensation determined by City pursuant to paragraph (A), above, its sole recourse is to comply with the Claim procedures in Article 12, by submitting a Claim no later than 30 days following notice from City of total compensation to be paid by City.

**13.5 Actions Upon Termination for Default or Convenience.** The following provisions apply to any termination under this Article, whether for default or convenience, and whether in whole or in part.

(A) **General.** Upon termination, City may immediately enter upon and take possession of the Project and the Work and all tools, equipment, appliances, materials, and supplies procured or fabricated for the Project. Contractor will transfer title to and deliver all completed Work and all Work in progress to City.

(B) **Submittals.** Unless otherwise specified in the notice of termination, Contractor must immediately submit to City all designs, drawings, as-built drawings, Project records, contracts with vendors and Subcontractors, manufacturer warranties, manuals, and other such submittals or Work-related documents required under the terms of the Contract Documents, including incomplete documents or drafts.

(C) **Close Out Requirements.** Except as otherwise specified in the notice of termination, Contractor must comply with all of the following:

(1) Immediately stop the Work, except for any Work that must be completed pursuant to the notice of termination and comply with City's instructions for cessation of labor and securing the Project and any other Worksite(s).

(2) Comply with City's instructions to protect the completed Work and materials, using best efforts to minimize further costs.

(3) Contractor must not place further orders or enter into new subcontracts for materials, equipment, services or facilities, except as may be necessary to complete any portion of the Work that is not terminated.

(4) As directed in the notice, Contractor must assign to City or cancel existing subcontracts that relate to performance of the terminated Work, subject to any prior rights, if any, of the surety for Contractor's performance bond, and settle all outstanding liabilities and claims, subject to City's approval.

(5) As directed in the notice, Contractor must use its best efforts to sell any materials, supplies, or equipment intended solely for the terminated Work in a manner and at market rate prices acceptable to City.

(D) **Payment Upon Termination.** Upon completion of all termination obligations, as specified herein and in the notice of termination, Contractor will submit its request for Final Payment, including any amounts due following termination pursuant to this Article 13. Payment will be made in accordance with the provisions of Article 8, based on the portion of the Work satisfactorily completed, including the close out requirements, and consistent with the previously submitted schedule of values and unit pricing, including demobilization costs. Adjustments to Final Payment may include deductions for the cost of materials, supplies, or equipment retained by Contractor; payments received for sale of any such materials, supplies, or equipment, less re-stocking fees charged; and as otherwise specified in Section 8.3, Adjustment of Payment Application.

(E) **Continuing Obligations.** Regardless of any Contract termination, Contractor's obligations for portions of the Work already performed will continue and the provisions of the Contract Documents will remain in effect as to any claim, indemnity obligation, warranties, guarantees, submittals of as-built drawings, instructions, or manuals, record maintenance, or other such rights and obligations arising prior to the termination date.

#### Article 14 - Miscellaneous Provisions

- 14.1 Assignment of Unfair Business Practice Claims.** Under Public Contract Code § 7103.5, Contractor and its Subcontractors agree to assign to City 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. § 15) or under the Cartwright Act (Chapter 2 (commencing with § 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the Contract or any subcontract. This assignment will be effective at the time City tenders Final Payment to Contractor, without further acknowledgement by the parties.
- 14.2 Provisions Deemed Inserted.** Every provision of law required to be inserted in the Contract Documents is deemed to be inserted, and the Contract Documents will be construed and enforced as though such provision has been included. If it is discovered that through mistake or otherwise that any required provision was not inserted, or not correctly inserted, the Contract Documents will be deemed amended accordingly.
- 14.3 Waiver.** City's waiver of a breach, failure of any condition, or any right or remedy contained in or granted by the provisions of the Contract Documents will not be effective unless it is in writing and signed by City. City's waiver of any breach, failure, right, or remedy will not be deemed a waiver of any other breach, failure, right, or remedy, whether or not similar, nor will any waiver constitute a continuing waiver unless specified in writing by City.

**14.4 Titles, Headings, and Groupings.** The titles and headings used and the groupings of provisions in the Contract Documents are for convenience only and may not be used in the construction or interpretation of the Contract Documents or relied upon for any other purpose.

**14.5 Statutory and Regulatory References.** With respect to any amendments to any statutes or regulations referenced in these Contract Documents, the reference is deemed to be the version in effect on the date that bids were due.

**14.6 Survival.** The provisions that survive termination or expiration of this Contract include Contract Section 11, Notice, and subsections 12.1, 12.2, 12.3, 12.4, 12.5, and 12.6 of Section 12, General Provisions; and the following provisions in these General Conditions: Section 2.2(J), Contractor's Records, Section 2.3(C), Termination, Section 3.7, Ownership, Section 4.2, Indemnity, Article 12, Dispute Resolution, and Section 11.2, Warranty.

END OF GENERAL CONDITIONS

## Special Conditions

### 1. Authorized Work Days and Hours.

**1.1 Authorized Work Days.** Except as expressly authorized in writing by City, Contractor is limited to performing Work on the Project on the following days of the week, excluding holidays observed by City: Monday through Friday.

**1.2 Authorized Work Hours.** Except as expressly authorized in writing by City, Contractor is limited to performing Work on the Project during the following hours: 7:00 a.m. through 4:30 p.m. except for work within temporary construction easements that shall be coordinated and approved by the private property owners.

**2. Pre-Construction Conference.** City will designate a date and time for a pre-construction conference with Contractor following Contract execution. Project administration procedures and coordination between City and Contractor will be discussed, and Contractor must present City with the following information or documents at the meeting for City's review and acceptance before the Work commences:

- 2.1** Name, 24-hour contact information, and qualifications of the proposed on-site superintendent;
- 2.2** List of all key Project personnel and their complete contact information, including email addresses and telephone numbers during regular hours and after hours;
- 2.3** Staging plans that identify the sequence of the Work, including any phases and alternative sequences or phases, with the goal of minimizing the impacts on residents, businesses and other operations in the Project vicinity;
- 2.4** If required, traffic control plans associated with the staging plans that are signed and stamped by a licensed traffic engineer;
- 2.5** Draft baseline schedule for the Work as required under Section 5.2 of the General Conditions, to be finalized within ten days after City issues the Notice to Proceed;
- 2.6** Breakdown of lump sum bid items, to be used for determining the value of Work completed for future progress payments to Contractor;
- 2.7** Schedule with list of Project submittals that require City review, and list of the proposed material suppliers;
- 2.8** Plan for coordination with affected utility owner(s) and compliance with any related permit requirements;
- 2.9** Videotape and photographs recording the conditions throughout the pre-construction Project site, showing the existing improvements and current condition of the curbs, gutters, sidewalks, signs, landscaping, streetlights, structures near the Project such as building faces, canopies, shades and fences, and any other features within the Project area limits;

- 2.10 If requested by City, Contractor's cash flow projections; and
- 2.11 Any other documents specified in the Special Conditions or Notice of Potential Award.

**3. Insurance Requirements.** The insurance requirements under Section 4.3 of the General Conditions are modified for this Contract, as set forth below. Except as expressly stated below, all other provisions in Section 4.3 are unchanged and remain in full force and effect.

**3.1 Commercial General Liability ("CGL") Insurance.** The CGL insurance policy limits set forth in subsection 4.3(A)(1) of the General Conditions are modified for this Contract to require at least \$5,000,000 per occurrence and at least \$10,000,000 general aggregate.

**3.2 Pollution Liability Insurance Waived.** The pollution liability insurance policy requirement set forth in subsection 4.3(A)(4) of the General Conditions is hereby waived and does not apply to this Contract.

**3.3 Builders Risk Insurance Waived.** The builder's risk insurance policy requirement set forth in subsection 4.3(A)(5) of the General Conditions is hereby waived and does not apply to this Contract.

**4. Close Out Requirements.** Contractor's close out requirements include the following, if applicable:

**4.1** Contractor must replace, with thermoplastic, any existing striping within and adjacent to the Project site that is damaged during the Work. Partially damaged striping must be replaced in its entirety.

**4.2** Contractor must replace any survey monuments that are damaged or removed during the Work, with a Record of Survey filed by a licensed land surveyor as required by California law.

**4.3** Before removing any traffic control or street signs on the Project site, Contractor must take photographs showing their original locations. Upon completion of each phase of construction, Contractor must temporarily reset the signs at those locations. Contractor must then replace the signs permanently upon completion of the Work and the cost of their removal and replacement must be included in the Bid Proposal.

**4.4** Contractor must maintain any rural mail boxes on the Project site and relocate them to their permanent locations as soon as possible in the course of the Work, to the satisfaction of the affected property owners and the postal service.

**5. Contractor's Site Access and Temporary Construction Easements.** The Contractor shall be made aware that access for the certain Project limits is through the existing public right-of-way or through temporary construction easements that have been identified on the plans. The Contractor shall ensure not to encroach onto private property or shall obtain permission from private property owner if needed during construction. Contractor shall coordinate working hours with the private property owners to ensure no noise impacts.

**6. Encroachment Permits.** The Contractor shall apply for an obtain any and all encroachment permits form authorities having jurisdiction such as, Caltrans, the Contra Costa County Water District, etc. A copy of the approved encroachment permit from provide a copy to the City prior to the start of construction as indicated and in conjunction with the Technical Specifications.

END OF SPECIAL CONDITIONS

REFERENCE ONLY

# Technical Specifications

PRIORITY AREA ONE (PA-1)

CIP PROJECT NO. 336-31695

## Jeffery Way Utility Extension Improvement Plan

CITY OF BRENTWOOD  
CALIFORNIA

Dated:  
March 2025

Prepared By:  
City Of Brentwood  
150 City Park Way • Brentwood, California 94513

In Conjunction With:



2633 CAMINO RAMON, SUITE 350 • SAN RAMON, CALIFORNIA 94583 • (925) 866-0322 • [www.cbandg.com](http://www.cbandg.com)  
SAN RAMON • ROSEVILLE

## **TECHNICAL SPECIFICATIONS**

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## SECTION TS-1      GENERAL

### A. SCOPE

The work to be done consists of the new construction of Jeffery Way north of Empire Avenue (including utilities), and the construction of an access road to an adjacent Contra Costa County Flood Control District parcel. Improvements include, but are not limited to, storm drain, domestic water, non-potable water, irrigation water, grading, sidewalk, curb, gutter, pavement, signage, striping, landscaping, corrosion protection, and electroliers.

### B. SUBMITTALS

After the notice to proceed is issued, but prior to the start of construction, the Contractor shall submit to the City, for approval, all required permits and verification of the location and depth of all existing utilities and underground facilities within the project limits. The Contractor shall notify the Engineer of any discrepancies between the conditions in the field and the project plans. In addition, the Contractor shall submit to the City for approval, prior to the start of construction, the following:

1. Traffic Control Plan – Section TS-4 (C)
2. Designation of Traffic Control Supervisor – Section TS-4 (C)
3. Class 2 Aggregate Base – Specification & Gradation – Section TS-4 (N)
4. Hot Mix Asphalt Concrete Design – Section TS-4 (O)
5. Concrete Mix Design – Various Sections
6. Trenching Plan – Section TS-5
7. Dewatering Plan – Section TS-5
8. Haul Route Proposal – Section TS-1 (H)
9. Emergency Phone Number List
10. Sheeting and Shoring – Section TS-6

Additionally, the Contractor shall submit to the City for approval, prior to the start of construction, the Manufacturer's Cut Sheets and Specifications for the following:

1. Sanitary Sewer Manholes – Section TS-8 (A)
2. Sanitary Sewer Pipe for all sizes used – Section TS-8(B)
3. Water Pipe (12" Water) – Section TS-9(A)
4. Water Pipe Flanges, Fittings, and Couplers – Section TS-9(A)
5. Water Valves – Section TS-9(B)
6. Water Blow off valves – Section TS-9(D)
7. Non-Potable Water Pipe (8" Water) – Section TS-10(A)
8. Non-Potable Water Pipe Flanges, Fittings, and Couplers – Section TS-10(A)
9. Non-Potable Water Valves – Section TS-10(B)
10. Non-Potable Water Blow off valves – Section TS-10(C)
11. Corrosion Control – Section TS-13

All submittals requiring review, including working drawings required by these Specifications, shall be made to the Project Manager at 150 City Park Way, Brentwood, CA 94513, Telephone (925) 516-5420, Fax (925) 516-5421.

Electronic copies of all submittals shall be submitted for approval a minimum of ten (10) calendar days in advance of ordering.

Full compensation for submittals shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed thereafter.

### C. ADJACENT PROPERTY OWNERS

The Contractor shall give written notice seven (7) calendar days in advance of construction to notify all property owners and their tenants indicating the date(s) of construction within or adjacent to their property. Property owners shall also be notified of fences, mailboxes, etc., that will be temporarily removed for construction or relocated. The Contractor shall submit to the Engineer a sample letter of notification for approval two (2) working days prior of distribution to property owners. The Contractor may obtain a list of property owners and their addresses from the City of Brentwood.

The Contractor shall provide for continuous ingress and egress to private properties adjacent to work through the period of construction.

The Contractor's attention is directed to Section TS-3, "Obstructions and Other Utility's Work", of these Contract Documents pertaining to preservation of property and Contractor's responsibility for damage.

Full compensation for notifying adjacent property owners shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed thereafter.

### A. NOTICE TO AFFECTED PARTIES

1. At ten (10) working days and again at two (2) working days prior to mobilizing to a site or performing any action which affects residents, schools or businesses, the Contractor shall distribute an approved written, "door hanger" type notice to all adjoining residents and businesses, property owners, tenants and applicable parties. Such notice shall state that all vehicles and equipment need to be moved off of the street and include the expected date for start of construction, a general description of the construction activity to take place, expected duration of the activity, traffic delays, alternative routes, driveway closures and the name, address, and a 24-hour local telephone number of the Contractor. The Contractor shall check for messages hourly from 7:00 a.m. to 6:00 p.m. and at least once every twelve (12) hours during nights, weekends and holidays. The Contractor shall respond promptly to all messages.
2. A draft copy of the notice shall be provided to the City Engineer for approval, prior to distribution. The Contractor shall notify all residents and businesses within at least 300 feet of the work. It is the Contractor's responsibility to keep all affected residents, schools and businesses notified of the work and work schedule, and to provide whatever facilities are necessary to assure the minimum possible inconvenience to their lives and operations.

3. The Contractor shall provide the City Engineer a copy of the proposed written notification prior to mailing or delivery for approval at least five (5) days prior to their distribution. The Contractor shall provide a copy of the written notification as mailed or delivered, as well as a list of all recipients of such notifications. The Contractor shall maintain an updated and chronological record at the job site of all written notifications along with a list of recipients. Such records shall be made available to the engineer upon request. All information shall be submitted to the City Engineer for inclusion on the City of Brentwood Web Page.
4. Five (5) working days prior to construction activities, the following parties shall also be notified:
  - a. Brentwood Union School District  
Phone: (925) 513-6300  
255 Guthrie Lane  
Brentwood, CA 94513
  - b. Tri Delta Transit  
Phone: (925) 754-6622  
801 Wilbur Avenue  
Antioch, CA 94509
  - c. Postal Service  
Phone: 1 (800) 275-8777  
18 Oak St  
Brentwood, CA 94513-9998
  - d. Police Department  
Phone: (925) 634-6911 (Main Number)  
Dispatch (24 hrs) (925) 809-7911 (Non-Emergency)  
9100 Brentwood Blvd.  
Brentwood, CA 94513
  - e. Liberty Union School District  
Phone: (925) 634-2166 x 2032  
20 Oak Street  
Brentwood, CA 94513
  - f. Contra Costa County Fire Protection District  
Phone: (925) 941-3300  
4005 Port Chicago Highway, Suite 250  
Concord, CA 94520-1180
  - g. Disposal Company/City of Brentwood  
Contact: Jon Carlson  
Phone: (925) 516-6095  
2301 Elkins Way  
Brentwood, CA 94513

h. Chamber of Commerce  
Phone: (925) 634-3344  
35 Oak Street  
Brentwood, CA 94513

5. Delays in performing the work or changes in the construction schedule, for any reason, shall require the Contractor to provide written re-notification to residents, businesses, City services and the local newspaper within 24 hours that any delay or change is reported to or discovered by the City Engineer. If the local paper publishes an incorrect schedule, The Contractor shall re-publish the correct schedule to run the following two (2) consecutive days.
6. Failure to properly notify residents will necessitate the Contractor to reschedule his work with no additional working days to be added to the Contract and additional liquidated damages applied.

Full compensation for noticing affected parties shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed thereafter.

#### D. CONSTRUCTION FENCING

##### 1. TEMPORARY FENCING

Temporary fencing shall be provided in areas where existing fences are removed temporarily for construction and around all excavations deeper than five (5') feet, which will remain open at the end of the workday. In these areas, a temporary six (6') foot high chain link fence will be required during construction.

The Contractor shall install temporary orange construction fence on adjacent properties to contain all construction activities within the right-of-way, where no fencing existed prior to construction.

Full compensation for providing temporary construction fencing shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed thereafter.

#### E. SOUND CONTROL REQUIREMENTS

Sound control shall conform to the provisions in the City Municipal Code, Section 9.32.030 "Designated Noise Zones".

The noise level from the Contractor's operations, between the hours of 7:00 a.m. to 10:00 p.m. (if this time period is approved by the City Engineer), shall not exceed 60 dBa exterior noise level. From 10:00 p.m. to 7:00 a.m. (if this time period is approved by the City Engineer), shall not exceed 45 dBa exterior noise level.

The noise level requirement shall apply to the 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 thereafter.

#### F. LIMITS OF WORK

The street right of way shall be used only for purposes that are necessary to perform the required work. The Contractor shall not occupy the right of way, or allow others to occupy the right of way, for purposes which are not necessary to perform the required work.

Areas available for the use of the Contractor are designated on the plans by easement or right of way lines. Use of the Contractor's work areas and other City-owned property shall be at the Contractor's own risk, and the City shall not be held liable for any damage to or loss of materials or equipment located within such areas.

The Contractor shall remove all equipment, materials, and rubbish from the work areas and other City-owned property which he/she occupies and shall leave the areas in a presentable condition, in accordance with the provisions in Section 4-1.13, "Cleanup," of the Caltrans Standard Specifications.

The Contractor shall secure at their own expense any area required for storage of equipment or materials, or for other purposes if sufficient area is not available to him/her within the contract limits, or at the sites designated on the plans outside the contract limits.

In the areas of City right of way not designated for the exclusive use by the Contractor, the Contractor shall coordinate with adjacent project and property owners to ensure that storage of materials will not restrict access for those projects or properties. If stored materials must be relocated to provide access, the Contractor shall relocate the stored material at their own expense and no claim for costs to relocate the stored materials will be allowed.

The Contractor shall limit their operations to the areas immediately adjacent to the project being constructed. Where the specific limits of work are not designated on the plans or specified in these Specifications, the Contractor shall limit his/her operation to the existing road rights of way.

All existing structures, residences, operating utilities, power poles, and other devices within the work area shall be maintained at all times during construction.

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 thereafter.

## G. PERMITS

The Contractor shall ensure that all necessary permits and licenses have been granted prior to commencing work. The Contractor shall not proceed to work in areas requiring permits or licenses until such are obtained. Contractor shall provide for all inspections and permits required by Federal, State, and local authorities and utility agencies in purchasing, transporting and installing materials.

The Contractor will adhere to all permitting conditions from the Department of Fish and Game, the Army Corps of Engineers, PG&E, CALTRANS, and the United States Department of the Interior Fish and Wildlife Service.

The Contractor shall not hold the City liable for any delays in obtaining any and all permits, licenses or permissions to construct as long as the Contractor has items of work that could be accomplished besides those items that require permits. Additional working days may be allowed due to permit delays at the discretion of the Engineer.

Full compensation for any work and/or coordination related to obtaining permits and complying with the provisions of this Section shall be included in the various other items of work, and no additional compensation will be allowed thereafter. However, the City of Brentwood shall pay all permit fees.

The Contractor shall notify the Engineer in writing of pending permit delays five (5) working days before delay will affect progress of work. Additional working day calculations will only be allowed to start five (5) days after Contractor notifies the Engineer of pending permit delays.

## H. TRUCK/HAUL ROUTE

The Contractor shall familiarize themselves with the City of Brentwood's approved roadways that may be used for hauling material and equipment to and from the job site. Some existing roads may have inadequate pavement sections to support fully loaded trucks or other heavy equipment that shall not be used.

The proposed truck/haul route shall be submitted prior to the start of construction for review and approval by the City Traffic Engineer.

Full compensation for preparing a truck/haul route plan and submitting it to the City Traffic Engineer for review and approval shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed thereafter.

## I. WATERING

Watering shall conform to the Provisions in Section 10-6, "Watering," of the Caltrans Standard Specifications and these Specifications.

Water for construction purposes (with the exception of water to be used for the waterline testing, as specified in the Standard Specifications), shall be non-potable water and shall be the responsibility of the Contractor. The Contractor shall make arrangements for obtaining and purchasing water for construction of the project. The City cannot guarantee the availability of construction water for this project. The Contractor will be required to obtain water through their own means if water is not available through the City, at their own expense at no additional cost to the City.

Full compensation for providing watering shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed thereafter.

#### J. DUST CONTROL

Dust control shall conform to the provisions in Section 10-5, "Dust Control," of the Caltrans Standard Specifications and these Specifications.

Attention is directed to "Dust Palliative" of these Specifications regarding the use of a dust palliative to control dust.

The Contractor will be responsible for preventing airborne dust nuisance from the construction site by watering and/or treating the site in such a manner to confine dust particles to the immediate surface of work.

Full compensation for providing dust control shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed thereafter.

#### K. DUST PALLIATIVE

Furnishing and applying dust palliative shall conform to the provisions in Section 18, "Dust Palliatives," of the Caltrans Standard Specifications.

Full compensation for providing dust palliative shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed thereafter.

#### L. ELECTRIC POWER

The Contractor shall furnish electric power required to perform the work.

Contractor is responsible for coordinating with PG&E to energize all electrical systems for the project. Contractor shall be responsible for payment of electricity costs until all electrical facilities are accepted by the City. Contractor is responsible for maintenance of the electrical systems until acceptance of the entire project by the City.

The Contractor shall coordinate electrical with PG&E to coordinate all street lights shutdown and energization per PG&E's LS-2A Rate schedule.

Full compensation for providing electric power shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed thereafter.

## **SECTION TS-2      LINES AND GRADES**

Lines and Grades shall conform to the provisions of Section 7.17 "Lines and Grades" of the General Conditions, and these Specifications.

One complete set of stakes for each of the following items will be set by the Engineer after notification has been given to the Engineer by the Contractor as specified in Section 7.17 of the General Conditions. Contractor to specify stake offset distances for all staking prior to staking request.

### **A.    LIMITS OF WORK**

One set of stakes for line only, every 100 feet along the right-of-way or easement boundary and at angle points. No additional stakes will be set for limits of grading or limits of clearing and grubbing.

### **B.    GRADING**

Offset stakes to curb are to be provided for rough grading every 50 feet o.c. on tangents, at angle points, BC, EC, grade breaks, and ditch flow lines. Offset distance to be determined at time of construction. Stakes will show cut/fill to the 0.1 foot.

Slope stakes every 50 feet, at grade breaks and angle points for slopes.

### **C.    CURB AND PAVEMENT**

One set of curb stakes or pavement stakes to be used for final alignment and grade control. The items included in this description are curb and gutter and edge of pavement.

Stakes are to be set every 50 feet o.c. on tangents, 25 feet o.c. on curves, BC, EC, angle points, and grade breaks. Stakes are to be set at radius points for curves with radii less than 50 feet. Stakes will show cut/fill to the 0.1 foot.

No additional stakes or marks for alignment or grade control will be set by the Engineer. The Contractor shall provide separate grade controls for the subbase, base and surfacing as are necessary to secure conformance with the plans and final stakes.

### **D.    DOMESTIC WATER**

Stakes for line and grade every 50 feet on tangents, 25 feet o.c. on curves, at angle points and grade breaks. Two stakes for grade and location at fire hydrants. Additional stake also to be provided for each stub and service required. Stakes will not be provided for valves, fittings, couplers, etc.

## E. NON-POTABLE WATER

Stakes for line and grade every 50 feet on tangents, 25 feet o.c. on curves, at angle points and grade breaks. Additional stake also to be provided for each stub and service required. Stakes will not be provided for valves, fittings, couplers, etc.

## F. EXCLUSIONS TO STAKING

No staking will be provided for temporary bypasses, irrigation and landscaping, signal poles, AC dike, striping and pavement markings, limit of saw cutting, or street sign locations.

The Engineer shall be the sole judge of the adequacy and sufficiency of the stakes and marks for the purpose for which they are set. If the Contractor requests additional stakes, hubs, grades, or marks other than those set by the Engineer, the cost of labor, equipment, and materials required to comply with the Contractor's request shall be deducted from any monies due or to become due the Contractor.

The cost of labor, equipment, and materials involved in resetting stakes destroyed or displaced because of the following reasons, will be deducted from any monies due or to become due the Contractor:

1. Negligence or carelessness in use of construction equipment.
2. Stakes ordered by the Contractor that are not used for a long period of time (as determined by the Engineer) and are lost in the interim.
3. Poor planning of sequence of operations by the Contractor.

A minimum of four (4) hours of 2-man survey crew time will be charged for all re-staking.

## **SECTION TS-3 OBSTRUCTIONS AND OTHER UTILITY'S WORK**

### A. GENERAL

Attention is directed to Section 7.12 "Existing Utilities" of the General Conditions, Section 5-1.36, "Property and Facility Preservation", and Section 15, "Existing Facilities," of the Caltrans Standard Specifications.

Due care shall be exercised to avoid injury to existing improvements, trail and features appurtenant, adjacent property, roadside trees, shrubs, and other plants that are not shown on the plans to be removed.

Trees, shrubs, plants, power poles, pole lines, fences, traffic signs, markers, monuments, and all structures above and below ground that are not slated for removal shall be protected from injury or damage. The Contractor, if ordered by the Engineer, shall provide and install suitable safeguards, approved by the Engineer, to protect such objects from injury or damage. If such objects are injured, damaged, or removed by reason of the Contractor's operations, they shall be immediately replaced or restored at the Contractor's expense.

The Contractor's attention is directed to the existence of certain underground facilities that may require special precautions be taken by the Contractor to protect the health, safety and welfare of workmen and of the public. Facilities requiring special precautions include, but are not limited to: conductors of petroleum products, oxygen, chlorine, and toxic or flammable gases; natural gas in pipelines greater than 150 mm (6 inches) in diameter or pipelines operating at pressures greater than 415 kPa (60 psi) gauge; underground electric supply system conductors or cables, with potential to ground of more than 300 volts, either directly buried or in duct or conduit which do not have concentric grounded conductors or other effectively grounded metal shields or sheaths.

The Contractor shall notify the Engineer and the appropriate regional notification center for operators of subsurface installations at least 2 working days, but not more than 14 calendar days, prior to performing any excavation or other work close to any underground pipeline, conduit, duct, wire or other structure. Regional notification centers include but are not limited to the following:

Notification Center		Telephone Number
Underground	Service	1-800-642-2444
Alert-Northern California (USA)		1-800-227-2600

If such facilities are not located on the plans in both alignment and elevation, no work shall be performed in the vicinity of said facilities until the owner, or his representative, has located the facility by potholing, probing, or other means that will locate and identify the facility.

The Contractor shall take care to avoid working in any area of the project which may conflict with the work under way by the utility companies. City water, storm drain, sanitary sewer, Pacific Gas and Electric, California Resource Corporation, East Bay Municipal Utility District, East Contra Costa County Irrigation District and Contra Costa Water District facilities exist within the project area. The Contractor shall exercise extreme caution when excavating or performing any work in the vicinity of these facilities and will adequately shore and protect all facilities to prevent any horizontal or vertical movement. The Contractor shall be responsible for the repair and replacement of these or any other facilities damaged during construction. A minimum of two (2) working days prior to beginning of construction, the Contractor shall notify Underground Service Alert (USA), telephone 800-227-2600 to have existing facilities marked in the field. The Contractor shall record the USA order number and furnish the order number to the Engineer prior to performing any excavations.

The Contractor shall cooperate completely with all utility companies having facilities within the project area.

Any delay caused by the utility companies in completion of their work will not entitle the Contractor to additional compensation or working days.

## B. OTHER EXISTING UTILITIES

The following utilities may have facilities within the Project area:

1. Pacific Gas and Electric (Land Management)  
Contact: Kenneth Filoso (925) 459-7220  
1850 Gateway Blvd., 7<sup>th</sup> Floor, 7046d  
Concord, CA 94520
2. AT&T (Telephone)  
Contact: Augustine Arteaga (925) 823-6565  
2600 Camino Ramon, Rm 2N250X  
San Ramon, CA 94583
3. East Contra Costa Irrigation District  
Contact: Ms. Pat Corey (925) 634-3544  
1711 Sellers Avenue  
Brentwood, CA 94513
4. California Resources Corporation  
Contact: Harry Ralston (707) 374-4102  
2692 Amerada Road  
Rio Vista, CA 94571
5. Caltrans  
Contact: Parminder Dhillon (925) 286-4408  
111 Grand Avenue  
Oakland, CA 94623

## SECTION TS-4 ROADWAY IMPROVEMENTS

### A. MOBILIZATION

Mobilization shall conform to the applicable provisions in Section 9-1.16D, "Mobilization", of the Caltrans Standard Specifications. Separate facilities for the Contractor's use shall be as determined by the Contractor.

#### 1. CONSTRUCTION SITE MANAGEMENT

Work includes a Stage Construction Plan, Spill Prevention and Control, and possible Construction of Temporary Bypasses.

The Contractor shall prepare a detailed Stage Construction Plan and submit it to the City for Approval. The Contractor has the ability to construct temporary access to Concord Avenue at the North & South ends of project area (within the existing Concord Avenue Right of Way) per the approved Stage Construction Plan including all necessary Bypasses to maintain access to Concord Avenue and the Landgraf Property during all construction stages.

The lump sum contract price for “**Construction Site Management**” shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals for the work, including construction of temporary Bypasses.

## B. SPILL PREVENTION AND CONTROL

Keep material or waste storage areas clean, well-organized, and equipped with enough cleanup supplies for the material being stored. Implement spill and leak prevention procedures for chemicals and hazardous substances stored on the job site. Whenever the Contractor spills or leaks chemicals or hazardous substances at the job site, the Contractor is responsible for all associated cleanup costs and related liability. Report minor, semi-significant, and significant or hazardous spills to the Qualified Stormwater Practitioner (QSP) manager. The QSP manager must notify the Engineer immediately.

Spill Prevention & Control shall conform to the provisions in Section 13-4.03B, “Spill Prevention and Control,” of the Caltrans Standard Specifications.

The lump sum contract price for “**Spill Prevention & Control**” shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals for the work preventing and controlling spills, clean-up, etc.

## C. TRAFFIC CONTROL

Flashing arrow signs are to conform to the requirements of Section 12-3.30, “Flashing Arrow Signs” of the Caltrans Standard Specifications. Flashing arrow signs shall be Type II.

Attention is directed to the Caltrans Standard Specifications: Section 7-1.03, "Public Convenience," Section 7-1.04 "Public Safety," Section 12-3.04 "Portable Delineators," Section 12-1 "Temporary Traffic Control - General," Section 4-1.05, "Changes and Extra Work," and Section 8-1.06 "Suspensions," and these Technical Specifications.

A minimum of five (5) working days prior to the pre-construction meeting, the Contractor shall submit for the Engineer's approval, a traffic control plan prepared and stamped by a Professional Engineer registered in the State of California for the routing of traffic during construction, including the location of advance warning signs. These detailed plans shall also include the location of public convenience and advance warning signs to be used during the construction. The Contractor's attention is directed to the most recent edition of the California Manual on Uniform Traffic Control Devices (CA-MUTCD) for a guide to sign placement, taper lengths, etc. The plan shall be submitted for discussion at the pre-construction meeting. Minor or unexpected traffic control changes shall be submitted in writing to the Engineer no less than two (2) working days before the change for approval. In no case shall changes be made without submittal to and approval of the Engineer. The traffic control plans must be approved prior to beginning work.

### 1. TRAFFIC CONTROL SUPERVISOR

The Traffic Control System shall be placed, maintained, and removed under the direct supervision of a person who is certified by either the Institute of Transportation Studies

(ITS), the American Traffic Safety Services Association (ATSSA), the International Municipal Signal Association, the State of California Department of Transportation (Caltrans) or other agency as approved by the Engineer as having successfully completed training in the design and operation of work zone traffic control.

The Contractor shall designate in writing the person who shall have the responsibility for supervising the activities associated with the Traffic Control System. This designation, along with proof of certification, shall be provided to the Engineer for his approval, two (2) working days in advance of any planned activity that requires traffic control. The person designated shall have the authority to stop the work if necessary.

Failure of the designated person to be present at the job site when any part of the Traffic Control System is in place shall be considered as failure on the part of the Contractor to perform a provision of the contract, and as such, the Engineer may, in accordance with Section 8-1.06 "Suspensions" of the Caltrans Standard Specifications, suspend all work until such time satisfactory arrangements have been made to have a certified person on the job site at all times when the Traffic Control System is in place. No additional compensation or additional working days will be allowed by reason of such suspension. The days on which the suspension is in effect shall be considered working days if such days are considered working days within the meaning of the definition set forth in Section 1-1.07 of the Caltrans Standard Specifications, "Definitions."

No existing pavement shall be removed until all necessary traffic control devices have been installed to route traffic onto other paved portions of the roadway and such removal has been approved by the Engineer.

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. The Contractor's trucks or other mobile equipment which leave a traveled 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. The Contractor shall not use any private driveways or property to turn around or for temporary stockpile of material or staging areas unless written permission is obtained from the property owner by the Contractor. Copies of such permission shall be provided to the Engineer prior to the use of the private property.

If any component in the traffic control system is displaced, or ceases to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair said component to its original condition or replace said component and shall restore the component to its original location. All traffic control items required by the Engineer to maintain traffic shall be furnished and installed by the Contractor.

If the Contractor does not furnish and maintain all signs, traffic control devices, or surfacing in accordance with these Specifications, the City shall temporarily suspend the work in accordance with the Caltrans Standard Specifications until deficiencies are

corrected or shall perform the required operations and bill the Contractor at double the rate of all City expenses.

Section 12-1 "Temporary Traffic Control - General" of the Caltrans Standard Specifications is amended as follows: The Contractor shall pay fully the cost of furnishing all flagmen, including transporting flagmen, to provide for passage of public traffic through the work site.

The adjustment provisions in Section 4-1.05, "Changes and Extra Work" of the Caltrans Standard Specifications shall not apply to the item of traffic control system. Any adjustment in compensation for traffic control system due to an increase or decrease in the amount of traffic control system required by changes ordered by the Engineer, or by increase or decreases in quantities in the Engineer's Estimate greater than 25% will be made on the basis of the cost of the increased or decreased traffic control necessary. Such adjustment will be made on a force account basis as provided in Section 9-1.04, "Force Account," of the Caltrans Standard Specifications for increased traffic control system required by work which is classed as extra work, as provided in Section 4-1.05, "Changes and Extra Work" of the Caltrans Standard Specifications, will be paid for as part of said extra work.

The contract lump sum price paid for "**Construction Traffic Control**" shall include full compensation for preparing and implementing the traffic control plan, for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in flagging, placing, removing, storing, maintaining, moving to new locations, replacing, and disposing of the components of the traffic control system, including concrete barriers and crash cushions, as specified in the Caltrans Standard Specifications, these Technical Specifications, and as directed by the Engineer.

#### D. REMOVE EXISTING FENCE

The work performed in connection with various existing roadway facilities such as existing fence shall conform to the provisions in Section 15, "Existing Facilities," of the Caltrans Standard Specifications and these Specifications.

Any fence or segment of fence disturbed by the Contractor during the performance of the contract work shall also be repaired at the Contractor's expense. New materials shall be used and such material shall be a replacement of the original fence in regards to type of fencing, posts, and construction

All existing fence removed for construction shall be replaced with temporary fencing until construction is complete and the existing fence is replaced. Type and location of temporary fence shall be adequate to contain animals, to limit access, or to protect property as may be required and as approved by the Engineer.

Temporary fencing and removal of fences will be considered incidental to the roadway construction and payment shall be included in other items of work and no additional compensation will be allowed thereafter.

## E. DEMOLITION

Items noted for removal/demolition on the plans shall be removed and disposed of in accordance with Section 15, "Existing Facilities," of the Caltrans Standards and Specifications.

Existing AC pavement that is designated for grinding on the demolition plan (along existing Jeffery Way and Empire Avenue) will be ground and removed off-site. Pavement not designated for removal will be preserved in place.

The contract lump sum price paid for "**Demolition**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in removal and disposal of all items on the plans slated for removal and/or demolition as shown on the plans, as specified in the Standard Specifications, these Technical Specifications, and as directed by the Engineer.

## F. PROTECTION OF EXISTING STREET BARRICADE

The existing street barricade at the west end of Empire Avenue shall be protected in place during construction. The contractor shall be responsible for replacing the barricade if damage occurs during construction.

## G. CLEARING AND GRUBBING

Clearing and Grubbing shall conform to the provisions of Section 16, "Clearing and Grubbing," of the City of Brentwood Standard Specifications, 17-2, "Clearing and Grubbing," of the Caltrans Standard Specifications and these Technical Specifications.

1. Existing structures, foundations, pavement sections, trash, debris, rip-rap, loose fill, trees (not included in landscaping), roots, tree remains, organic soil, and other rubbish shall be removed or otherwise disposed of so as to leave the areas that have been disturbed with a neat and finished appearance, free from debris.
2. Septic tanks, pump stations, and other underground structures, where they exist on the site, shall be totally removed, including all drain fields and connected lines, under the observation of the Engineer and in accordance with the Contra Costa County requirements. Depressions left from any removals shall be backfilled with suitable material and compacted in accordance with these Specifications. County permits shall be obtained by the Contractor.
3. The methods for removal of subsurface irrigation and utility lines will depend on the depth and location of the line in relation to planned improvement. Unless otherwise specified, remove the pipe and compact the soil in the trench according to the applicable portions of these Specifications.
4. Abandoned water wells, where encountered on the site, shall be sealed and capped according to the requirements of the Contra Costa County Health Department. The strength of the cap shall be at least equal to the adjacent soil. The final elevation of

the top of the well casing shall be a minimum of 36 inches below any adjacent grade prior to any grading or fill operations. County permits shall be obtained by the Contractor. The Contractor shall provide an alternative potable water supply that meets the requirements of the City of Brentwood and the State Department of Health Services prior to disconnecting and abandoning any wells. The Contractor will be responsible for any costs associated with this work and no additional compensation will be allowed thereafter.

5. From the surface upon which fill is to be placed, organic matter shall be stripped to a minimum depth of 6 inches. Stripped material shall be removed from the site at the Contractor's expense or stockpiled for later use in landscaping if the stripped material has an organic content in excess of 3% by weight and as approved by the City's Geotechnical Engineer. This material shall not be used as compacted fill. The surface shall then be scarified to a depth of at least 8 inches and until the surface is free from ruts, hummocks, or other uneven features which would tend to prevent uniform compaction by the equipment to be used.
6. Ditches and channels that are to be filled shall be stripped of organics, mud, loose soil, and debris. The bottoms of these excavated areas shall be scarified to a minimum depth of 8 inches, moisture conditioned to 3 percentage points above optimum moisture content, and re-compacted to not less than 95% relative compaction. Locations of filled ditches and channels shall be recorded by the Contractor and record drawings shall be submitted to the Engineer.
7. Where loose, un-compacted fill occurs at the surface of the site, the materials shall be excavated to expose firm natural ground or previously compacted fill. The exposed surface shall then be prepared to receive fill in accordance with the applicable portions of these Specifications and according to the Soils Report.
8. The final stripping and excavation shall be approved by the Engineer before further grading is started.
9. All trees and stumps within the right of way.

Vegetation, debris, and trash shall be cleared and grubbed only within the excavation lines. All existing vegetation, outside the areas to be cleared and grubbed, shall be protected from injury or damage resulting from the Contractor's operations.

All activities controlled by the Contractor, except cleanup or other required work, shall be confined within the limits of work.

Nothing herein shall be construed as relieving the Contractor of his responsibility for final cleanup of the job-site as provided in Section 4-1.13 "Cleanup," of Caltrans Standard Specifications.

The bid quantity is a FINAL PAY QUANTITY and will be adjusted only for changes in work in accordance with Section 9-1.02C "Final Pay Item Quantities" of the Caltrans Standard Specifications.

The contract lump sum price paid for “**Clearing and Grubbing**” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in clearing and grubbing including the removal and disposal of all the existing materials as shown on the plans, as specified in the City of Brentwood Standard Specifications, Caltrans Standard Specifications, these Technical Specifications, and as directed by the Engineer.

## H. EARTHWORK

Earthwork shall conform to the provisions in Section 19, “Earthwork,” of the City of Brentwood Standard Specifications, Section 19, “Earthwork,” of the Caltrans Standard Specifications, and these Specifications.

In lieu of the provisions in Section 19-1.03C, “Grade Tolerance,” of the Caltrans Standard Specifications, the surface of the grading plane at any point shall not vary more than 0.05 feet above or below the grade established by the Engineer.

No site earthwork shall be performed without the physical presence or approval of the Engineer or representative. The Contractor shall notify the Engineer at least two (2) working days prior to commencement of any aspect of the site earthwork.

Export sites are at the contractor’s discretion and must be verified with the City before construction begins. Any additional fill material required for the construction of this project shall be imported to the site by the Contractor. No additional compensation for import or export of materials will be allowed except as noted on specific line items of the bid schedule.

After the completion of clearing, grubbing, and stripping, soil exposed in areas to receive structural fill, or pavements shall be scarified to a depth of 6 inches, moisture conditioned to 3 percentage points above optimum moisture content, and recompacted to not less than 95% relative compaction.

If soft, saturated, and unstable soils are encountered during subgrade preparation, these materials shall be overexcavated to a depth below subgrade as recommended by the Geotechnical Engineer. The bottom of the overexcavation shall then be completely covered with an approved ground stabilization fabric such as Tensar TX 130S or equivalent as approved by the Engineer. The over excavation shall then either be backfilled with suitable material recompacted to 95% relative compaction or Class 2 Aggregate Base if the road section will be placed directly on the recompacted backfill. The actual depth and extent of soft/loose soil excavation, ground stabilization, suitable material, and compaction requirements shall be determined by the Geotechnical Engineer during construction. Suitable material shall be defined as material that is free from deleterious and organic material.

In proposed pavement areas, soil subgrade shall be scarified, moisture conditioned, recompacted, and rolled to provide a smooth firm surface in conformance with the project Geotechnical Report. Subgrade soils shall be proof-rolled prior to placement of aggregate base. Proof-rolling shall be performed with the heaviest available rubber-tired construction equipment and shall be observed by the Engineer.

## 1. WATER CONTROL

Water control shall conform to the provisions of Section 19-3.03B(5), "Water Control and Foundation Treatment," of the Caltrans Standard Specifications and these Specifications. The Contractor shall construct and maintain all necessary ditches, cofferdams, channels, drains, sumps, and temporary protective works, and shall furnish, install and maintain all necessary pumping and other equipment for controlling flows, including ground water in the pipe trenches and structure excavations, so that no foundation will contain any free water.

Full compensation for water control shall be included in the contract price paid per cubic yard for "**Earthwork**" and no additional compensation will be made thereafter.

## 2. ROADWAY EXCAVATION

Roadway excavation is calculated from all areas where existing surface is ABOVE the subgrade of the new roadway and covers excavation of all existing material. This excavation also includes excavation of removing any excess dirt in the median island and parkways that is not necessary for the landscaping and planting work. Excavated material which is suitable for reuse as embankment may be used therein. Material that is excess or unsuitable for reuse, as determined by the Engineer, shall become the property of the Contractor and shall be removed from the project without additional compensation.

The roadway structural sections shown are the minimum based on the City of Brentwood Engineering Procedures Manual and the Soils Report for this project. The Soils Engineer shall perform "R" value tests at locations specified by the City Engineer upon completion of the rough subgrade in order to verify pavement section design.

Slopes cut into firm native soil and rock shall not be steeper than two horizontal to one vertical (2H:1V) unless indicated otherwise in the project Geotechnical Report or on the plans.

Excavated material unsuitable for embankment construction, as determined by the Engineer, shall become the property of the Contractor and shall be disposed of outside the road right-of-way in accordance with the provisions in Section 5-1.20B(4) "Contractor-Property Owner Agreement," of the Caltrans Standard Specifications.

The bid quantity is a FINAL PAY QUANTITY, which is not subject to measurement, and will be adjusted only for changes in work in accordance with Section 9-1.02C, "Final Pay Item Quantities" of the Caltrans Standard Specifications.

Contractor shall find an adequate place to dispose of the excess excavated material that is unsuitable for reuse in the project. Prepare and submit a hauling rout plan to the City and obtain approval from City Engineer.

The contract price paid per cubic yard for "**Earthwork**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work

involved in performing earthwork excavation, including excavation, water and dust control, and removal and disposal of excess or excavated material that is unsuitable for reuse in the project, as shown on the plans, as specified in the City of Brentwood Standard Specifications, Caltrans Standard Specifications, these Technical Specifications, and as directed by the Engineer.

Over excavation of silt saturated and unstable soils, and backfill with suitable material or Class 2 Aggregate Base, including compaction will be paid for as extra work as provided in Section 4-1.05 "Changes and Extra Work" of the Caltrans Standard Specifications.

#### I. GEOGRID

Geogrid shall be Tensar TX 130S or approved equal. The installation shall conform to the provisions in Section 19, "Earthwork", of the City of Brentwood Standard Specifications, and these specifications.

Geogrid shall be installed under all proposed pavement areas.

The contract price paid per square foot for "**Geogrid**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in geogrid installation as specified in the City of Brentwood Standard Specifications, these Specifications, as directed by the Engineer, and the manufacturer's recommendations.

#### J. EROSION AND SEDIMENT CONTROL

The Contractor shall conduct and schedule its operations, and follow and implement best management practices to prevent the discharge of pollutants. The Contractor shall also conform to the following requirements:

- a) Sediments generated on the Work sites shall be contained on the Work sites using appropriate BMPs.
- b) No construction-related materials, waste, spill, or residue shall be discharged from the Work sites to streets, drainage facilities, receiving waters, or adjacent property by wind or runoff.
- c) Non-storm water runoff from equipment, vehicle washing, or any other activity shall be contained within the Work sites using appropriate BMPs.
- d) Efforts shall be taken to control and reduce erosion. Erosion susceptible slopes shall be covered, planted or otherwise protected in a way that prevents discharge from the Work site.

##### 1. STORM WATER POLLUTION PREVENTION PLAN

The Contractor shall be responsible for implementing the Storm Water Pollution Prevention Plan (SWPPP) and Erosion and Sediment Control Plan (ESCP) as prepared for the City in conformance with the California Construction General Permit (CGP). The SWPPP and ESCP address intended methods to reduce the discharge of pollutants contained in storm water runoff during construction of the

project. The City of Brentwood has filed a Notice of Intent (NOI) requesting permit coverage for this project.

The SWPPP shall be kept at the site during construction and made available upon request of a representative of the Regional Water Quality Control Board or other local agency. The City shall amend the SWPPP for any change in construction or operations that may affect the discharge of pollutants to surface water, ground waters, or storm drain system.

The Contractor shall be responsible for implementing, maintaining, and repairing all BMPs as described in the approved SWPPP for the duration of the construction contract. The Contractor shall make any repairs to the BMPS and amend the SWPPP if, in the opinion of the Engineer, the Contractor is not in compliance with the SWPPP. Failure to make the necessary repairs or other maintenance when directed by the Engineer shall result in the necessary repair work being done by City forces, and the Contractor will be billed at double the rate of all City expenses. In addition, the Contractor shall be responsible for any fines imposed by the Regional Water Quality Control Board or other agency as a result of noncompliance, negligence, or violation of permit conditions.

The contract lump sum price paid for "**Erosion Control**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in implementing the pollution controls outlined in the ESCP as shown on the plans, as specified in these Technical Specifications, and as directed by the Engineer.

The contract lump sum price paid for "**SWPPP Measures**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in implementing the pollution controls outlined in the SWPPP as shown on the plans, as specified in these Technical Specifications, and as directed by the Engineer.

#### K. SAW CUTTING & GRINDING

Contractor shall saw cut, remove and dispose of existing pavement at locations shown on plans (see the improvement plans and the demolition plan for pavement removal limits). At locations of new to existing pavement joints, contractor shall also grind existing asphalt in conformance with City of Brentwood Standard Plan ST-37.

The contract price paid per linear foot of "**Sawcut and Grind Existing AC Pavement**" includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in grinding areas, complete in place, as shown on the plans, as specified in the City of Brentwood Standard Plan and Specifications, Caltrans Standard Specifications and these Technical Specifications, and as directed by the Engineer.

#### L. TRENCH PATCH

Asphalt concrete shall match existing pavement at locations of a clean face saw cut line as shown on the plans. Contractor shall trench patch areas indicated on the plans per City of

Brentwood Standard Plans ST-25a and ST-25b. If the clean face of the saw cut line becomes damaged prior to placement of the asphalt concrete; contractor shall saw cut back, at contractors own expense, until a clean saw cut line can be established. No compensation will be made for replacement of asphalt concrete outside the limits of the saw cut line shown on the plans.

Aggregate base and asphalt concrete to be used in trench patching shall conform to the City of Brentwood Standard Plans and Specifications and these Technical Specifications.

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

#### M. AGGREGATE BASE (CLASS 2)

Aggregate base shall be Class 2 and shall conform to the provisions in Section 26, "Aggregate Base," of the City of Brentwood Standard Specifications, Section 26, "Aggregate Bases", of the Caltrans Standard Specifications, and these Specifications.

The coarse aggregate (material retained on the No. 4 sieve) shall consist of material of which at least 25% by weight shall be crushed particles as determined by California Test 205.

Aggregate shall conform to the grading and quality requirements as shown in Section 26, "Aggregate Base," of the City of Brentwood Standard Specifications and Section 26, "Aggregate Bases", of the Caltrans Standard Specifications.

Aggregate base shall not consist of any recycled material or products such as "Sierra-Crete" by Dupont, or the like.

The contract price paid per ton of "**Aggregate Base (Class 2)**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in construction of the aggregate base, complete in place, as shown on the plans, as specified in the City of Brentwood Standard Specifications, Caltrans Standard Specifications, and these Technical Specifications, and as directed by the Engineer.

#### N. HOT MIX ASPHALT

Asphalt concrete shall be Type A (1/2" Max., Medium) for surface course and Type A (3/4" Max., Medium) for AC leveling courses and shall conform to the provisions in Section 39, "Hot Mix Asphalt," of the City of Brentwood Standard Specifications, Section 39-2, "Hot Mix Asphalt," of the Caltrans Standard Specifications and these Technical Specifications.

The following is added in addition to City of Brentwood Standard Plans and Specifications Section 39-2, "Hot Mix Asphalt" – Asphalt binder shall be Performance Graded (PG) not the old system Aged Residue (AR) binder. Asphalt binder shall be PG grade 64-10.

Tack coat shall be applied per Section 39-2.01C(3)(f), "Tack Coat," of the Caltrans Standard Specifications.

The application of tack coat shall be considered to be included in the contract price paid per ton for Asphalt Concrete and no separate payment will be made thereafter.

The contract price paid per ton for "**Hot Mix Asphalt Type A**" shall include full compensation for furnishing all labor, materials, tools, equipment, incidentals, and for doing all the work involved in placing and compacting asphalt concrete, complete in place, as shown on the plans and as specified in the City of Brentwood Standard Specifications, the Caltrans Standard Specifications, these Technical Specifications, and the Engineer. No additional compensation will be allowed thereafter.

#### O. FOG SEAL

Fog sealing after paving is required to create a barrier to air and water infiltration of a pavement surface, to arrest low severity raveling, and to create color contrast between traffic markings and the paved surface.

Materials:

- a. Emulsified Asphalt – Emulsified asphalt for fog seals shall meet the requirements of AASHTO M 140 or M 208. Fog seal emulsified asphalt may be diluted with water prior to application but must be diluted at the emulsified asphalt plant and not diluted in the construction field. The residual asphalt content shall not be less than 28 percent by weight of the total mixture.

Construction:

- a. Weather Limitations – Apply fog seal per the following conditions:
  - Ambient or pavement surface temperatures shall be 60°F and rising;
  - Application of the fog seal shall be only during daylight hours;
  - The road surface shall be dry;
  - Suspend fog seal operations when rain is expected before the fog seal emulsified asphalt can set;
  - Temperatures below 40°F are not anticipated for at least 24 hours after application;
  - Sustained winds are less than or equal to 10 mph; and
  - Application shall be completed at least 2 hours before sunset.

Road Surface Preparations:

- a. Cleaning Pavement – Clean the roadway surface by sweeping no more than 30 minutes prior to application of the emulsified asphalt fog seal. However, this 30-min window may be extended if authorized by the City Engineer in cases where extending the time does not jeopardize a clean surface prior to fog seal operations. Sweep the pavement with a motorized broom to remove loose material. Clean depressions not reached by the motorized broom with a hand broom. Clean the outer edges of the pavement to be sealed including an adjacent paved shoulder.

- b. Protecting Accessories – Cover utility castings (manholes, gate valve covers, catch basins, sensors, etc.) to prevent coating with emulsified asphalt. Suitable coverings include plywood disks, Kraft paper, roofing felt, or other approved methods. Remove the protective coverings before opening the road to traffic.

The contract price paid per square foot for “**Fog Seal**” shall include full compensation for all costs of furnishing and applying the material as specified, including cleaning the existing pavement, stationing, all labor, equipment, and materials necessary for the placement of the fog seal for full lane coverage, sweeping of any loose aggregate after construction, and other requirements as specified. No additional compensation will be allowed thereafter.

P. TYPE A CONCRETE CURB, GUTTER & SUB DRAINS

Concrete curb and gutter shall be constructed of Class "B" concrete in conformance with City of Brentwood Standard Plan ST-23 “Sidewalk, Curb, and Gutter”, including curb underdrains (subsurface drains) in conformance with City of Brentwood Standard Plan ST-24 “Subsurface Drain Below Curb and Sidewalk”, and as detailed on the plans, Section 90, “Concrete,” of the City Standard Specifications, Section 73, "Concrete Curbs and Sidewalks," of the Caltrans Standard Specifications, and these Technical Specifications. Concrete curb and gutter shall be constructed to the form and dimensions shown on the plans, with inch score marks at 10 foot intervals.

Concrete curb and gutter shall be water tested, and any "Bird Bath" or depression shall be repaired at Contractor's expense.

Aggregate base shall conform to these Technical Specifications and shall be included in the unit price per linear foot of Concrete Curb and Gutter.

The installation of the curb cuts and associated apron shall be considered to be included in the contract price paid per lineal foot for concrete curb and gutter and no separate payment will be made.

The contract price paid per lineal foot for “**Type A Concrete Curb and Gutter and Sub Drains**” shall include full compensation for furnishing all labor, materials, tools, equipment, incidentals including all aggregate base, perforated pipe, filter fabrics, reinforcement, saw cuttings, backfill, compaction, watering and concrete curing compound, and for doing all the work necessary to install Type A Concrete Curb, Gutter and Sub Drains complete in place, as shown on the plans, as specified in the City of Brentwood Standard Plans and Specifications, Caltrans Standard Specifications and these Technical Specifications and as directed by the Engineer.

Q. STRIPING AND PAVEMENT MARKERS

Traffic stripes and pavement legends including crosswalks disrupted by the Contractor during construction shall be restored to the existing or better condition, as specified in Section 84, “Traffic Stripes and Pavement Markings” and Section 85, “Pavement Markers” of the Caltrans Standard Specifications as modified herein, and as directed by the City Engineer. Traffic stripes and pavement legends shall be thermoplastic.

Configuration of traffic stripes, pavement markings and crosswalks shall conform to the detail and methods as set forth in the latest issue of the State of California, Department of Transportation Manual on Uniform Traffic Control Devices unless specifically modified on the Plans.

The contract price paid per lump sum for **“Striping and Pavement Markers”** shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in installation of the striping and pavement markers for Empire Avenue according to existing conditions or as shown on the plans, as specified herein, and as directed by the City Engineer. No additional compensation will be allowed thereafter.

## **SECTION TS-5 TRENCH EXCAVATION AND BACKFILL**

Earthwork shall conform to the provisions of Section 19, "Earthwork," of the City of Brentwood Standard Plans and Specifications and the Caltrans Standard Specifications. Trenches shall be excavated and backfilled as shown on the plans, as specified in these Technical Specifications, and as directed by the Engineer or designee. The City will retain an independent laboratory to sample and test each potential source of pipe bedding and backfill materials. The corrosive properties of the potential pipe bedding and backfill material shall be assessed. All fill materials shall have a minimum electrical resistivity greater than 3,000 ohm-centimeters, chlorides and sulfates less than 100 parts per million (ppm) each, and pH within a range of 5.5 to 8.5. For concrete structures, the minimum electrical conductivity should exceed 1,000 ohm-centimeters, the chloride should be less than 500 ppm, and the pH should be between 6.0 and 8.5. Approval by the Engineer is required of the trench and bedding material before trench backfill operations start.

Trenches in existing pavement shall be constructed in accordance with the details provided in the civil improvement plans and the City of Brentwood Standard Plans and Specifications.

### **A. WATER CONTROL AND DEWATERING**

Water control shall conform to the provisions of Section 19-3.03B(5) “Water Control and Foundation Treatment” of the Caltrans Standard Specifications and these Technical Specifications. The Contractor shall submit a plan to the Engineer for the proposed method of dewatering (if required) five (5) days prior to the pre-construction meeting requiring dewatering. The plan shall include all information regarding excavation phasing; pump and pipe location; desilting method; discharge location; and any other applicable information.

All water encountered in the excavation shall be disposed of by the Contractor in such manner as will not damage public or private property or create a nuisance or health menace. The Contractor shall furnish, install, and operate pumps, pipes, appliances and equipment of sufficient capacity to keep all excavations and access free from water until the excavations are backfilled, unless otherwise authorized by the Engineer. The Contractor shall furnish and install tarpaulin to secure and protect trench walls and bottoms to prevent erosion and collapsing of trenches.

The Contractor shall provide all facilities necessary to conduct water to the pumps. Water, if odorless, may be discharged into an existing storm drain in a manner per NPDES

requirements and as approved by the Engineer. A means shall be provided for desilting the water before discharging.

Dewatering system shall remain functional between shifts, on holidays, on weekends, or during work stoppages until all the backfill is placed to avoid movement of the pipe.

The cost of water control and dewatering shall be considered as included in the unit costs for pipe installation and no additional compensation will be made.

## B. EXCAVATION

The Contractor shall do all excavation of whatever substance is encountered to the lines and grades shown on the plans. During trench excavation, any organic material or particles, lumps, or rocks larger than 2½ inches in maximum dimension removed from the excavation shall be disposed off-site. Where it becomes necessary to excavate beyond the limits of normal excavation lines in order to remove boulders or other interfering objects, the void remaining after the removal of the boulders shall be backfilled with suitable material and densified, as approved by the Engineer. When the work limits allow, material suitable for trench backfill may be stockpiled along the side of the trench. All such material shall be piled in an orderly manner a sufficient distance from the side of the trench to avoid overloading and to prevent sliding into the trench. Stockpiling of excavated material and all vehicles shall be kept at a minimum lateral distance from the crest of the slope equal to no less than one half the slope height. The Contractor shall do such grading as is necessary to prevent surface water from entering the excavation. The Contractor shall remove and dispose of all water entering the excavation. Disposal of water shall be done in a manner to prevent damage or nuisance to adjacent properties and per the National Pollution Discharge Elimination System (NPDES) requirements.

All operations shall be carried out in an orderly fashion. Backfilling, compacting and clean-up work shall be accomplished as sections of the pipe installation are approved and traffic through the work shall be impeded or obstructed as little as possible.

Trench width shall be per City of Brentwood Standard Plan ST-25 "Trench and Backfill Requirements". The trench bottom shall be free of bumps or hollows and graded to provide uniform support along the length of pipe.

Excess excavated material and material unsuitable for backfill shall become the property of the Contractor and shall be removed and disposed of away from the job site at the Contractor's expense. The cost of removal and disposal of excess or unsuitable material shall be considered as included in the unit costs for the pipe installation and no additional compensation will be made thereafter.

## C. TRENCH STABILIZATION

Whenever the bottom of the trench is soft, rocky, or, in the opinion of the Engineer, otherwise unsuitable as a foundation for the pipe, the unsuitable material shall be removed to a depth such that when replaced with trench stabilization material the trench is stable and in conformance with these Technical Specifications. Trench stabilization material for

backfilling the trench below the pipe shall conform to the requirements for pipe bedding material so that it will provide a stable and satisfactory foundation. Alternate backfill materials and methods may be used with the approval of the City Engineer.

The costs associated with trench stabilization shall be considered as included in the unit costs for the pipe installation and no additional compensation will be made thereafter.

#### D. PIPE BEDDING

Pipe bedding shall be placed above and below the pipe to the lines and grades shown on the plans.

Bedding material shall be placed to approximately the same elevation on both sides of pipe to prevent unequal loading and displacement of the pipe. The difference in elevation of the bedding backfill on either side of pipe shall not exceed six (6) inches at any time.

Bedding material shall consist of Class 2 Aggregate Base,  $\frac{3}{4}$  inch maximum –  $\frac{3}{4}$  clean (not crushed) conforming to Section 26, "Aggregate Base," of the City of Brentwood Standard Specifications, Section 26, "Aggregate Bases," of the Caltrans Standard Specifications, and of these Technical Specifications. Controlled Low Strength Material (CLSM) may be used for backfill in the pipe zone above the invert of the pipe. CLSM shall consist of Portland cement, aggregate, water, and approved admixtures conforming to the following:

1. Portland Cement: ASTM C150, Type II.
2. Aggregate: Concrete sand, selected material from the excavation, imported material, or a combination thereof as approved by the Engineer. Maximum aggregate size shall be  $\frac{3}{4}$  to 1 inch. The soluble sulfate content shall not exceed 0.3% by dry weight. No recycled class 11 aggregate base and shall not consist of any recycled material or product such as, "Sierra-Crete," by DuPont or the like will be allowed.
3. Water: Potable quality.  
Proportion the CLSM to be a flowable, nonsegregation, self-consolidating low shrink slurry. The Contractor shall determine the materials and proportions used to meet the requirements of these Technical Specifications.

The unconfined compressive strength at seven (7) days shall be a minimum of 100 psi and a maximum of 300 psi.

The temperature of the CLSM discharged into the excavation shall be below 90 degrees Fahrenheit.

Contractor shall develop mix design using samples from actual stockpiles to be used. Submit mix design to Engineer at least fourteen (14) working days prior to use of the material in the Work. Obtain approval of the mix design and strength results from Engineer.

Bedding material, excluding CLSM, shall be moisture conditioned to 3 percentage points above optimum moisture content, and recompacted to not less than 90% relative compaction as determined by ASTM D1557.

#### E. TRENCH BACKFILL

Trench backfill shall conform to Detail St-25a and St-25b of City of Brentwood Standard Plans and Specifications.

Trench backfill shall consist of the trench area from the top of the pipe bedding to the ground surface, or if within a roadway, to the bottom of the roadway subgrade.

Native excavated material shall be free of all organic material, rubbish, debris, rocks exceed 2½ inches in any one dimension and other objectionable material.

Backfill shall be compacted by impact, vibration, or by a combination of these methods, as approved by the Engineer. However, impact type compactors shall not be used around over PVC pipe until backfill over the top of the pipe exceeds four (4) feet in the number of "lifts" specified in the City of Brentwood Standards. Not jetting will be permitted. All backfill shall be placed in maximum eight (8) inch uncompacted lifts.

Compaction shall be moisture conditioned to 3 percentage points above optimum moisture content, and recompacted to not less than 95% relative compaction, as determined by ASTM D1557.

To minimize excessive live loads on pipe, a minimum of four (4) feet of compacted fill shall be placed over the pipe before impact type compactors are used or power-operated hauling or rolling equipment travels over the pipe.

Trench compaction testing shall be provided at no cost to the Contractor by the City of Brentwood. The Contractor shall excavate test pits and provide access to all depths in all trenches by maintaining shoring system components as needed to allow the technician to enter the trench and perform compaction tests at various depths. Costs for retesting and reinspection due to failure of the tested material to meet the compaction requirements will be borne by the Contractor, with the costs for retesting being deducted from the Contractor's monthly progress payments subtotal prior to deducting any applicable retentions.

Excavating test pits and maintaining the trench shoring system for compaction testing shall be included in the unit price per lineal foot paid for pipe installation and no additional compensation shall be made thereafter.

#### F. TEMPORARY PAVING

The Contractor shall place temporary surfacing promptly after backfilling and shall maintain such surfacing until permanent paving work can be installed.

Temporary paving shall consist of asphalt cutback rolled to provide a smooth surface. Use of a backhoe or other equipment with grooved tires to roll cutback shall be prohibited. All

edges shall be contoured to provide a smooth transition between the existing grade and the cutback surface. The Contractor shall maintain the surface free of depressions, bumps, loose pieces, and other defects at all times.

Temporary pavement shall be replaced with permanent pavement as soon as is practical after the trench is backfilled and as allowed by the Engineer.

Until the permanent pavement is placed, the base rock and temporary asphaltic plant mix at the surface of the trench shall be maintained at all times. Continuous inspection and maintenance of the trench area will be required.

#### G. MEASUREMENT AND PAYMENT

Trench excavation, water control and dewatering, bedding and backfilling, pavement sawcutting, and placement of temporary paving and placement of permanent pavement will be considered as included in the contract unit price paid per linear foot for various types and sizes of pipe installed, and other items of work, and will not be measured as separate items.

### **SECTION TS-6 SHEETING AND SHORING**

Excavations shall be adequately shored and braced so that the earth will not slide, move, or settle and so that all existing improvements of any kind will be fully protected from damage.

Attention is called to Article 6 of "Construction Safety Orders" of the California Division of Industrial Safety which applies to all open excavations made in the earth's surface, including trenches.

Trenches over five (5) feet in depth shall be evaluated for stability prior to personnel entering the trench. Where trenches are deeper than five (5) feet, the Contractor shall comply with the current California Occupational Safety and Health Administration (CAL OSHA) requirements pertaining to trench safety.

At least seven (7) days prior to excavation for any trench five (5) feet or more in depth; trenching shall not begin until the Contractor has submitted to the Engineer a copy of the Contractor's detailed plan for worker protection from the hazards of caving ground during the excavation of such trench.

The Contractor shall be aware that in no case should slope height, inclination, and excavation depths exceed those specified in local, state, or federal safety regulations. Specifically, the Contractor shall be aware of the current OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926.

The Contractor's "responsible person", as defined in 29 CFR Part 1926, shall evaluate the soil exposed in the excavations as part of the Contractor's safety procedures.

In areas where slope trenching will be used, the Contractor shall design temporary construction slopes to conform to OSHA's "Guidelines for Excavation and Temporary Sloping." The temporary slope inclination shall be determined by the Contractor, or responsible subcontractor, based on the subsurface conditions exposed at the time of construction.

The Contractor shall furnish, install and maintain such sheeting, timbering, lagging and bracing as indicated on the Contractor's detailed plans or any additional precautions not specifically set forth necessary to support the sides of the trench. The protection of adjacent structures from movement of the ground and the elimination of the element of danger of life, property, or to existing improvements is the intent of this requirement and shall be the sole responsibility of the Contractor.

Additional support requested by the Engineer shall in no way relieve the Contractor of the Contractor's responsibility for the sufficiency of the Contractor's precautions.

All such sheeting, timbering, lagging and bracing shall, unless otherwise required by the Engineer, be removed during backfilling in such a manner as to prevent any movement of the ground or damage to the piping or other structures.

The Contractor shall submit a copy of the sheeting and shoring plan to the Engineer prior to beginning excavation.

The Contractor shall assess the adjacent utilities tolerance for settlement and lateral movement in communication with the utility's owners. The Contractor's shoring system shall limit movement to less than the tolerable amount.

Damages resulting from the Contractor's operations shall be repaired or replaced to the satisfaction of the respective utility owner at the Contractor's expense.

The full compensation for sheeting and shoring shall be considered as included in the contract price paid for various contract items and no separate payment will be made thereafter.

## **SECTION TS-7          JACK AND BORE PIPELINE INSTALLATION**

### **A. GENERAL**

Installation of the sanitary sewer pipeline by bore and jack in Empire Avenue as shown in the project plans. The Contractor shall be responsible for verifying the existence and exact location of all utilities in the project area which may include potholing. All utilities and infrastructure is to be protected during the installation. The contractor shall supply a drawing detailing the profile of the proposed installation for the City's review after defining the locations of existing utilities and 48 hours prior to commencing the installation. During installation, the contractor shall ensure that the pipe joints do not deflect more than 50% of the manufacturer's recommended maximum deflection.

### **B. 90" CCWD PIPELINE CROSSING**

The Contractor shall install the sanitary sewer pipeline crossing 3 feet beneath the existing 90" Contra Costa Water District (CCWD) pipeline as shown in the plans by the bore and jack method or other method as approved by the City Engineer.

### Casing Pipe

Steel casing pipe shall be of leak proof construction and shall conform to the requirements of ASTM A53 (ASTM A139 Grade "B"). The pipe shall be coated inside and outside with a black bituminous coating a minimum of 5 mils thick. Steel casing pipe shall have minimum yield strength of 35,000 psi. Steel casing pipe sections shall have beveled ends with a single v-groove and shall be full penetration butt welded on the outside of the casing in accordance with the applicable portions of AWWA C206 for field welded waterpipe joints.

All joints of the steel casing shall be butt welded prior to being subjected to the jacking operation. The welded joints shall be wire brushed and painted with bitumastic enamel coating in accordance with AWWA C203. The minimum inside diameter of the casing pipe shall be 4 inches greater than the largest outside diameter of the carrier pipe, joints, or couplings unless indicated otherwise. In all cases, the casing pipe shall be large enough to allow the carrier pipe to be removed subsequently without disturbing the casing pipe, 90" CCWD pipeline, or roadway subgrade. If a larger casing diameter is shown in the plans, the larger diameter shall be used. The minimum thickness for casing pipes shall be 0.250 inches unless otherwise shown on the plans. Larger casing diameters and/or thicker casings shall be installed where required by the agency having jurisdiction for the crossing; as needed to resist H-20 traffic loading under street crossings; as necessary to resist forces transferred to the casing during jacking operations. Cathodic protection of the casing pipe shall be provided as shown in the plans and as specified in section TS-12 "Galvanic Cathodic Protection".

### Carrier Pipe

Carrier pipe for sanitary sewer alignment shall be 12-inch diameter polyvinyl chloride SDR 35 pipe with restrained joints as described in Section TS-9, "Sanitary Sewer Improvements".

### Annular Space

Contractor shall prepare a test plan to verify that annular space between the carrier pipe and casing is filled completely with material that meets City Standard Detail W-18.

### Jacking Equipment

The Contractor shall construct the new sanitary sewer pipeline between the limits indicated on the plans in such a manner that there shall be no disturbance of the existing 90" CCWD pipeline or existing 24" East Contra Costa Irrigation District (ECCID) pipeline. Jacking operations shall be confined to the limits indicated on the plans or as directed by the City Engineer.

Casing pipe shall be installed by jacking as indicated on the plans. The jacking pit shall be of adequate size to accommodate the jacking head, frame, jacks, reaction blocks, added section of pipe, and other material and equipment, and to provide sufficient working space. The pit shall be excavated by suitable methods as specified for normal excavations. The jacking head shall be of suitable bearing pieces to protect the pipe from damage due to the thrust from the jacks, and to transfer that thrust from the jacks to the pipe. The jacking frame, upon which the pipe being jacked will rest, shall be of railroad rails or other suitable steel or wooden members set to the correct line and grade to act as guides for true alignment of the pipe. The jacks shall be of ample capacity to provide more than the anticipated jacking capacity necessary. The reaction blocks shall be suitable to provide for resistance to, and distribution of, the reaction from the jacks. The jacking

apparatus shall be strongly constructed, and set and maintained in proper relative position and alignment.

#### Temporary Steel Plating

Steel plates used to cover jacking pits shall have 1-1/4-inch minimum thickness, be sized to extend a minimum of 12 inches beyond the edges of the pits, be capable of supporting HS20-44 truck loading per Caltrans Bridge Design Specification Manual, have a nonskid surface with a minimum friction coefficient of 0.35 as determined by California Test Method 342, and be attached together by welding or another method approved by the City Engineer.

#### Installation of Jacked Steel Casing Pipe

The City Engineer knows of no manmade obstruction in the path of the alignment. However, the Contractor shall remove or penetrate all natural obstructions encountered. If groundwater is found during construction, the Contractor shall control the flow sufficiently to protect the excavation, pipe, and equipment.

Bentonite may be used for lubricating the casing pipe but shall not be projected ahead of the pipe.

Sluicing or jetting will not be permitted.

Jacking of welded steel pipe shall be in accordance with Section 65 "Concrete Pipe" and 70 "Miscellaneous Drainage Facilities" of the Caltrans Standard Specifications.

Any pipe damaged during the jacking operation shall be repaired by the Contractor at no expense to the City in a manner acceptable to the City Engineer. In the event that the pipe is damaged during jacking operations and the defects cannot be corrected to the satisfaction of the City Engineer, the Contractor shall fill the pipe with sand and seal in a manner to prevent future settlement and begin jacking in an alternative location as designated by the City Engineer.

Deviations in line and grade of the casing pipe will only be allowed to the extent that the carrier pipe can be shifted within the casing to compensate for the deviation. The Contractor shall remove all augers and check the alignment and grade of the leading end of the casing often enough to be able to correct any line or grade deviations while the boring is in progress. In no event shall the line and grade checks be at intervals exceeding 40 feet. The Contractor shall correct any deviation from grade or alignment resulting from the bore at no cost to the City. Proper alignment and elevation of the casing pipe shall be consistently maintained throughout the jacking operation.

Special care shall be taken during the installation of the jacked pipe to ensure that no settlement or caving be caused to the above surface. Any caving caused by the placement of the pipe shall be the Contractor's responsibility and he shall repair any area so affected as directed by the City Engineer.

During jacking operations, particular care shall be exercised to prevent caving ahead of the pipe which will cause voids outside of the pipe. If caving occurs, the Contractor shall install three 1½ inch grout ports, 120 degrees apart every 8 feet along the casing. The City Engineer will inspect each port after opening to confirm the requirement for grouting. Cement grout shall then be pumped into each port under low pressure. Grout shall be placed by positive displacement pumps capable of placing grout at pressures up to 50 psi unless otherwise allowed by the City Engineer.

Grout shall be placed at pressures which are requisite for the conditions encountered and will normally be less than 10 psi except in cases where large cave-ins or other adverse conditions may require higher pressures. Gages shall be provided to indicate grout pressure obtained. All voids shall be filled to the satisfaction of the City Engineer. The Contractor shall not use blasting in making excavations through jacked pipe.

#### Carrier Pipe Rollers (optional)

The carrier pipe shall be installed in the casing using bore spacers with runners on maximum 6 foot centers, as manufactured by Pipeline Seal and Insulator, Inc. model S12G-2 or C12G-2, Cascade Waterworks Mfg. model CCS-ER, or equal. Spacers shall be polyvinyl chloride coated 14 gauge steel or 14 gauge 304 stainless steel. Runners shall be glass reinforced or ultra high molecular weight polymer with high abrasion resistance. Spacers and runners shall be installed in accordance with manufacturer's recommendations.

There must be no metallic contact between the casing and the carrier pipe. The positioning of the spacers should ensure that the carrier pipe is adequately supported throughout its length, particularly at the ends, to offset settling and possible electrical shorting. The end spacer must be within 12 inches of the end of the casing pipe, regardless of carrier/casing differential or type of spacer being used.

The first pipe joint outside all casings shall be within 12 inches of the end of the casing. The casing pipe shall then be filled with sand to the top of the casing pipe. After the lines have been pressure tested, end seal shall be placed at each end of the casing pipe.

The pipe shall be jacked ahead when stopping work each night to create a plug of sufficient thickness to assure material stability.

#### References

This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those other standards are included as references under this section as if referenced directly. In the event of a conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Unless otherwise specified, references to documents shall mean the documents in effect at the time of design, bid, or construction, whichever is earliest. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued.

Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ANSI/AWWA C110/A21.10	American National Standard for Ductile-Iron and Gray-Iron Fittings, 3-inch through 48-inch, for Water and Other Liquids
ANSI/AWWA C111/A21.11	American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
ANSI/AWWA C153/A21.53	AWWA Standard for Ductile-Iron Compact Fittings for Water Service
AWWA C605	Standard for Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water
AWWA C651	Standard for Disinfecting Water Mains
AWWA C900	Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in. (100mm Through 300mm), for Water Distribution
AWWA C905	Standard for Polyvinyl Chloride (PVC Pressure Pipe and Fabricated Fittings, 14 in. through 48 in. (350mm Through 1200mm), for Water Distribution and Transmission
AWWA M23	AWWA Manual of Supply Practices PVC Pipe—Design and Installation, Second Edition
ASTM C923	Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals
ASTM D1784	Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds
ASTM D1785	Polyvinyl Chloride (PVC) Plastic Pipe, Schedules 40, 80, and 120
ASTM D2152	Test Method for Degree of Fusion of Extruded Polyvinyl Chloride (PVC) Pipe and Molded Fittings by Acetone Immersion
ASTM D2241	Polyvinyl Chloride (PVC) Plastic Pipe (SDR-PR)
ASTM D2665	Polyvinyl Chloride (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D3034	Standard Specification for Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings
ASTM F477	Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F679	Standard Specification for Polyvinyl Chloride (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings
ASTM F1057	Standard Practice for Estimating the Quality of Extruded Polyvinyl Chloride (PVC) Pipe by the Heat Reversion Technique
ASTM F1417	Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
UNI-B-6	Recommended Practice for Low-Pressure Air Testing of Installed

UNI-PUB-08	Sewer Pipe
NSF-14	Tapping Guide for PVC Pressure Pipe
	Plastics Piping System Components and Related Materials

Reference	Title
NSF-61	Drinking Water System Components--Health Effects
PPI TR-2	PVC Range Composition Listing of Qualified Ingredients

Manufacturer Requirements

All piping shall be made from PVC compound conforming to cell classification 12454 per ASTM D1784.

Warranty

The pipe shall be warranted for one year per the pipe supplier's standard terms.

Pre-Construction Submittals

1. The following product data is required from the pipe supplier:
2. Pipe Size
3. Dimensionality
4. Pressure Class per applicable standard
5. Color
6. Recommended Minimum Bending Radius
7. Recommended Maximum Safe Pull Force

The following work plan and information is required from the Contractor.

1. Work plan shall include for each HDD installation any excavation locations and dimensions, interfering utilities, bore dimensions and locations including bend radii used, and traffic control schematics.
2. A project safety and contingency plan which shall include but shall not be limited to drilling fluid containment and cleanup procedures, equipment and plan for compromised utility installations including electrical and power lines, water, wastewater and any other subsurface utility in the area.
3. An HDD schedule identifying daily work hours and working dates for each installation.

Post-Construction Submittals

The following as-recorded data is required from the Contractor to be submitted to the City:

1. Approved datalogger device reports
2. Pipe Size and Thickness
3. As-recorded information
  - a. The as-recorded plan and profile will reflect the actual installed alignment, and reflect the horizontal offset from the baseline and depth of cover.
  - b. All fittings, valves, or other appurtenances will also be referenced and shown.

- c. A daily project log, along with tracking log sheets, should they be used, shall be provided. Tracking log sheet data, should it be employed, shall include any and all that apply, including inclination, depth, azimuth, and hydraulic pull-back and rotational force measured.

#### PVC Gasketed, Push-on Fittings

Acceptable fittings for use with polyvinylchloride pipe shall include standard PVC pressure fittings conforming to AWWA C900 or AWWA C905.

Acceptable fittings for use joining fusible polyvinyl chloride pipe other sections of fusible polyvinylchloride pipe or other sections of PVC pipe shall include gasketed PVC, push-on type couplings and fittings, including bends, tees, and couplings as shown in the drawings.

Bends, tees and other PVC fittings shall be restrained with the use of thrust blocking or other restraint products as indicated in the construction documents.

PVC gasketed, push-on fittings and mechanical restraints, if used, must be installed per the manufacturer's guidelines.

#### Sleeve Type Couplings

Sleeve-type mechanical couplings shall be manufactured for use with PVC pressure pipe, and may be restrained or unrestrained as indicated in the construction documents.

Sleeve-type couplings shall be rated at the same or greater pressure carrying capacity as the pipe itself.

#### Connection Hardware

Bolts and nuts for buried service shall be made of non-corrosive, high-strength, low-alloy steel having the characteristics specified in ANSI/AWWA C111/A21.11, regardless of any other protective coating.

#### Drilling System Equipment

The directional drilling equipment, as a minimum, shall consist of a directional drilling rig of sufficient capacity to perform the bore(s) and pull-back of the pipe(s), a drilling fluid mixing & delivery system of sufficient capacity to successfully complete the crossing, a guidance system to accurately guide boring operations, and trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project. All required equipment shall be included in the emergency and contingency plan as submitted per these specifications.

#### Drilling Rig

The directional drilling machine shall consist of a hydraulically powered system to rotate, push and pull drill pipe while delivering a pressurized fluid mixture to a drill head. The machine shall be anchored to withstand the pulling, pushing and rotating forces required to complete the project.

The drilling rig hydraulic system shall be of sufficient pressure and volume to power drilling operations. The hydraulic system shall be free from leaks.

The drilling rig shall have a system to monitor pull-back hydraulic pressure during pullback operations.

#### Drill Head

The horizontal directional drilling equipment shall produce a stable fluid lined tunnel with the use of a steer-able drill head and any subsequent pre-reaming heads.

The system must be able to control the depth and direction of the drilling operation.

Drill head shall contain all necessary cutters and fluid jets for the operation, and shall be of the appropriate design for the ground medium being drilled.

#### Drilling Fluid (Drilling Mud)

Drilling fluid shall be composed of clean water and the appropriate additive(s) for the fluid to be used. Water shall be from a clean source and shall meet the mixing requirements of the mixture manufacturer(s).

The water and additives shall be mixed thoroughly to assure the absence of any clumps or clods. No hazardous additives may be used.

Drilling fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of bore wall(s).

Drilling fluid shall be disposed of off-site in accordance with local, state and federal requirements and/or permit conditions.

No additional chemicals or polymer surfactants shall be allowed to be added to the drilling fluid unless they have been submitted per this specification.

#### Mixing System

A drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid for the project.

The mixing system shall be able to ensure thorough mixing of the drilling fluid. The drilling fluid reservoir tank shall be sized for adequate storage of the fluid.

The mixing system shall continually agitate the drilling fluid during drilling operations.

#### Drilling Fluid Delivery and Recovery System

The drilling fluid pumping system shall have a minimum capacity to supply drilling fluid in accordance with the drilling equipment pull-back rating at a constant required pressure.

The delivery system shall have filters or other appropriate in-line equipment to prevent solids from being pumped into the drill pipe.

Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and properly disposed of. The use of spill containment measures shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits and drilling fluid recycling system (if used) to prevent spills

into the surrounding environment. Pumps, vacuum truck(s), and/or storage of sufficient size shall be in place to contain excess drilling fluid.

A closed-loop drilling fluid system and a drilling fluid cleaning system should be used to whatever extent practical, depending upon project size and conditions. Under no circumstances shall drilling fluid that has escaped containment be reused in the drilling system.

#### Drilling Control System

Calibration of the electronic detection and control system shall be verified prior to the start of the bore.

The drilling head shall be remotely steer-able by means of an electronic or magnetic detection system. The drilling head location shall be monitored in three dimensions:

- a. Offset from the baseline,
- b. Distance along the baseline, and
- c. Depth of cover.

Point of rotation of the head shall also be monitored.

Pipe pull heads shall be utilized that employ a positive through-bolt design assuring a smooth wall against the pipe cross-section at all times.

Pipe pull heads shall be specifically designed for use with polyvinylchloride pipe, and shall be as recommended by the pipe supplier.

#### Delivery and Off-Loading

Pipe shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Any pipe damaged in shipment shall be replaced as directed by the City Engineer.

Each pipe shipment should be inspected prior to unloading to see if the load has shifted or otherwise been damaged. Notify the City Engineer immediately if more than immaterial damage is found. Each pipe shipment should be checked for quantity and proper pipe size, color, and type.

Pipe should be loaded, off-loaded, and otherwise handled in accordance with AWWA M23, and all of the pipe supplier's guidelines shall be followed.

Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut, or gouge the pipe are strictly prohibited.

During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.

If appropriate unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to insure that pipe is not dropped or damaged. Pipe should be carefully lowered, not dropped, from trucks.

### Handling and Storage

Any length of pipe showing a crack or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe shall be determined by the City Engineer.

Any scratch or gouge greater than 10% of the wall thickness will be considered significant and can be rejected unless determined acceptable by the City Engineer.

Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.

Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.

If pipe is to be stored for periods of 1 year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering of the pipe which allows for temperature build-up is strictly prohibited. Pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.

Pipe shall be stored and stacked per the pipe supplier's guidelines.

### Drilling Operations

Bore path and alignment are as indicated in the contract documents. The path of the bore may be modified based on field and equipment conditions. Entry and exit locations and control-point elevations shall be maintained as indicated in the contract documents.

Bend radii shown in the contract documents are minimum allowable radii and shall not be reduced.

### Location and Protection of Underground Utilities

Correct location of all underground utilities that may impact the HDD installation is the responsibility of the Contractor, regardless of any locations shown on the drawings or previous surveys completed.

Utility location and notification services shall be contacted by the Contractor prior to the start of construction.

All existing lines and underground utilities shall be positively identified, including exposing those facilities that are located within an envelope of possible impact of HDD installation as determined for the project specific site conditions. It is the Contractor and HDD system operator's responsibility to determine this envelope of safe offset from existing utilities.

This will include, but is not limited to, soil conditions and layering, utility proximity and material, HDD system and equipment, and foreign subsurface material.

Site Location Preparation

Work site as indicated on drawings shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made

Contractor shall confine all activities to designated work areas.

Drilling Layout and Tolerances

The drill path shall be accurately surveyed with entry and exit areas placed in the appropriate locations within the areas indicated on drawings. If using a magnetic guidance system, drill path will be surveyed for any surface geomagnetic variations or anomalies.

Instrumentation shall be provided and maintained at all times that accurately locates the pilot hole, measures drill-string axial and torsional loads and measures drilling fluid discharge rate and pressure.

Entry and exit areas shall be drilled so as not to exceed the bending limitations of the pipe as recommended by the pipe supplier.

Pilot Hole Bore

Pilot hole shall be drilled along bore path. In the event that the pilot bore does deviate from the bore path, it may require the Contractor to pull-back and re-drill from the location along bore path before the deviation.

The Contractor shall limit curvature in any direction to reduce force on the pipe during pullback.

The minimum radius of curvature shall be no less than that specified by the pipe supplier and as indicated on the drawings.

Reaming

After successfully completing the pilot hole, the bore hole shall be reamed to a diameter which meets the requirements of the pipe being installed. The following table is offered as an estimated guide:

<b>Nominal Pipe Diameter</b>	<b>Bore Hole Diameter</b>
< 8 inches	Pipe Dia. + 4 inches
8 inches to 24 inches	Pipe Dia. X 1.5
> 24 inches	Pipe Dia. + 12 inches

Multiple reaming passes shall be used at the discretion of the Contractor and shall conform to this specification.

In the event of a drilling fluid fracture, returns loss or other loss of drilling fluid, the Contractor shall be responsible for restoring any damaged property to original condition and cleaning up the area in the vicinity of the damage or loss.

### Pipe Pull-Back and Insertion

Pipe shall be restrained prior to insertion, if the site and conditions allow, into one continuous length.

Contractor shall handle the pipe in a manner that will not over-stress the pipe prior to insertion. Vertical and horizontal curves shall be limited so that the pipe does not bend past the pipe supplier's minimum allowable bend radius, buckle, or otherwise become damaged. Damaged portions of the pipe shall be removed and replaced.

The pipe entry area shall be graded as needed to provide support for the pipe and to allow free movement into the bore hole.

The pipe shall be guided into the bore hole to avoid deformation of, or damage to, the pipe.

The polyvinylchloride pipe may be continuously or partially supported on rollers or other friction decreasing implement during joining and insertion approved by the City Engineer, as long as the pipe is not over-stressed or critically abraded prior to, or during installation.

A swivel shall be used between the reaming head and the polyvinylchloride pipe to minimize torsion stress on the pipe assembly.

Buoyancy modification shall be at the sole discretion of the Contractor, and shall not exceed the pipe supplier's guidelines in regards to maximum pull force or minimum bend radius of the pipe. Damage caused by buoyancy modifications shall be the responsibility of the Contractor.

Once pull-back operations have commenced, the operation shall continue without interruption until the pipe is completely pulled through the bore hole.

The pipe shall be installed in a manner that does not cause upheaval, settlement, cracking, or movement and distortion of surface features. Any damages caused by the Contractor's operations shall be corrected by the Contractor.

### Installation Cleanup

Following the installation, the project site shall be returned to a condition equal to or better than the pre-construction condition of the site. All excavations will be backfilled and compacted per the construction documents and jurisdictional standards. All pavement and hardscape shall be repaired per applicable jurisdictional standards, excess materials shall be removed from the site, and disturbed areas shall be re-landscaped. All drilling fluid shall be properly disposed of per these specifications and all applicable jurisdictional laws.

Contractor shall verify that all utilities, structures, and surface features in the project area are sound.

### Preparation Prior to Making Connections into Existing Piping Systems

Approximate locations for existing piping systems are shown in the construction documents. Prior to making connections into existing piping systems, the contractor shall:

1. Field verify location, size, piping material, and piping system of the existing pipe.

2. Obtain all required fittings, which may include saddles, sleeve type couplings, flanges, tees, or others as shown in the construction documents.
3. Have installed all temporary pumps and/or pipes in accordance with established connection plans. Unless otherwise approved by the City Engineer, new piping systems shall be completely assembled and successfully tested per Section TS-9 prior to making connections into existing pipe systems.

#### Pipe System Connections

Pipe connections shall be installed per applicable standards and regulations, as well as per the connection manufacturer's guidelines and as indicated in the construction documents. Pipe connections to structures shall be installed per applicable standards and regulations, as well as per the connection manufacturer's guidelines.

Pipe installed via HDD shall be filled with water prior to making any connections to the existing system or other portions of the project.

#### Testing

Testing shall comply with all applicable jurisdictional building codes, statutes, standards, regulations, and laws.

#### Hydrostatic Testing and Leakage Testing for Pressure Piping

Hydrostatic and leakage testing for piping systems that contain mechanical jointing, as well as fused PVC jointing, shall comply with AWWA C605.

Unless agreed to or otherwise designated by the City Engineer, for a simultaneous hydrostatic and leakage test following installation, a pressure equal to 150% of working pressure at point of test, but not less than 125% of normal working pressure at highest elevation shall be applied. The duration of the pressure test shall be for two (2) hours.

If hydrostatic testing and leakage testing are performed at separate times, follow procedures as outlined in AWWA C605.

In preparation for pressure testing the following parameters must be followed:

1. All air must be vented from the pipeline prior to the pressurization. This may be accomplished with the use of the air relief valves or corporation stop valves, vent piping in the testing hardware or end caps, or any other method which adequately allows air to escape the pipeline at all high points. Venting may also be accomplished by 'flushing' the pipeline in accordance with the parameters and procedures as described in AWWA C605.
2. The pipeline must be fully restrained prior to pressurization. This includes complete installation of all mechanical restraints per the restraint manufacturer's guidelines, whether permanent or temporary to the final installation. This also includes the installation and curing of any and all required thrust blocking. All appurtenances included in the pressure test, including valves, blow-offs, and air-relief valves shall be checked for proper installation and restraint prior to beginning the test.

3. Temporary pipeline alignments that are being tested, such as those that are partially installed in their permanent location shall be configured to minimize the amount of potentially trapped air in the pipeline.

#### Disinfection of the Pipeline for Potable Water Piping

After installation, the pipeline, having passed all required testing, shall be disinfected prior to being put into service. Unless otherwise directed by the City Engineer, the pipeline will be disinfected per AWWA C651.

#### Partial Testing

Segments of the pipe may be tested separately in accordance with standard testing procedure, as approved by the City Engineer. Testing of each HDD installation prior to connection to the system or other piping is required.

### C. MEASUREMENT AND PAYMENT

Payment for “**30-inch Steel Casing for Empire Avenue (Jack and Bore)**” shall be at the contract unit price per linear foot listed in the bid schedule. This work shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in the Empire Avenue Jack and Bore 12 Inch Sanitary Sewer Pipeline, complete in place, including but not limited to:

- Potholing to locate utilities
- Trenchless equipment, materials, work, and operations required for installation including any excavated pit or areas.
- Dewatering (if required)
- Temporary shoring system (if required)
- Furnishing and installing 12 inch PVC pipe
- Furnishing and installing 30 inch steel casing
- Leak testing
- Pressure grouting
- Banding straps
- End seals, annular space fill, and casing spacers.

As shown on the plans, as specified herein, and as directed by the City Engineer.

## **SECTION TS-8 OPEN TRENCH CASING INSTALLATION**

### A. GENERAL

Installation of the sanitary sewer, potable water, and non-potable water pipeline casings by open trench as shown in the project plans. The contractor shall be responsible for verifying the existence and exact location of all utilities in the project area which may include potholing. All utilities and infrastructure is to be protected during the installation. The contractor shall supply a drawing detailing the profile of the proposed installation for the City’s review after defining the locations of existing utilities and 48 hours prior to commencing the installation. During installation, the contractor shall ensure that the pipe joints do not deflect more than 50% of the manufacturer’s recommended maximum deflection.

## B. STATE ROUTE 4 CROSSING

Extension of the sanitary sewer, potable water, and non-potable water casings by open trench as shown in the project plans. The Contractor shall install the sanitary sewer, potable and non-potable waterlines crossing State Route 4 (SR4) as shown in the Plans by sliding, jacking or other method as approved by the City Engineer.

## C. EMPIRE AVENUE EXISTING 90" CCWD PIPELINE CROSSING

Installation of the potable and non-potable water casings above the existing 90" Contra Costa Water District (CCWD) pipeline by open trench as shown in the project plans.

### Casing Pipe

Steel casing pipe shall be of leak proof construction and shall conform to the requirements of ASTM A53 (ASTM A139 Grade "B"). The pipe shall be coated inside and outside with a black bituminous coating a minimum of 5 mils thick. Steel casing pipe shall have minimum yield strength of 35,000 psi. Steel casing pipe sections shall have beveled ends with a single v-groove and shall be full penetration butt welded on the outside of the casing in accordance with the applicable portions of AWWA C206 for field welded waterpipe joints. The welded joints shall be wire brushed and painted with bitumastic enamel coating in accordance with AWWA C203. The minimum inside diameter of the casing pipe shall be 4 inches greater than the largest outside diameter of the carrier pipe, joints, or couplings unless indicated otherwise. In all cases, the casing pipe shall be large enough to allow the carrier pipe to be removed subsequently without disturbing the casing pipe or roadway subgrade. If a larger casing diameter is shown in the plans, the larger diameter shall be used. The minimum thickness for casing pipes shall be 0.250 inches unless otherwise shown on the plans. Larger casing diameters and/or thicker casings shall be installed where required by the agency having jurisdiction for the crossing; as needed to resist H-20 traffic loading under street crossings. Cathodic protection of the casing pipe shall be provided as shown in the Plans and as specified in section TS-12 "Galvanic Cathodic Protection" for the Empire Avenue casings or TS-13 "Impressed Current Cathodic Protection" for the State Route 4 casings.

## D. MEASUREMENT AND PAYMENT

Payment for "**(XX-inch) Steel Casings for Empire Avenue and State Route 4 (Open Trench)**" shall be at the contract unit price per linear foot listed in the bid schedule. This work shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved installing the Empire Avenue casings and State Route 4 casing extensions including but not limited to:

- Potholing to locate utilities
- Materials, work, and operations required for installation including any excavated pit or areas.
- Dewatering (if required)
- Temporary shoring system (if required)
- Furnishing and installing carrier PVC pipes
- Furnishing and installing steel casings

- Flushing, testing, and disinfecting
- Banding straps
- End seals, annular space fill, and casing spacers.

As shown on the plans, as specified herein, and as directed by the City Engineer.

## **SECTION TS-9      SANITARY SEWER IMPROVEMENTS**

### **A.    SANITARY SEWER MANHOLES**

Storm Drain manholes shall be constructed at locations and grades as shown on the plans in accordance with Section 120, "Sewer Facilities," and Section 51, "Concrete Structures," of the Caltrans Standard Specifications, these Technical Specifications, and as specified on the plans.

Structure excavation and backfill for sanitary sewer manholes shall conform to the requirements of Section 19-3, "Structure Excavation and Backfill," of the Caltrans Standard Specifications as well as applicable sections of the City of Brentwood Standard Plans and Specifications.

All materials used in cast-in-place concrete shall conform to Section 90, "Concrete," of the Caltrans Standard Specifications. Concrete shall be Class A, Type II cement. Reinforcing steel will be required only where shown on the plans and in the detail drawings and shall conform to the provisions of Section 52, "Reinforcement," of the Caltrans Standard Specifications.

The Contractor shall notify the City inspector for final inspection of forms and reinforcement a minimum of two working days prior to placing the concrete. Contractor may not backfill around structure until after the City has reviewed and approved the results of the seven-day concrete test breaks.

Mortar shall consist of one (1) part Portland cement to two (2) parts clean, well-graded sand which will pass a 1/8 inch, screen. Admixtures may be used not exceeding the following percentage of weight of cement; hydrated lime, 10%, diatomaceous earth or other inert material, 5%. Consistency of mortar shall be such that it will readily adhere to the surfaces. Mortar mixed longer than 30 minutes shall not be used.

The inverts of all storm drain manholes shall be shaped with concrete fillets to provide for smooth flow, and to prevent the buildup of sand, gravel, or debris in the corners of the structure. Reference City of Brentwood Standard Plans SS-2 "Sanitary Sewer Manhole."

#### **1.    MEASUREMENT AND PAYMENT**

Full compensation for new sanitary sewer manholes will be measured by number of each type installed. The contract unit price paid for each "**Sanitary Sewer Manhole**" installed on new or existing pipe shall include all labor and materials to construct a complete structure, in place, as shown on the plans. This includes, but is not limited

to, full compensation for excavation and backfill (including any dewatering if necessary), reinforcing steel, concrete, aggregate base, joint sealing compound, mortar, frames and covers, manhole bases, manhole testing (as required by City of Brentwood), connections to new or existing pipes, welding, pipe plugging (where applicable), materials, tools, equipment and incidentals.

No additional compensation will made for the above said items or for repairing/correcting any manholes that do not meet requirements specified by City of Brentwood.

## B. SANITARY SEWER PIPE

Sanitary sewer pipe shall be installed at locations shown on the plans according to Section 120, "Sewer Facilities" of the City of Brentwood Standard Plans and Specifications.

Unless noted otherwise on the plans, sewer pipe shall be polyvinylchloride (PVC) SDR 35.

Pipe fittings for each respective pipe material listed above shall be of type and material as specified in the respective section of the City of Brentwood Standard Plans and Specifications.

### 1. MEASUREMENT AND PAYMENT

Full compensation for new sanitary sewer pipe will be measured by linear feet of pipe installed. The contract price paid per linear foot of "**Sanitary Sewer Pipe (XX-inch)**" shall include full compensation for site dewatering, excavation, backfill and trench patch furnishing all labor, material, tools, equipment and incidentals, and for doing all work necessary to install new sanitary sewer pipe as shown on the plans and these Technical Specifications, and as directed by the Engineer.

No additional compensation shall be paid for connecting to existing pipes, plugging stubs, jack & bore operation, steel casing, testing, televising, or repairing/replacing any pipes that do not meet requirements specified by City of Brentwood.

## SECTION TS-10 POTABLE WATER IMPROVEMENTS

### A. WATER PIPE

Potable Water pipes shall be installed at locations shown on the plans according to Section 130, "Potable Water Facilities" of the City of Brentwood Standard Plans and Specifications.

Unless noted otherwise on the plans, potable water pipe shall be Polyvinylchloride (PVC) pressure pipe that meets the requirements of AWWA C-900 Class 200 (200psi working pressure) as described in Section 130-1.02B, "Polyvinylchloride (PVC) Pipe," of the City of Brentwood Standard Plans and Specifications.

Pipe fittings for each respective pipe material listed above shall be of type and material as specified in the respective section of the City of Brentwood Standard Plans and Specifications.

Thrust blocks shall be installed according to Section 130-1.02G, "Thrust Blocks," of the City of Brentwood Standard Plans and Specifications and at locations required by Standard Plan W-15 "Thrust Block Bearing Area" of the City of Brentwood Standard Plans.

All new water facilities shall be isolated and disinfected according to Section 130-1.03C, "Disinfecting Water Mains," of the City of Brentwood Standard Plans and Specifications. Costs associated with disinfecting and testing water mains shall be included in the unit price bid per linear foot for water pipes.

#### 1. MEASUREMENT AND PAYMENT

Full compensation for new water pipe will be measured by linear foot of pipe installed. The contract price paid per linear foot of "**Potable Water Pipe (12-inch)**" shall include full compensation for site dewatering, excavation, backfill and trench patch, furnishing all labor, material, tools, equipment and incidentals, and for doing all work necessary to install water pipe and respective fittings shall be at the unit price bid per linear foot for the size of pipe installed.

No additional compensation shall be paid for connecting to existing pipes, thrust blocking, flanges, elbows, tees, bolts, concrete caps, gaskets, disinfecting, testing, or repairing/correcting any pipes that do not pass tests or meet requirements specified by City of Brentwood.

### B. WATER VALVES

Water valves shall be installed at locations shown on the plans and of type specified in Section 130-1.02C, "Valves" of the City of Brentwood Standard Plans and Specifications. Additionally, valve boxes shall be installed at each valve location per City of Brentwood Standard Drawing W-13 "Valve Box and Riser Installation".

1. MEASUREMENT AND PAYMENT

Full compensation for new water valve will be measured by number of each type installed. The contract price paid per each **"Potable Valve"** shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work necessary to install valves and valve boxes (including set to grade) of given size.

No additional compensation shall be paid for connecting to existing pipes, thrust blocking, flanges, elbows, tees, bolts, gaskets, jack & bore operation, steel casing, disinfecting, testing, or repairing/replacing any valves or valve boxes that do not meet the requirements specified by City of Brentwood.

C. POTABLE BLOW OFF VALVES

Blow-off valves shall be installed at locations shown on the plans per City of Brentwood Standard Plan W-10 "2 Inch Blow Off Assembly".

1. MEASUREMENT AND PAYMENT

Full compensation for new blow off valve will be measured by number of each type installed. The contract price paid per each **"Potable Blow Off Valve"** shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work necessary to install blow off valves. Blow off installation shall include all materials necessary to install assembly as shown on City of Brentwood Standard Plan W-10 "2 Inch Blow Off Assembly" including valve and valve box.

No additional compensation shall be paid for connecting to existing pipes, pipes, valves, thrust blocking, flanges, elbows, tees, bolts, gaskets, disinfecting, testing, or repairing/replacing any parts of the installation that does not meet the requirements specified by City of Brentwood.

**SECTION TS-11 NON-POTABLE WATER IMPROVEMENTS**

A. NON-POTABLE WATER PIPE

Non-Potable water pipes shall be installed at locations shown on the plans according to Section 140, "Non-Potable Water Facilities" of the City of Brentwood Standard Plans and Specifications.

Unless noted otherwise on the plans, non-potable water pipe (purple pipe) shall be Polyvinylchloride (PVC) pressure pipe that meets the requirements of AWWA C-900 Class 200 (200psi working pressure) as described in Section 140-1.02B, "Polyvinylchloride (PVC) Pipe," of the City of Brentwood Standard Plans and Specifications.

Pipe fittings for each respective pipe material listed above shall be of type and material as specified in the respective section of the City of Brentwood Standard Plans and Specifications.

Thrust blocks shall be installed according to Section 130-1.02G, "Thrust Blocks," of the City of Brentwood Standard Plans and Specifications and at locations required by Standard Plan W-15 "Thrust Block Bearing Area" of the City of Brentwood Standard Plans.

1. MEASUREMENT AND PAYMENT

Full compensation for new non-potable water pipe will be measured by linear foot installed. The contract price paid per linear foot "**Non-Potable Water Pipe (8-inch)**" shall include full compensation for site dewatering, excavation, backfill and trench patch, furnishing all labor, material, tools, equipment and incidentals, and for doing all work necessary to install non-potable water pipe and respective fittings.

No additional compensation shall be paid for connecting to existing pipes, thrust blocking, flanges, elbows, tees, bolts, concrete caps, gaskets, jack & bore operation, steel casing, disinfecting, testing, or repairing/correcting any pipes that do not pass tests or meet requirements specified by City of Brentwood.

B. NON-POTABLE WATER VALVES

Non-potable water valves shall be installed at locations shown on the plans and of type specified in Section 130-1.02C, "Valves" of the City of Brentwood Standard Plans and Specifications. Additionally, valve boxes shall be installed at each valve location per City of Brentwood Standard Drawing W-13 "Valve Box and Riser Installation".

1. MEASUREMENT AND PAYMENT

Full compensation for new non-potable water valve will be measured by number of each type installed. The contract price paid per each "**Non-Potable Gate Valve (8-inch)**" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work necessary to install valves and valve boxes (including set to grade).

No additional compensation shall be paid for connecting to existing pipes, thrust blocking, flanges, elbows, tees, bolts, gaskets, disinfecting, testing, or repairing/replacing any valves or valve boxes that do not meet the requirements specified by City of Brentwood.

C. NON-POTABLE BLOW OFF VALVES

Non-potable blow-off valves shall be installed at locations shown on the plans per City of Brentwood Standard Plan W-10 "2 Inch Blow Off Assembly".

1. MEASUREMENT AND PAYMENT

Full compensation for new non-potable blow off valve will be measured by number of each type installed. The contract price paid per each "**Non-Potable Blow Off Valve**"

shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work necessary to install blow off valves as shown on City of Brentwood Standard Plan W-10 "2 Inch Blow Off Assembly" including valve and valve box.

No additional compensation shall be paid for connecting to existing pipes, pipes, valves, thrust blocking, flanges, elbows, tees, bolts, gaskets, disinfecting, testing, or repairing/replacing any parts of the installation that does not meet the requirements specified by City of Brentwood.

## **SECTION TS-12 GALVANIC CATHODIC PROTECTION**

### **PART 1. GENERAL**

#### **A. WORK INCLUDED**

Work included in this section consists of installation of galvanic cathodic protection on the buried domestic and non-potable water pipelines' fittings, and appurtenances in the Priority Area One (PA-1) Jeffery Way Improvement Plan.

1. Cathodic protection of all buried, ductile iron pipe, fittings, valves, risers and appurtenances associated with the referenced water pipelines.
2. Encasement of all ductile iron pipe, fittings, valves, risers and appurtenances associated with the referenced water pipelines in polyethylene.
3. Cathodic protection of all buried, copper water services and appurtenances.
4. Encasement of all copper water services and appurtenances in polyethylene.
5. Bonding of buried, non-welded ferrous metal pipe joints.
6. Trenching, drilling, and other excavation.
7. Installation of prepackaged H-1 alloy (low potential) magnesium anodes, cables and test stations.
8. Backfill and compaction of backfill.
9. Provide shop drawings, reports, permits, and obtain Engineer's approval where required.
10. Correction of all deficiencies.
11. Cleanup and restoration of surface.

12. Work shall include the provision of all materials, equipment, and apparatus not specifically mentioned herein or noted on the plans, but which are obviously necessary to complete the work.

#### B. CODE REQUIREMENTS

All materials, workmanship and installation shall conform to all requirements of the legally constituted authority having jurisdiction. These authorities include, but are not limited to, the latest revision of the State of California, Department of Industrial Relations, Division of Industrial Safety Orders of the Industrial Accident Commission; and all other applicable State, County, or City codes and regulations. Nothing in the drawings or specifications is to be construed to permit work not conforming to any of these regulations and codes. Where larger size or better grade materials than those required by these regulations and codes are specified, the specifications and drawings shall have precedence.

#### C. REFERENCE SPECIFICATIONS

1. ASTM American Society for Testing and Materials
2. IEEE Institute of Electrical and Electronic Engineers
3. NEMA National Electrical Manufacturers' Association
4. NACE National Association of Corrosion Engineers
5. OSHA Occupational Safety and Health Administration
6. City of Brentwood Standard Specification Section 150, "Corrosion Control Facilities."

#### D. QUALITY ASSURANCE

#### E. GENERAL

All work shall be performed to the satisfaction of the Engineer.

#### F. MATERIALS

The contractor shall use only new, highest quality cathodic protection components, and standard products from a manufacturer regularly engaged in the production of such material or equipment. The Contractor shall not substitute for the specified materials unless approved by the Engineer.

#### G. TESTING

Cathodic protection components shall be subject to testing to ensure proper installation and operation. Electrical continuity of the pipelines, proper operation of anodes, test leads and all other cathodic protection components shall be tested by the Project Corrosion Consultant, in order to ensure proper installation and operation. The Contractor shall be

responsible for correction of all deficiencies identified by the testing and all costs incurred for retesting prior to final acceptance.

#### H. COMPACTION

Compaction of backfill for anodes and trenches shall match the existing conditions and shall be approved by the Engineer.

#### I. REQUIREMENTS

2. All buried metallic pipes, fittings and appurtenances associated with the water pipelines shall be encased in 8-mil polyethylene per AWWA C-105. All buried copper water service lines shall be encased in 6-mil polyethylene sleeve in accordance with AWWA C-105.
3. Galvanic cathodic protection shall be installed on all buried metallic pipe, valves, fittings, risers and appurtenances.
4. All rubber gaskets, mechanical joints and flexible couplings shall be bonded along the entire buried length of ductile iron pipe.

#### J. DELIVERY, STORAGE, AND HANDLING

1. Deliver cathodic protection materials to the Site in original, sealed containers.
2. Replace all anodes with damaged lead wire.

#### K. MATERIAL SUBMITTALS

Prior to commencing work, the Contractor shall submit for approval by the Engineers five (5) copies of following items in accordance with the submittal procedures. The submittal shall include manufacturer, catalog number, size, finish and any pertinent data necessary for proper identification and to determine conformance with drawings & specifications.

1. Anodes
2. Cable
3. Terminal Box, Shunt, Wire Termination Material & Procedure, Wire Identification.
4. Traffic Valve Box
5. Exothermic Weld Equipment
6. Coating of Cable-to-Pipe Connection
7. Cable Warning Tape
8. Cable Identification Tags

9. Conduit and Fittings

10. Bitumastic Coating

L. INTERFERENCE AND EXACT LOCATIONS

The Contractor shall coordinate and properly relate this work to the site and to the work of all trades. The general locations of the facilities are shown on the drawings. However, the Contractor shall visit the premises and thoroughly familiarize themselves with all details of the work and working conditions, verify existing conditions in the field, determine the exact locations of existing pipelines and structures and advise the Engineer of any discrepancy that may prevent or hinder the specified work from being completed. The Contractor shall be solely responsible for location and marking underground structures so as to avoid damage during construction.

PART 2. MATERIALS

M. MAGNESIUM SACRIFICIAL ANODES

1. Magnesium anodes shall be standard H-1 alloy Grade C (low potential) magnesium, size as shown on the drawings. Each anode shall be cast with a steel core, and the core shall protrude from one end and shall be of sufficient length to permit attachment of a lead wire.
2. Each anode shall conform to the following chemical composition and dimensions:

<u>Element</u>	<u>Content (Wt%)</u>
Aluminum	5.0 – 7.0%
Manganese	0.15 Min.
Zinc	2.0 – 4.0%
Silicon	0.30% Max.
Copper	0.10% Max.
Nickel	0.003% Max.
Iron	0.003% Max.
Other	0.3% Max Total
Magnesium	Balance

Bare Anode Dimensions:

Nominal Wt. Bare (lbs)	Height (in.)	Width (in.)	Length (in.)
5	3	3	7.5
9	3	3	13.5
17	4	4	17
32	5	5	21
50	8	-	15

3. Anode Core Strap: Galvanized steel, with one end of anode recessed to provide access to the rod For connection of the lead wire.
4. Lead Wire: No. 10 AWG, Type THHN (Black) silver brazed to the rod, making a mechanically secure connection
5. Soldered Connection and Core: Seal entirely with electrical potting compound.
6. Magnesium Anode Packaging: Prepackaged in a cloth bag containing low resistivity backfill consisting of 75% hydrated gypsum, 20% bentonite, and 5% sodium sulfate.

#### N. CABLE

1. All underground cables utilized for bonding cables shall be single conductor, stranded copper, Type CP, insulated for 600 volts with High Molecular Weight Polyethylene (HMWPE) in accordance with the requirements of ASTM D1248, Type 1, Class C, Category 5, Grades E-4 and E-5.
2. All cables for galvanic anodes and test stations shall be Type THHN, stranded copper, sized as shown on the plans, and shall conform to Federal Specifications JC-30B.
3. Test Leads and Anode Leads: Extend 18 inches minimum above grade after connection to test station terminal board.

#### O. TEST STATION COMPONENTS

1. Terminal boxes shall be locking type, constructed of high-impact, molded Lexan plastic. The test box shall be provided with sufficient hardware and binding post terminals for each cable as shown on the drawings. All test station hardware, including nuts, bolts and shorting straps shall be nickel plated brass.
  - a. Cable Terminations: If terminal posts with washers and nuts are utilized, all cables that terminate in the terminal boxes shall have ring type connectors that are sized appropriately for the terminal bolts. The ring connectors shall be either a soldered ring type connection or a heavy duty, compression type crimp connection.
  - b. If binding post terminals are utilized, ring connectors are not required.
  - c. Subject to Compliance with the Contract Documents the following Manufacturers are acceptable:
    - i. Model: T-3 by Tinker & Razor Company
    - ii. Model: Big Fink by Cott Manufacturing Company
    - iii. Or approved equal
2. Traffic Valve Box: Brooks Type 1RT Traffic Box, or Christy G-5 Traffic Box, or approved equal.
3. Valve Box Covers: Cast iron, with legend "CP TEST" as indicated on Drawings.
4. Shunts: 0.01 ohm, 6 ampere capacity, manganin wire type.

## P. CABLE-TO-PIPE CONNECTIONS

1. Ductile Iron Pipe or Fittings
  - a. Accomplish all cable connections to the ductile iron pipe or fittings utilizing an exothermic welding process.
  - b. Weld Equipment Manufacturers: From one of the following manufacturers, or approved equal:
    - i. Erico Products, "Cadweld."
    - ii. Continental Industries, Inc., "Thermoweld."
  - c. Cable Connections to Pipe and Fittings: Manufacturer's standard exothermic weld kits, unless indicated otherwise on Drawings. Exothermic welds for the ductile iron fittings shall be made using the weld metal for cast iron pipe.
  - d. Size all materials for welding in accordance with recommendations in manufacturers' literature.
  - e. Use copper wire sleeves and individual components from one manufacturer when making welds.
  - f. Cable-to-Pipe Coating Material: Coating material for cable-to-pipe connections shall be Handicaps as manufactured by Royston products or Propoxy 20 epoxy putty as manufactured by the Hercules Chemical Company or approved equal.
2. Copper Pipe

All cable connections to the copper service risers shall be accomplished utilizing brass ground clamps.

## Q. PROTECTION OF CABLE-TO-PIPE OR STRUCTURE CONNECTIONS

1. Epoxy used for sealing the cable to pipe connection shall be Durcon-164, manufactured by the Duriron Company; Scotchcast Resin No. 4, manufactured by 3-M Company; or Propoxy 20 epoxy putty as manufactured by the Hercules Chemical Company; or CC-1 Potting Compound, manufactured by PSI Products, or approved equal.
2. Epoxy paste or Royston Handy Caps may, at the discretion of the Corrosion Engineer, be used as alternatives to liquid epoxy resin. Epoxy paste such as Aquamend as manufactured by Polymeric Systems, Inc., may be used. The Royston Handy Cap, which is a molded plastic cap filled with a corrosion resistant compound on a base of thick elastomeric tape, as manufactured by Royston Laboratories Division or equal may be used only with its associated Roybond 747 primer. The dimensions of the Handy Cap are as follows: 4 inch by 4 inch overall, 10 mils minimum sheet thickness, 125 mils minimum tape thickness. Roybond 747 manufactured by Royston Laboratories Division shall be used to prime the exposed metal surfaces and the 4 inch by 4 inch area to be covered by the Handy Cap.

## R. CABLE WARNING TAPE

All buried test station and anode cables shall have plastic warning tape installed a minimum of 12 inches above the top of the cables for the entire buried length of the cables. The warning tape shall be 4 inches wide and shall be yellow with black lettering with the legend

"CAUTION, CATHODIC PROTECTION CABLES BURIED BELOW" in 3 inch high lettering printed at a minimum of seven foot intervals along the entire buried length of the cable.

#### S. CABLE IDENTIFICATION TAGS

All cables in the terminal boxes shall be identified. The identification tags shall be white plastic "zip-tie" type straps with a plastic tab of sufficient size to allow the pipeline station to be written on the tab with a permanent felt tip marker.

#### T. RIGID PVC CONDUIT AND FITTINGS

Rigid polyvinylchloride (PVC) conduit and fittings shall be Schedule 40, manufactured to NEMA TC-2 and WC-1094 specifications and shall be U.L. approved.

#### U. BITUMASTIC

Coating for all buried bolts, nuts and metallic washers of the ductile iron pipe and the copper insulating corporation stops shall be Bitumastic 300M coal tar mastic coating, as manufactured by Carboline or approved equal.

#### V. POLYETHYLENE SHEETS FOR PIPE ENCASEMENT

The polyethylene sheets used for encasement of the ductile iron pipe and fittings shall be minimum 8-mils thick in accordance with AWWA C-105. The polyethylene tubes used for encasement of the copper lateral shall be minimum 6-mils thick and shall be of sufficient diameter to slip over the pipe without getting damaged.

### PART 3. EXECUTION

#### A. GENERAL REQUIREMENTS

All materials, workmanship and installation shall conform to all requirements of the legally constituted authority having jurisdiction. These authorities include, but are not limited to, the latest revision of the State of California, Department of Industrial Relations, Division of Industrial Safety, Electrical Orders; The National Electric Code, General Construction Safety Orders of the Industrial Accident Commission; and all other applicable State, County, or City standards and regulations. Nothing in the drawings or specifications is to be construed to permit work not conforming to these regulations and codes. Where larger size or better grade materials than required by these regulations and codes are specified, the specifications and drawings shall have precedence.

#### B. STORAGE OF MATERIALS

All materials and equipment to be used in construction shall be stored in such a manner to be protected from detrimental effects from the elements. If warehouse storage cannot be

provided, materials and equipment shall be stacked well above ground level and protected from the elements with plastic sheeting or other method as appropriate.

### C. JOINT BONDING

1. At each anode installation site, bond all buried non-welded, rubber gasket joints, mechanical joints, and fusion-bonded epoxy coated flanges for continuity.
2. Install joint bonds with a wire loop extended above the bonded joint. The overall length of the conductor shall permit sufficient flexibility of each fitting across the joint without transferring any tensile stress to the bond cable.
3. Ensure proper connection of cables to fittings.
4. Coat each fitting where the coating is damaged with a patch kit, as supplied by the pipe coating manufacturer, in accordance with the manufacturer's written instructions.

### D. EXOTHERMIC WELDS

1. Install exothermic weld connections in accordance with the Drawings.
2. Remove coating materials from the surface over an area just sufficient to make the connection.
3. Clean steel surfaces to white metal by grinding or filing prior to welding the conductor. Resin impregnated grinding wheels are not permitted.
4. Do not bury connections to the structures or piping until the Engineer has inspected the connections and given permission to backfill. Connections made in violation of this provision will be rejected.
5. Test exothermic welds for adherence to the pipe and for electrical continuity between the pipe and wires.
6. Use a 22 ounce hammer for testing adherence by striking a blow using a moderate amount of force to the weld. Take care to avoid hitting the wires.
7. All defective welds shall be removed and replaced.
8. All exposed surfaces of copper and steel shall be covered with a minimum thickness of 1/4-inch of insulating material as shown on the drawings or as follows. The exposed metal and surrounding surface shall be cleaned of contaminants and coated with Royston Roybond 747 primer. After the primer has dried, the Royston Handy Cap shall be applied.

## E. CABLE-TO-COPPER-PIPE CONNECTIONS

Cable-to-pipe connections to the copper pipes shall be made with a brass grounding clamp. The clamp shall be properly torqued to the pipe using hexagonal head brass bolts and a torque wrench.

## F. WIRES

1. Inspect bottom of finished trenches to ensure they are free from stones, roots, other materials which might injure the insulation of the conductors.
2. Lay wires in the ground straight, without kinks, with a minimum cover of 30 inches.
3. Run cable in continuous length, free of joints or splices, unless otherwise specified or indicated on Drawings. Use care during installation to avoid punctures, cuts and similar damage to the insulation. Replace entire cable run where any damage to insulation occurs.
4. Leave a minimum of 18 inches of slack for each conductor at each test station housing. Slack shall be that amount of wire which, when the cover is removed and the wire extended, protrudes beyond the opening of the box or enclosure.
5. No wire bend shall have a radius of less than eight times the diameter of that wire.
6. For the Big Fink terminal box use copper terminal rings sized for wire and stud to make all wire connections to terminal studs. For the Tinker & Rasor terminal box strip insulation from the cable to make metal-to-metal connection to each binding post.

## G. SACRIFICIAL MAGNESIUM ANODES

1. Excavate a hole to a minimum of 3 inches larger than the package sacrificial anode diameter, at least 5 feet deep and a minimum of 4 to 5 feet from the fitting.
2. Excavate the lead wire trench to a minimum depth of 30 inches.
3. Remove plastic or paper bags from the anode before lowering into the hole. The cloth bag is to remain around the anode.
4. Exercise care to preclude damaging the cloth bag and lead wire insulation on the sacrificial anode. Do not lift or support anode by the lead wire.
5. Center the packaged anode in the hole and backfill with native soil free of rocks and other foreign objects
6. Flood the anode hole with 5 gallons of fresh water when the backfill reaches one foot above the anode.

## H. ANODE TEST STATIONS

Install anode test stations where indicated on Drawings. Provide a concrete collar where anode test stations are to be installed in native soil. Set collar level flush with top of curb or finish grade in paved areas and two (2) inches above grade in landscaped and unimproved areas. Provide a minimum of 18 inches of slack for each cable in each test station. Sufficient slack shall be provided to allow removal of the terminal box from the test station without disconnecting any of the cables.

I. FIELD COATING OF BURIED FLANGE HARDWARE

All buried nuts and bolts shall be coated with bitumastic prior to polyethylene encasement. After flange hardware is installed use wire brush, power brush or an abrasive cleaning pad to remove all loose material, dirt and grime from substrate to a minimum cleanliness of SSPC SP2. Apply Bitumastic coating liberally with a medium bristle brush to the extent that all surfaces are completely covered with no bare spots visually evident. Coat exposed surfaces of bolts, washers and nuts, giving special attention to the bottom-side surfaces. Follow the manufacturer's recommendations for drying times required before polyethylene encasement and backfill.

J. POLYETHYLENE ENCASEMENT OF PIPE AND FITTINGS

The ductile iron pipes and fittings shall be encased in minimum 8-mils thick polyethylene in accordance with AWWA C-105. The buried copper piping shall be encased in 6-mil thick polyethylene sleeving.

K. SYSTEM TESTING

After installation of sacrificial anode system, and prior to paving, conduct testing to verify proper operation of the cathodic protection system. Testing shall be conducted by the Project Corrosion Engineer. All test results shall be submitted to the City Corrosion Engineer for approval. Any and all deficiencies shall be corrected by the Contractor at his cost and retested prior to final acceptance. All retesting shall be at the Contractor's expense. All test results shall be submitted to the City Corrosion Engineer for approval.

L. MEASUREMENT AND PAYMENT

Full compensation for cathodic protection will be measured by lump sum. The contract price paid by lump sum "**Galvanic Cathodic Protection**," shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in implementing the cathodic protection outlined in the plans, as specified in these Technical Specifications, and as directed by the Engineer.

## SECTION TS-13 IMPRESSED CURRENT CATHODIC PROTECTION

### A. GENERAL

#### 1. Requirements

- a. The CONTRACTOR shall furnish all materials, install all equipment and provide all labor necessary to complete the work shown on the drawings and or/listed below and all other work and miscellaneous items not specifically mentioned but reasonably inferred, including all accessories and appurtenances required for a complete system. The intent of this specification is to provide for a complete, functional cathodic protection system for the five (5) steel casings: 30" (W), 24" (W), 24" (SS), and two 12" (JT).
- b. Work included in this section consists of all components of the cathodic protection system; including anodes, test stations, rectifier, cables, junction boxes and any other work necessary to complete the installation. Work on this project includes the following items:
  - i. Cathodic protection of the water storage for the five steel casings.
  - ii. Providing AC service to rectifier from new electrical service.
  - iii. Installation of MMO anodes in soil as indicated in the Plans.
  - iv. Installation of rectifier units and associated conduits and electrical work.
  - v. Backfill and compaction of backfill.
  - vi. Provide shop drawings, reports, permits, and obtain ENGINEER's approval where required.
  - vii. Correction of all deficiencies.
  - viii. The work shall include the provision of all materials, equipment, and apparatus not specifically mentioned herein or noted on the plans, but which are obviously necessary to complete the work specified.

#### 2. Contractor Submittals

- a. A complete list of equipment and material, including name and manufacturer, catalog number, size, finish and any other pertinent data necessary for proper identification and to determine conformance with specifications.
- b. Wiring diagram for the rectifier unit showing all components.

#### 3. Electrical Service

- a. Electrical service for the cathodic protection rectifiers shall be obtained from existing electrical panel at the pump station site. The Contractor shall furnish and install all required wiring, conduits, cables, splice boxes and equipment as necessary for operation of the rectifiers.

## B. PRODUCTS

### 1. General

- a. All materials shall conform to the requirements set forth herein or as designated on the drawings, unless otherwise specified. All materials must be new, free from defects, and shall be of the best commercial quality for the purpose specified. The Contractor shall furnish all necessary items and accessories not shown on the drawings or specified herein, but which are required to fully carry out the specified intent of the work, without additional cost to the City.

### 2. Manual Rectifier Unit.

- a. The rectifier for the steel casings shall be the product of a concern currently engaged in the manufacture of cathodic protection equipment and shall conform in all respects to NEMA Standards. Each rectifier shall be silicon full-wave bridge, dual voltage 120V AC, 60-cycle, single-phase, air-cooled as indicated on the drawings, designed for continuous operation at 45o C ambient temperature and shall include the following features:
  - i. The rating of the rectifier for the five casings:
  - ii. Output rating: 16 Volts 8 amps DC
  - iii. Transformer taps that will permit manual adjustment of output voltage independently of each circuit between zero and maximum voltage in 48 evenly divided steps.
  - iv. Thermal magnetic circuit breaker, plastic encased, for overload protection of primary and secondary.
  - v. Transient protection for AC and DC circuit.
  - vi. Lightning protection for primary circuit.
  - vii. Separate meters for current and voltage output with 2-percent accuracy. The same meters may be utilized for both circuits with a toggle selection switch.
  - viii. Nickel plated connectors and adjustment bars.
  - ix. Pressure type connectors for Rectifier:
  - x. Pressure type connector for one positive #4 AWG and one negative #4 AWG, cables marked "ANODE HEADER, and "CASINGS," respectively.
  - xi. Individual shunt terminals as indicated on the drawings for the anodes and the pipe.
  - xii. GFI receptacle rated for 20 amps
  - xiii. Anode shunt panel as shown on the drawings
  - xiv. Air-Cooled Ornamental Enclosure.
    1. The enclosure shall be a 3R Type, free standing, double door enclosure with Unistrut mounted on the back wall.
    2. The enclosure shall be of the size shown in the drawing, suitable for mounting one air-cooled rectifier, and two junction panels.
    3. The enclosure shall be fabricated from 10 gauge galvanized sheet steel, and power coated ANSI 61 Grey.
    4. The door shall have a 3 point lockable handle. The open bottom shall have a two inch lip suitable for pad mounting.

5. Ventilation louvres
6. As manufactured by Gaylord Manufacturing Company or approved equal.

b. Manufacturers, or equal

- i. Universal Rectifiers
- ii. Corrpro Companies
- iii. Integrated Rectifier Technologies, Inc.

3. Mixed Metal Oxide (MMO) Canister Anodes

- a. The anode shall be made with titanium substrate coated with mixed metal oxide coating. The coating shall be adequate to provide a minimum life of 15 years with a current discharge of 2.9 amps in coke breeze/soil back fill for 15 years. The anode shall be 75" long wire, prepackaged in a 3" diameter by 80" long canister.
- b. The anode lead wire to anode connection shall be factory assembled. The anode lead wire shall be center connected inside the anode fastened to the cable and anode as directed by the manufacturer.
- c. The wire to anode connection shall be encapsulated against water ingress using specialized seals. The titanium to copper connection shall have a maximum resistance of 0.001 ohms. The cable attached to the anode shall be No.8 AWG, stranded, single conductor, copper, with 20 mils of chlorine resistant fluoropolymer (Halar, Kynar, etc) primary insulation and an HMWPE outer jacket in accordance with the requirements of ASTM-D-1248, Type-1, Class-C, and Grade-5. Any damage to the cable insulation or anode will require complete replacement of the cable and anode. The anode lead wires shall be of sufficient length to extend from the anode to the anode test station installed directly above the anode with adequate slack, without any splices. For the anodes in the center, the anode wire shall be of sufficient length to extend from the anode to the rectifier unit with adequate slack without any splices.
- d. The anode shall be encased in a 3" diameter by 80" long galvanized steel canister. The canister shall be backfilled with 23 pounds with Loresco RS3 coke breeze backfill.
- e. Manufacturers, or equal
  - i. CerAnode
  - ii. Corrpro Companies
  - iii. Farwest Corrosion

4. Anode Backfill

Backfill material for impressed current anodes shall be Loresco RS3 coke breeze with a fixed carbon content of 99.4-percent by weight, ash 0.5%, moisture 0.1%, volatiles nil (950°C), a bulk density of 68 lbs per cubic foot, and maximum particle size 2.5mm.

## 5. Cables

- a. All underground cables utilized for anodes cables shall be single conductor, stranded copper, single conductor, copper, with 20 mils of chlorine resistant fluoropolymer (Halar, Kynar, etc) primary insulation and an HMWPE outer jacket in accordance with the requirements of ASTM-D-1248, Type-1, Class-C, Grade- 5, and ICEA-NEMA S-61-402.
- b. All cables for test stations shall be Type THHN, stranded copper, sized as shown on the plans, and shall conform to Federal Specifications JC-30B.
- c. Test Leads: Extend 18 inches minimum above grade after connection to test station terminal board.

## 6. Cable-to-Pipe Connections

- a. The cable connections to each steel casing shall be accomplished utilizing an exothermic welding process as shown on the drawings. Each cable shall be fitted with a copper sleeve for accomplishing the weld and cartridge, sleeves and molds for each weld shall be furnished by the same manufacturer. All materials for welding shall be sized and in accordance with recommendations in manufacturers' literature. Where shown on the drawings, the cable connections shall be made by welding a prefabricated rod& cable assembly to the pipeline.
- b. Manufacturers, or equal
  - i. "Cadweld" by Erico Products, Inc.,
  - ii. "Thermoweld" by Continental Industries, Inc.

## 7. Cable-To-Pipe Coating Material

- a. Epoxy shall be used for sealing the cable to pipe connections.
- b. Manufacturers, or equal
  - i. Durcon-164, by Duriron Company
  - ii. Scotchcast Resin No. 4, by 3-M Company
  - iii. CC-1 Potting Compound, by PSI Products.
- c. Epoxy paste or Royston Handy Caps may, at the discretion of the Corrosion Engineer, be used as alternatives to liquid epoxy resin. Epoxy paste such as Aquamend as manufactured by Polymeric Systems, Inc., may be used. The Royston Handy Cap, which is a molded plastic cap filled with a corrosion resistant compound on a base of thick elastomeric tape, as manufactured by Royston Laboratories Division or equal may be used only with its associated Roybond 747 primer. The dimensions of the Handy Cap are as follows: 4 inch by 4 inch overall, 10 mils minimum sheet thickness, 125 mils minimum tape thickness. Roybond 747 manufactured by Royston Laboratories Division shall be used to prime the exposed metal surfaces and the 4 inch by 4 inch area to be covered by the Handy Cap.

## 8. Cable Warning Tape

- a. All buried cables shall have plastic warning tape installed a minimum of 12 inches above the top of the cables for the entire buried length of the cables. The warning tape shall be 4 in. wide and shall be yellow with black lettering with the legend "CAUTION, CATHODIC PROTECTION CABLES BURIED BELOW" in 3 in. high lettering printed at a minimum of seven foot intervals along the entire buried length of the cable.

## 9. Cable Identification Tag

- a. All cables in the junction boxes and rectifiers shall be identified. The identification tags shall be white plastic "zip-tie" type straps with a plastic tab of sufficient size to allow writing on the tab with a permanent felt tip marker.

## 10. Rigid Steel Conduit and Fittings

- a. Rigid steel conduit and fittings shall be hot-dipped galvanized and shall conform to ANSI Specification C80.1 for Rigid Metallic Conduit.

## 11. Rigid PVC Conduit and Fittings

- a. Rigid polyvinylchloride (PVC) conduit and fittings shall be Schedule 40, manufactured to NEMA TC-2 and WC-1094 specifications and shall be U.L. approved.

## 12. Test Station Components

- a. Terminal boxes for the Anode Test Stations shall be locking type, constructed of high-impact, molded Lexan plastic. The test box shall be provided with sufficient hardware and binding post terminals for each cable as shown on the drawings. All test station hardware, including nuts, bolts and shorting straps shall be nickel plated brass, and shall be from the same manufacturer as the terminal box.
  - i. Cable Terminations: If terminal posts with washers and nuts are utilized, all cables that terminate in the terminal boxes shall have ring type connectors that are sized appropriately for the terminal bolts. The ring connectors shall be either a soldered ring type connection or a heavy duty, compression type crimp connection.
  - ii. If binding post terminals are utilized, ring connectors are not required.
  - iii. Subject to Compliance with the Contract Documents the following Manufacturers are acceptable:
    1. Model: T-3 by Tinker & Rasor Company
    2. Model: Big Fink by Cott Manufacturing Company
    3. Or approved equal
- b. Traffic Valve Box: Brooks Type 1RT Traffic Box, or Christy G-5 Traffic Box, or approved equal.

- c. Valve Box Covers: Cast iron, with legend "CP TEST" as indicated on Drawings.

### 13. Centering Devices

- a. Centering devices for centering anodes in the anode hole shall be designed and fabricated by the Contractor and shall be submitted to the ENGINEER for approval prior to use. The device shall be constructed of carbon steel and shall be designed to permit easy adjustment in the field.

### 14. Concrete Boxes

- a. Ground level concrete boxes shall be Christy G5 traffic box with a cast iron lid as shown on the drawing. The cover shall be manufactured with "ANODE" markings for easy identification.

## C. EXECUTION

### 1. Material Delivery, Storage and Protection

- a. All materials and equipment to be used in construction shall be stored in such a manner to be protected from detrimental effects from the elements. If warehouse storage cannot be provided, materials and equipment shall be stacked well above ground level and protected from the elements with plastic sheeting or other method as appropriate.

### 2. General

- a. All materials, workmanship and installation shall conform with all requirements of the legally constituted authority having jurisdiction. These authorities include, but are not limited to, the latest revision of the State of California, Department of Industrial Relations, Division of Industrial Safety, Electrical Orders; The National Electric Code, General Construction Safety Orders of the Industrial Accident Commission; and all other applicable State, County, or City codes and regulations. Nothing in the drawings or specifications is to be construed to permit work not conforming to these regulations and codes. Where larger size or better grade materials than required by these regulations and codes are specified, the specifications and drawings shall have precedence.

### 3. Electrical Service

- a. Electrical service for the rectifiers shall be provided by the Contractor and shall be provided in strict accordance with NFPA 30, NEC and the local codes. The Contractor shall be responsible for furnishing and installing the necessary wiring, conduits, cables, splice boxes and equipment to run power from existing breaker panels to the rectifiers at each pump station. The rectifiers shall be powered by a 30- Amp breaker.

#### 4. Rectifiers

- a. The rectifiers shall be installed as shown on the drawings. Exact location of the rectifier shall be approved by the Engineer. The structure header cable casing junction panel shall be connected to the negative output terminal of the rectifier, and the anode header cable from the anode junction panel shall be connected to the positive terminals of the rectifier.

#### 5. Anodes

- a. 6-inch diameter holes shall be bored to the depth shown on the drawings. If necessary, the Contractor shall install casing or other approved materials to prevent caving of the hole during installation of anodes and coke breeze backfill. Non-metallic casing installed around anodes shall be removed, and non-metallic casing installed above anode backfill material may be left in place. No additional compensation will be allowed for casing or other devices used to prevent caving. Bottom 6 inches of the hole shall be filled with coke breeze and compacted. The terminal end of the cables shall be identified via crimping, and then anodes shall be lowered into the hole. Anodes shall be centered in the hole with approved centering devices. At no time shall any anode cable be allowed to support the weight of any anode. Anode cables shall be protected at all times to prevent damage to the insulation. The annual space of the hole shall be backfilled with coke breeze and compacted with hand tamping. Remainder of the hole shall be backfilled using native soil free of rocks and debris.

#### 6. Cables

- a. Cables buried in the ground shall be direct buried or in conduit as shown on the drawings and shall be laid straight, without kinks. The cable shall have a minimum cover of 30 in. Each cable run shall be continuous in length and free of joints or splices. Care shall be exercised during installation to avoid punctures, cuts, and similar damage to insulation. Any damage to insulation will require replacement of the entire cable length. Backfill surrounding the cables shall be native soil free of foreign materials. Cable warning tape shall be installed 12- inches above the entire buried length of the cable.

#### 7. Cable-To-Pipe Connections

- a. Cable-to-steel casing connections shall be installed in the manner and at the locations shown on the drawings. Coating materials shall be removed from the casing's surface over an area just sufficient to make the connections. The surface shall be cleaned to white metal by grinding or filing prior to welding the conductor. Grinding with resin impregnated wheels shall not be allowed. The conductor shall be welded to each steel casing by the exothermic process with a copper sleeve fitted over the conductor, and only sufficient insulation shall be removed from the conductor to allow placing in welding mold. After the weld has cooled, all slag shall be removed and the weld shall be tested with a sharp blow from a 16 ounce hammer to assure proper metallurgical bond. All defective welds shall be removed and replaced. All exposed surfaces of

copper and steel shall be covered with a minimum thickness of ¼ in. of insulating materials as shown on the drawings.

#### D. SYSTEM COMMISSIONING

1. After installation of the cathodic protection facilities, the system shall be tested, and adjusted by the CORROSION ENGINEER, hired by the OWNER, to assure conformance with the specifications. Testing shall include a determination of proper installation of each component, including anodes, rectifiers and reference electrodes. Upon completion of tests, a detailed report will be submitted describing any deficiencies detected. Any and all deficiencies shall be corrected by the CONTRACTOR and site conditions restored prior to final acceptance. All retesting shall be at the CONTRACTOR's expense.
2. The Contractor shall notify the ENGINEER 48 hours prior to installation of any cathodic protection components so that inspections can be scheduled. Phone messages left with others will not be considered adequate notification. The Contractor shall not backfill any cathodic protection components prior to inspection and approval by the ENGINEER.

#### E. QUALITY ASSURANCE

1. General
  - a. All work shall be performed to the satisfaction of the ENGINEER.
  - b. The Contractor shall not substitute for the specified materials unless approved by the ENGINEER.
  - c. Compaction of backfill and trenches shall match the existing conditions and shall be approved by the ENGINEER.

#### F. INTERFERENCE AND EXACT LOCATIONS

1. General
  - a. The general locations of the facilities are shown on the drawings. However, the CONTRACTOR shall visit the premises and thoroughly familiarize himself with all details of the work and working conditions, verify existing conditions in the field, determine the exact locations of existing pipelines and structures and advise the ENGINEER of any discrepancy that may prevent or hinder the specified work from being completed. The CONTRACTOR shall be solely responsible for location and marking underground structures so as to avoid damage during construction.

#### G. CODES

1. Codes and Regulations
  - a. All materials, workmanship, and installation shall conform with all requirements of the legally constituted authority having jurisdiction. These authorities include, but are not

limited to, the latest revision of the State of California, Department of Industrial Relations, Division of Industrial

Safety Orders of the Industrial Accident Commission, and all other applicable State, County, or City codes and regulations. Nothing in the drawings or specifications is to be construed to permit work not conforming to these regulations and codes. Where larger size or better grade materials than required by these regulations and codes are specified, the specifications and drawings shall have precedence.

## H. REFERENCES

### 1. Reference Specifications

This section contains references to the following documents. They are a part of this section as specified and modified. In case of a conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

- a. American Society of Testing and Materials (ASTM)
- b. National Electrical Manufacturers Association (NEMA)
- c. American Water Works Association (AWWA)
- d. National Association of Corrosion ENGINEERs (NACE)
- e. American National Standards Institute (ANSI)

## I. MEASUREMENT AND PAYMENT

Full compensation for cathodic protection will be measured by lump sum. The contract price paid by lump sum "**Impressed Current Cathodic Protection,**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in implementing the cathodic protection outlined in the plans, as specified in these Technical Specifications, and as directed by the Engineer.