

CITY OF PITTSBURG



**NOTICE INVITING BIDS, BID PROPOSAL, CONTRACT DOCUMENTS, GENERAL AND
SPECIAL CONDITIONS, AND TECHNICAL SPECIFICATIONS**

FOR THE CONSTRUCTION OF

PROJECT NO. 2028

HSIPSL-5127(040)

**CRESTVIEW DRIVE SAFETY IMPROVEMENTS PROJECT
(CDBG FUNDED)**

**IN
PITTSBURG, CALIFORNIA**

TO BE USED IN CONJUNCTION WITH:

CITY OF PITTSBURG STANDARD DETAILS AND SPECIFICATIONS (DATED 2022 AND CURRENT UPDATES),
STANDARD SPECIFICATION AND PLANS ISSUED BY THE STATE OF CALIFORNIA, DEPARTMENT OF
TRANSPORTATION (DATED 2023 AND CURRENT UPDATES)

MARCH 2024

A handwritten signature in black ink, appearing to read 'Dayne Johnson', is written over a horizontal line.

ACCEPTED FOR USE:

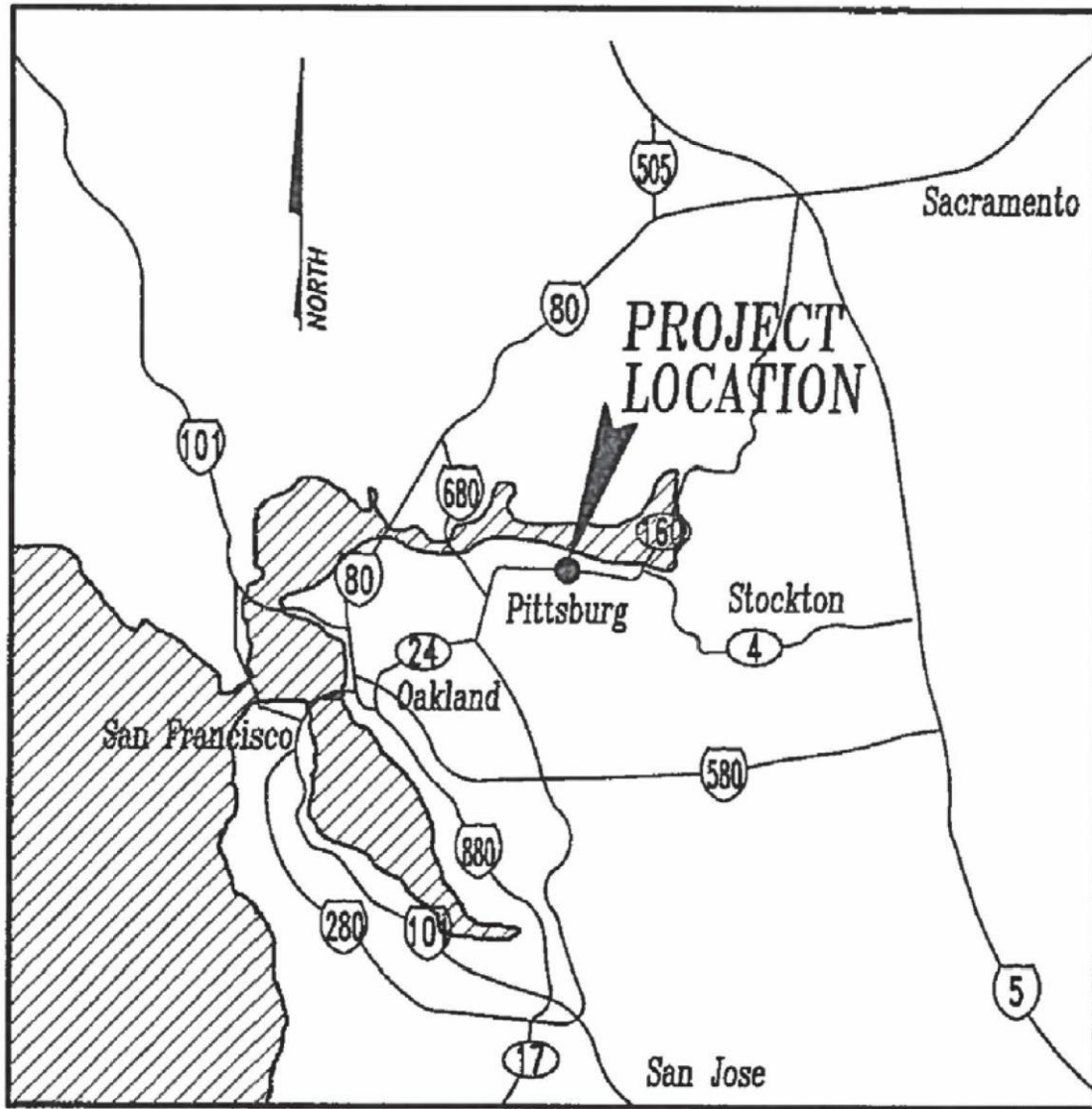
Dayne Johnson, PE C-61408

Assistant City Engineer Signing on behalf of

JOHN SAMUELSON, PE

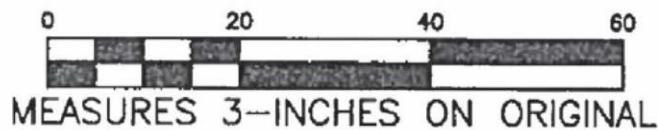
C - 67734

PUBLIC WORKS PUBLIC WORKS DIRECTOR/CITY ENGINEER



VICINITY MAP

1" = 20 Miles



CITY OF
PITTSBURG

NO.	DATE	REVISION	DRAWN BY: AP
			CHECKED BY: AP
			DATE: 3/13/2019
			SCALE: NOTED

VICINITY MAP

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Notice Inviting Bids

1. **Bid Submission.** The City of Pittsburg (“City”) will accept sealed bids for its Crestview Drive Safety Improvements Project (“Project”), by or before April 3, 2024, at 9:00 a.m., at the Pittsburg City Hall office, located at 65 Civic Avenue, Pittsburg, California, at which time the bids will be publicly opened and read aloud.
2. **Project Information.**
 - 2.1 **Location and Description.** The Project is located at multiple intersections along Crestview Dr. In general, the work to be performed consists of asphalt concrete removal and installation, concrete median installation, concrete bulb-out installation, concrete traffic circle, ADA ramp construction, PCC curb & gutter removal and replacement, PCC sidewalk removal and replacement, rectangular rapid flash beacon (RRFB) installation, striping removal and replacement, install storm drain pipes and storm drain structures, mobilization, traffic control and construction signage, storm water pollution control, dust prevention and control, site cleanup, and all other work as shown on the Plans and as called for in the Specifications and as directed by the Engineer.
 - 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 April 22, 2024, 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 \$590,000.
3. **License and Registration Requirements.**
 - 3.1 **License.** This Project requires a valid California contractor’s license for the following classification(s): **Class A General Engineering, Class C Specialty - Concrete**
 - 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.** The plans, specifications, bid forms and contract documents for the Project, and any addenda thereto (“Contract Documents”) may be downloaded from City’s website located at: <https://www.pittsburgca.gov/business/current-bidding-opportunities>. A printed copy of the Contract Documents is not available.
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 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.

Dayne Johnson,
PE C-61408
By: Assistant City Engineer  Date: 3/13/2024
Signing on behalf of
John Samuelson, Public Works Director / City Engineer

Publication Date: March 2024

END OF NOTICE INVITING BIDS

Instructions to Bidders

Each Bid Proposal submitted to The City of Pittsburg ("City") for its Crestview Drive Safety Improvements Project ("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:

Crestview Drive Safety Improvement Project Project No. 2028

City Clerk
65 Civic Avenue
Pittsburg, CA, 94565
Attn: Alice Evenson

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 or 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 2028bidinfo@pittsburgca.gov. Oral responses are not authorized and are not binding on the City. Bidders should submit any such written inquiries 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.

A "NON-MANDATORY" PRE-BID MEETING SHALL BE HELD AT CITY HALL, ON WEDNESDAY, MARCH 20TH, 2024 AT 2:30 P.M.
 - 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.** Any addenda issued prior to the bid opening are part of the Contract Documents. Subject to the limitations of Public Contract Code § 4104.5, City reserves the right to issue addenda prior to bid time. 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: <https://www.pittsburgca.gov/business/current-bidding-opportunities>.
- 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 City at 65 Civic Avenue, Pittsburg, California or sent via email at 2028bidinfo@pittsburgca.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. **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.
 - 17.1 **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.

- 17.2 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.
- 18. 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.
- 19. Federal Subcontracting Requirements.** This Project is funded in whole or in part by the federal government. Contractor must comply with all applicable federal requirements as further specified in the Contract Documents, and when procuring Subcontractors, must take all necessary affirmative steps pursuant to 2 CFR § 200.321(b), subject to the limitations of law, to ensure that minority businesses, women’s business enterprises, and labor surplus area firms are used when possible. Affirmative steps must include:
- 19.1 Solicitation Lists.** Placing qualified small and minority businesses and women’s business enterprises on solicitation lists.
- 19.2 Soliciting Potential Sources.** Assuring that small and minority businesses and women’s business enterprises are solicited whenever they are potential sources.
- 19.3 Maximizing Participation.** Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women’s business enterprises.
- 19.4 Establishing Delivery Schedules.** Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women’s business enterprises.
- 19.5 Organizational Assistance.** Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.
- 20. 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).

END OF INSTRUCTIONS TO BIDDERS

Bid Proposal

Crestview Drive Safety Improvements Project

_____ (“Bidder”) hereby submits this Bid Proposal to the City of Pittsburg (“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.)
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.

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 CF = Cubic Feet CY = Cubic Yard EA = Each LB = Pounds
 LF = Linear Foot LS = Lump Sum SF = Square Feet TON = Ton (2000 lbs)

Item #	Description	Quantity	Unit	Unit Price	Item Total
Miscellaneous					
1	Mobilization	1	LS		
2	Traffic control	1	LS		
3	Storm Water Pollution Control	1	LS		
4	Clearing & Grubbing	1	LS		
Miscellaneous Subtotal					
Demolition					
5	Remove Asphalt Concrete	4,150	SF		
6	Remove PCC Valley Gutter	650	SF		
7	Remove PCC Curb & Gutter	246	LF		
8	Remove PCC Curb Ramp	300	SF		
9	Remove PCC Sidewalk	830	SF		
10	Remove Storm Drain Inlet	2	EA		
Demolition Subtotal					
Improvements					
11	Install Asphalt Concrete	70	TN		
12	Install PCC Valley Gutter	125	SF		
13	Install PCC Curb & Gutter	295	LF		
14	Install PCC Curb Ramp	1,590	SF		
15	Install PCC Sidewalk	665	SF		
16	Install Median Curb	1,120	LF		
17	Install Median Island	1,120	SF		
18	Install 15" RCP Storm Drain Pipe	45	LF		
19	Install Type "A" Storm Drain Inlet	3	EA		
20	Convert Existing Inlet with Manhole	2	EA		
Improvements Subtotal					

Signing & Striping					
21	Remove Existing Striping	2,975	LF		
22	Remove Existing Pavement Marking	28	EA		
23	Remove Sign, Post, and Foundation	1	EA		
24	Remove Delineators and Raised Curb	395	LF		
25	Install Thermoplastic Pavment Striping - Detail 22	400	LF		
26	Install Thermoplastic Pavment Striping - Detail 24	730	LF		
27	Install Thermoplastic Pavment Striping - Detail 29	180	LF		
28	Install Thermoplastic Pavment Striping - Detail 32	290	LF		
29	Install Thermoplastic Pavment Striping - Detail 38	460	LF		
30	Install Thermoplastic Pavment Striping - Detail 39	187	LF		
31	Install Thermoplastic Pavment Striping - Detail 39A	131	LF		
32	Install 12" White Thermoplastic Pavement Striping	927	LF		
33	Install Thermoplastic Continental Crosswalk Striping	550	SF		
34	Install Yellow Reflective Pavement Markers	35	EA		
35	Paint Red Curb	35	LF		
36	Paint Yellow Curb	55	LF		
37	Install Thermoplastic Pavement Marking	621	SF		
38	Furnish and Install Post and Foundation	16	EA		
39	Furnish and Install Sign (Existing or New Post)	36	EA		
40	Furnish and Install RRFB System	4	EA		
Signing & Striping Subtotal					

* Final Pay Quantity

TOTAL BASE BID: Items 1 through 40 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 Pittsburg (“City”) for work on the Crestview Drive Safety Improvements Project (“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.
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

CRESTVIEW DRIVE SAFETY IMPROVEMENTS PROJECT

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 Pittsburgh ("City") and _____ ("Contractor"), for work on the Crestview Drive Safety Improvements Project ("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 \$1,000 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:

Public Works Department/Engineering Division
65 Civic Avenue
Pittsburg, CA, 94565
(925) 252-4930

Lydia Blakley, Administrative Specialist
LBlakley@pittsburgca.gov

Andrew Peters, Assistant Engineer
APeters@pittsburgca.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.

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

CITY:

Approved as to form:

s/ _____

s/ _____

Name, Title

Name, Title

Date: _____

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 Pittsburg ("City") and _____ ("Contractor") have entered into a contract for work on the Crestview Drive Safety Improvements Project ("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:

s/ _____

Date

Name, Title

END OF PAYMENT BOND

Performance Bond

The City Pittsburg ("City") and _____ ("Contractor") have entered into a contract for work on the Crestview Drive Safety Improvements Project ("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:

s/ _____

Date

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; 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 Pittsburg and his or her 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 the 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.

(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 Plans, Specifications, and other 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 \$2,000,000 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.

(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.

(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 written notice to City, unless due to non-payment of premiums, in which case ten days 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, and 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, and 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 causes that are beyond the control of either City or Contractor, including Weather Delay Days, discovery of Historic or Archeological Items pursuant to Section 7.18, or the actions or inactions of third parties or other agencies, 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 ten 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 ten 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 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 in violation of this provision.

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.** All manufacturers' application or installation instructions must be provided to City at least ten days prior to the first such application. The instructions and manuals, along with any required guarantees, must be delivered to City for review.

(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 the Surface Mining and Reclamation Act of 1975, Public Resources Code § 2710 et seq., any purchase of mined materials, such as construction aggregate, sand, gravel, crushed stone, road base, fill materials, and any other mineral materials must originate from a surface 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 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 acceptance of the Project.

(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 delegate 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) **Definition.** "Claim" means a separate demand by Contractor, submitted in writing by registered or certified mail with return receipt requested, for a change in the Contract Time, including a time extension or relief from liquidated damages, or a change in the Contract Price, when the demand has previously been submitted to City in accordance with the requirements of the Contract Documents, and which has been rejected or disputed by City, in whole or in part. A Claim may also include that portion of a unilateral Change Order that is disputed by the Contractor.

(B) **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.

(C) **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.

(D) **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.

(E) **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, clearly identified as a “Claim” submitted pursuant to this Article 12 and 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 15 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 15 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 15 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. 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:

- 1.1 Name, 24-hour contact information, and qualifications of the proposed on-site superintendent;
- 1.2 List of all key Project personnel and their complete contact information, including email addresses and telephone numbers during regular hours and after hours;
- 1.3 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;
- 1.4 If required, traffic control plans associated with the staging plans that are signed and stamped by a licensed traffic engineer;
- 1.5 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;
- 1.6 Breakdown of lump sum bid items, to be used for determining the value of Work completed for future progress payments to Contractor;
- 1.7 Schedule with list of Project submittals that require City review, and list of the proposed material suppliers;
- 1.8 Plan for coordination with affected utility owner(s) and compliance with any related permit requirements;
- 1.9 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;
- 1.10 If requested by City, Contractor's cash flow projections; and
- 1.11 Any other documents specified in the Special Conditions or Notice of Potential Award.

2. 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.

- 2.1 **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.

3. Federally Funded Projects. This Project is funded in whole or in part by federal funds and subject to the following federal requirements under the terms of the funding agreement(s) between City and the federal agency or agencies providing federal funds, which are fully incorporated by this reference and made part of the Contract Documents. Copies of any funding agreement between City and a funding agency will be made available upon request.

3.1 Equal Opportunity. During the performance of this Contract, the Contractor agrees as follows:

(A) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action will include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(B) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(C) The Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision will not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Contractor's legal duty to furnish information.

(D) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the labor union or workers' representatives of the Contractor's commitments under this section, and will post copies of the notice in conspicuous places available to employees and applicants for employment.

(E) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the United States Secretary of Labor.

(F) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the United States Secretary of Labor, or pursuant thereto, and will

permit access to his books, records, and accounts by the administering agency and the United States Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(G) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further federal government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the United States Secretary of Labor, or as otherwise provided by law.

(H) The Contractor will include the portion of the sentence immediately preceding paragraph (A) and the provisions of paragraphs (A) through (H) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the United States Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each Subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the City or funding agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: *Provided*, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a Subcontractor or vendor as a result of such direction by the City or funding agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

- 3.2 Davis-Bacon Act.** Contractor will pay wages to laborers and mechanics, not less than once a week, and at a rate not less than the current federal prevailing wages specified in the Davis-Bacon Act Wage Determination attached hereto and incorporated herein. By entering into this Contract, Contractor accepts the attached Wage Determination. <https://sam.gov/content/wage-determinations>
- 3.3 Copeland "Anti-Kickback" Act.** Contractor will comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 CFR Part 3 as may be applicable, which are incorporated by reference into this Contract. Contractor and Subcontractors must insert this requirement into subcontracts of any tier. Contractor is responsible for compliance with these requirements by each Subcontractor of any tier.
- 3.4 Contract Work Hours and Safety Standards Act.** In addition to the California state law requirements in Article 9 of the General Conditions, Contractor and each Subcontractor must comply with the requirements of the federal Contract Work Hours and Safety Standards Act, as set forth in 40 U.S.C. 3701-3708, as supplemented by the regulations set forth in 29 CFR Part 5, as may be amended from time to time, which are fully incorporated herein, including:

(A) No Contractor or Subcontractor will require or permit any laborer or mechanic performing Work for the Project to work in excess of 40 hours in a work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours during that work week.

(B) If Contractor or a Subcontractor violates this requirement, the Contractor and any responsible Subcontractor will be liable for the unpaid wages. In addition, the Contractor and Subcontractor will be liable to the United States for liquidated damages. The liquidated damages will be computed with respect to each individual worker as specified under federal law.

(C) Contractor and Subcontractors must insert this requirement into subcontracts of any tier. Contractor is responsible for compliance with these requirements by each Subcontractor of any tier.

3.5 Rights to Inventions. If the federal funding for this Contract meets the definition of "funding agreement" under 37 CFR § 401.2(a) and constitutes an agreement between the City and a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency, will apply to this Contract and are fully incorporated into the Contract Documents by this reference.

3.6 Clean Air Act. If the Contract is for an amount in excess of \$150,000, Contractor and each Subcontractor must comply with the requirements of the Clean Air Act, as amended, (42 U.S.C. §§ 7401-7671q), which are fully incorporated into the Contract Documents by this reference, including requirements for reporting violations to the awarding agency and the applicable Regional Office for the Environmental Protection Agency. Contractor and Subcontractors must insert this requirement into subcontracts of any tier in excess of \$150,000.

3.7 Federal Water Pollution Control Act. If the Contract is for an amount in excess of \$150,000, the requirements of the Federal Water Pollution Control Act (33 U.S.C. §§ 1251-1387) apply to this Contract and are fully incorporated into the Contract Documents by this reference, including requirements for reporting violations to the awarding agency and the applicable Regional Office for the Environmental Protection Agency. Contractor and Subcontractors must insert this requirement into subcontracts of any tier in excess of \$150,000.

3.8 Suspension and Debarment. Contractor is required to verify that neither it, nor its principals, as defined at 2 CFR § 180.995, or its affiliates, as defined at 2 CFR § 180.905, are excluded or disqualified, as defined at 2 CFR §§ 180.935 and 180.940. Contractor must comply with 2 CFR Part 180, subpart C and 2 CFR Part 3000, subpart C, and must include a provision requiring compliance with these regulations in any subcontract of any tier. If it is later determined that the Contractor did not comply with the applicable subparts, the Federal Government may pursue available remedies, including, but not limited to, suspension and/or debarment. By submitting a bid and entering into this Contract, Contractor agrees to comply with these requirements.

3.9 Byrd Anti-Lobbying Amendment. If the Contract is for an amount in excess of \$100,000, Contractor must comply with the Byrd Anti-Lobbying Amendment (31 U.S.C. § 1352) and file the certification provided at 44 CFR Part 18, Appendix A, and any disclosures, with the applicable federal agency. Each tier certifies to the tier above that it will not and has not used federal-appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of

Congress, or an employee of a member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier will also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures will be forwarded from tier to tier up to the recipient.

- 3.10 Procurement of Recovered Materials.** The requirements of § 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act at 42 U.S.C. § 6962, apply to this Contract and are fully incorporated into the Contract Documents by this reference. For individual purchases of \$10,000 or more, Contractor will make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired (A) competitively within the Contract schedule, (B) in conformance with Contract performance requirements, or (C) at a reasonable price. Information on this requirement, including a list of EPA-designated items, is available at the EPA's Comprehensive Procurement Guidelines website:
<https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.
- 3.11 Prohibition on Covered Telecommunications.** Federal loan or grant funds must not be obligated or expended to procure or obtain, extend or renew a contract to procure or obtain, or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, as further specified in 2 CFR § 200.216, which is fully incorporated into the Contract Documents by this reference. Covered telecommunications equipment or services includes equipment produced by, services provided by, or services using equipment produced by: Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities); Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities); or an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.
- 3.12 Domestic Preferences for Procurements.** As appropriate and to the extent consistent with Laws, the City should, to the greatest extent practicable under a federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States, as further specified in 2 CFR § 200.322, which is fully incorporated into the Contract Documents by this reference, including, but not limited to, iron, aluminum, steel, cement, and other manufactured products, as specified therein. The requirements of 2 CFR § 200.322 must be included in all subcontracts and purchase orders for work or products under the federal award.

END OF SPECIAL CONDITIONS

SECTION 01 10 00 – SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

- A. This section describes the contract and other work, plus project requirements.
- B. Related Sections:
 - 1. Division 00 – General Conditions.

1.2 CONTRACT DESCRIPTION

- A. Contract: Perform Work of Contract under stipulated sum contract with City per Contract Documents.
- B. Responsible Parties: Construction of the Project is governed by the agreement between the City and the Contractor. Statements in the specifications are directed to this contractor, who has overall responsibility for the subcontractors.
- C. Project Manager: The City will provide a Project Manager who will administer the project during the contract.

1.3 WORK UNDER OTHER CONTRACTS

- A. Separate Contracts: The City may award separate contracts for the performance of certain construction operations at the site. Those operations will be conducted simultaneously with the work under the Contract. The Contracts are described in Division 00 Article 2 Section 2.4 – Coordination of Work.

1.4 SCHEDULE OF VALUES

- A. Schedule of Values: The Schedule of Values and Bid Schedule are described in Division 00 Article 8 – Payment. Any bid item may be deleted in total or in part prior to or after award of Contract without compensation in any form or adjustment of other bid items or prices, therefor.

1.5 MISCELLANEOUS WORK

- A. Miscellaneous Work Requirements: Coordinating, handling, transporting, and installing items such as field testing of systems; leveling; furnishing, coordinating, and installing sleeves, anchors, and other embedded items; posting of signs; performing traffic routing work; providing operating and maintenance data and instruction of the City Project Manager; performing warranty work as required; and doing incidental and related work to place all systems and structures in operating condition as designed and as required by Federal, State and Local

codes and regulations. Refer to Division 00 – General Conditions for a summary of work requirements.

1.6 OWNER-FURNISHED PRODUCTS

A. Owner's Responsibilities:

1. Arrange for and deliver Owner-reviewed Shop Drawings, Product Data, and Samples to Contractor.
2. Upon delivery, inspect products jointly with Contractor.
3. Submit claims for transportation damage and replace damaged, defective, or deficient items.
4. Arrange for manufacturers' warranties, inspections, and service.

B. Contractor's Responsibilities:

1. Review Owner-reviewed Shop Drawings, Product Data, and Samples.
2. Receive and unload products at Site; inspect for completeness or damage jointly with Owner.
3. Arrange and pay for delivery to Site. Retrieve items from City Corporation Yard or other designated location, as required, and transport to site. Transport salvaged items to City Corporation Yard.
4. Handle, store, install, and finish products.
5. Repair or replace items damaged after receipt.

1.7 WORK SEQUENCE

- ### A. Stages: Construct Work in stages and at times to accommodate City operation requirements during the construction period; coordinate construction schedule and operations with Project Manager.

1.8 COOPERATION OF CONTRACTOR AND COORDINATION WITH OTHER WORK

- ### A. Coordination: Coordinate with City and any City forces, or other contractors and forces, as required by Division 00 Article 2 Section 2.4 – Coordination of Work.

1.9 CONTRACTOR USE OF PREMISES

- ### A. General: During the construction period the Contractor shall have full use of the premises within the "limits of work" for construction operations, including use of the site. The Contractor's use of the premises is limited only by the City's right to perform work or to retain other contractors on portions of the Project.

B. Use of the Site:

1. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available for emergency vehicles at all times.
2. Traffic and Barrier Plan: When the Contractor needs to access portions of roadways and driveways, on and adjacent to the work, Contractor is

- required to submit a traffic and barrier plan to the City for their review and approval prior to setting up any traffic control devices.
3. Stored Materials: The Contractor assumes all responsibility for protection and safekeeping of material stored on the premises. Moving stored materials which interfere with the operations of the City or other contractors is the responsibility of the Contractor.
 4. Condition of Site: Maintain work areas in a safe condition at all times, remove all graffiti and accumulated rubbish and surplus materials at the end of each work day, and clean and restore the work site at completion of the work to the condition that existed prior to the start of work.
- C. Security of the Contractor's Work Area: The security of the Contractor's work areas and its property, equipment, construction materials, and all other items contained in the Contractor's staging areas or elsewhere on the construction site shall be solely the Contractor's responsibility at all times.

1.10 MAINTENANCE

- A. Contractor's Responsibility: Cost of maintenance of systems and equipment prior to Final Acceptance will be considered as included in prices bid and no direct or additional payment will be made therefor.

1.11 OCCUPANCY REQUIREMENTS

- A. Early Occupancy: Whenever, in the opinion of Project Manager, Work or any part thereof is in a condition suitable for use, and the best interest of City requires such use, City may take beneficial occupancy of and connect to, open for public use, or use the Work or such part thereof. In such case, City will inspect the Work or part thereof, and issue a Certificate of Substantial Completion for that part of Work.
- B. Repairs: Prior to date of Final Acceptance of the Work by City, all necessary repairs or renewals in Work or part thereof so used, not due to ordinary wear and tear, but due to defective materials or workmanship or to operations of Contractor, shall be made at expense of Contractor, as required in Division 00 Article 11 – Completion and Warranty Provisions.
- C. Acceptance: Use by City of Work or part thereof as contemplated by this section shall in no case be construed as constituting acceptance of Work or any part thereof. Such use shall neither relieve Contractor of any responsibilities under Contract, nor act as waiver by City of any of the conditions thereof.
- D. Partial Completion: City may specify in the Contract Documents that portions of the Work, including electrical and mechanical systems or separate structures, shall be substantially completed on milestone dates prior to substantial completion of all of the Work. Contractor shall notify Project Manager in writing when Contractor considers any such part of the Work ready for its intended use

and substantially complete and request Project Manager to issue a Certificate of Substantial Completion for that part of the Work.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION 01 10 00

SECTION 01 22 00 –UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies procedures and requirements for measurement and payment for unit price items listed on the Bid Form for each unit of work described herein.
- B. Refer to the Instruction to Bidders and Division 00 General Conditions and Division 00 Article 8 – Payment for related requirements pertaining to change orders, payments and unit prices.
- C. Prices:
 - 1. In addition to Base Bid, Bidder shall quote unit prices, in appropriate spaces on Bid Form for each unit of work as described herein. Change Orders will be based on unit prices quoted on Bid Form for applicable work.
 - 2. In event any unit price quoted appears to compare unfavorably with currently established prices for type of work, City reserves the right to require quoted price to be substantiated or adjusted prior to execution of contract.
 - 3. Unit prices listed on the Bid Form for the following items shall constitute full and complete compensation for each unit, and shall include cost of temporary and administrative work, permits, bonds, insurance, sales taxes, overhead, profit and every other expense, direct or indirect, incident to accomplishment of work under each item.
 - 4. **All work not specifically set forth in the Proposal as a pay item shall be considered as a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in prices shown in the Proposal.**

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 MEASUREMENT

- A. Measurement of quantities for payment will be made or determined by City's

Inspector.

1. Volume of any material shall be based on information included with Drawings and additional measurements obtained by Inspector, or by combination of such information, or in a manner which, in the opinion of the Inspector, is best suited to obtain necessary accuracy.
2. In case of unit prices based upon weight measurement, certified weight tickets shall be supplied at time of delivery of materials.
3. Excess materials delivered to the site, but not incorporated in the work, will not be paid for.

3.2 UNIT PRICE ITEMS

Measurement and payment for the items listed in the Bid Schedule shall be in accordance with the Standard Specifications except as modified hereinafter by these Technical Specifications.

Removal of Rejected and Unauthorized Work. All work which has been rejected shall be remedied or removed and replaced by the Contractor in an acceptable manner and no compensation will be allowed them for such removal, replacement, or remedial work.

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

Upon failure of the Contractor to comply promptly with any order of the Engineer made under this section the Engineer may cause rejected or unauthorized work to be remedied, removed, or replaced, and to deduct the costs from any moneys due or to become due the Contractor.

Character of Workmen. If any subcontractor or person employed by the Contractor shall appear to the Engineer to be incompetent or to act in a disorderly or Improper manner, he/she shall be discharged immediately on the direction of the Engineer, and such person shall not again be employed on the work.

Final Inspection. When the work has been completed, the Engineer will make the final inspection.

Removals, Replacements and Relocations. The Contractor shall remove, replace, or relocate existing facilities, including but not limited to, signage, traffic striping, irrigation, and landscaping as necessary to properly install new

facilities and as specified within the project specifications.

The Contractor shall be responsible for the replacement of any and all facilities, including, but not limited to, all traffic stripes, signage, pavement markings, pavement markers, landscaping, irrigation facilities, asphalt concrete and concrete flatwork, damaged during the duration of the Project. Damaged concrete

curb, gutter, sidewalk, and driveways shall be removed as necessary at construction joints and replaced to the lines, grades, and dimensions of the existing improvements and per City of Pittsburg Standard Details and as directed by the Engineer. The cost of replacing existing facilities shall be the Contractor's responsibility. If existing facilities are to be replaced or relocated, they shall be done so in accordance with the applicable City Standards and as directed by the Engineer.

Payment for complying with this Special Provision shall be included in the various other items of work, and no additional compensation will be allowed therefor.

Bid Item 1

The contract lump sum (LS) price paid for "**Mobilization**" as set forth in the Bid Schedule will be made in the form of monthly, prorated payments, no part of which will be approved for payment under the Agreement until the initial progress schedule has been furnished as specified herein. The scope of the work included under "Mobilization" shall include, but not be limited to, the following items a to m, which price shall constitute full compensation for all such work for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in mobilization and demobilization including the items listed in Part 1.1 of Section 01 71 13 MOBILIZATION as specified in these Specifications, and as directed by the Engineer and no additional compensation will be allowed therefor.

- a. Obtaining and paying for all bonds, insurance, and permits.
- b. Moving on to the site of all Contractor's plant and equipment required for operations per Section 5-1.33, "Equipment," of the Standard Specifications.
- c. Installing temporary facilities as may be required by the Contractor.
- d. Developing and installing construction water supply per Section 5-1.20B, "Permits, Licenses, Agreements, and Certifications" of the Standard Specifications as may be required by the Contractor.

- e. At Contractor's option, Contractor may provide and maintain field office trailers Contractor's own use. No field office trailers will be required for the Engineer.
- f. Providing on-site sanitary facilities and potable water facilities as specified per Cal-OSHA as required by Section 7-1.02K(6) "Occupational Safety and Health Standards" of the Standard Specifications.
- g. Furnishing, installing, and maintaining all storage buildings or sheds required for temporary storage of products, equipment, or materials that have not yet been installed in the Work. All such storage shall meet manufacturer's specified storage requirements, and the specific provisions of the specifications, including temperature and humidity control, if recommended by the manufacturer, and for all security.
- h. Arranging for and erection of Contractor's work and storage yard as may be required by the Contractor.
- i. Posting all OSHA required notices and establishment of safety programs per Cal-OSHA as required by Section 7-1.02K(6) "Occupational Safety and Health Standards" of the Standard Specifications.
- j. Contractor shall submit to the Engineer a practicable progress schedule as specified in Section 4-1.06 of these special provisions.
- k. Attending project meetings
- l. Maintaining as built plans on a daily basis and providing a marked set of as-built plans at project completion
- m. Final cleanup of the site and demobilization of Contractor's plant and equipment

Measurement will be made as a percentage of the costs incurred according to the list submitted except that not more than 75% of the bid price shall be paid prior to the final estimate for payment being due, said remaining 25% paid upon completion of cleanup and removal and demobilization with final payment.

Mobilization shall be considered as a non-adjustable contract item. Any contract change orders shall be considered as including full compensation for mobilization.

Bid Item 2

The contract lump sum (LS) price paid for "**Traffic Control**" as set forth in the Bid Schedule will be made in the form of monthly, prorated payments, no part of which will be approved for payment under the Agreement until the initial progress schedule and schedule of values have been furnished as specified herein. The scope of the work shall include full compensation for furnishing all labor, materials, tools, equipment, removing barriers and enclosures, provide and maintain the Pedestrian access and circulation that is fully wheelchair accessible and incidentals required for performing all operations required to provide for the safe and convenient movement of public vehicular and pedestrian traffic through and around the construction area, including furnishing, transporting, installing, relocating, maintaining, and removing of all channelizing devices, barricades, flashing arrow signs, temporary signs, temporary striping, and temporary pavement markings including the items listed in Part 1.1 of Section 01 55 26 TEMPORARY TRAFFIC CONTROL as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Measurement for "Traffic Control" will be made as a percentage of the costs incurred according to the list submitted except that not more than 75% of the bid price shall be paid prior to the final estimate for payment being due, said remaining 25% paid upon completion of cleanup and removal with final payment.

The adjustment provisions in the State Standard Specifications, Section 4-1.05, "Changes and Extra Work", shall not apply to the item of temporary traffic control system. Any adjustment in compensation for temporary traffic control due to an increase or decrease in the amount of traffic control system required by changes ordered by the Project Manager will be made on the basis of the cost of the increased or decreased temporary traffic control necessary. Such adjustment will be made on a force-account basis as provided in Section 9-1.04, "Force Account", of the State Standard Specifications for increased work.

Bid Item 3

The contract lump sum (LS) price paid for "**Storm Water Pollution Control**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in developing, preparing, obtaining approval of, revising, amending, and implementing the water pollution control plan and maintaining best management practices (BMP's), and for doing all the work involved in installing, constructing, maintaining, removing, and disposing of water pollution control practices, including non-storm water and waste management and materials pollution water pollution control practices, except those shown on the plans and for which there is a separate bid item, as specified in plans, the Standard Specifications, and the special provisions, and as directed by the Engineer. All work in sections 4-1.13, "Cleanup", and 10-5, "Dust Control" of the Standard

Specifications shall be included with this item.

Bid Item 4

The contract lump sum (LS) 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 to complete the work of clearing, grubbing, demolition, offhaul and disposal of the areas to receive grading and the installation of the sidewalk and other item necessary for Clearing and Grubbing as indicated on the plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 5

The contract unit price paid per square foot (SF) for “**Remove Asphalt Concrete**” to install new improvements, shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in obtaining demolition permits, permit fees, removal and disposal of asphalt concrete, base, subgrade, including furnishing, constructing, maintaining, removing, and disposing of temporary asphalt concrete tapers (e.g., at driveways and utility structures), as specified herein, complete in place as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 6

The contract unit price paid per square foot (SF) for “**Remove PCC Valley Gutter**” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in obtaining demolition permits, permit fees, saw cutting, demolishing, removal and disposal of existing PCC valley gutter, base and/or other material, as specified herein, complete in place as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor..

Bid Item 7

The contract unit price paid per linear foot (LF) for “**Remove PCC Curb & Gutter**” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in obtaining demolition permits, permit fees, saw cutting, demolishing, removal and disposal of existing PCC curb and gutter, base and/or other material, as specified herein, complete in place as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 8

The contract unit price paid per square foot (SF) for “**Remove PCC Curb**

Ramp” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in obtaining demolition permits, permit fees, saw cutting, demolishing, removal and disposal of existing PCC curb ramp, base and/or other material, as specified herein, complete in place as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 9

The contract unit price paid per square foot (SF) for **“Remove PCC Sidewalk”** shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in obtaining demolition permits, permit fees saw cutting, demolishing, removal and disposal of existing PCC sidewalk, base and/or other material, as specified herein, complete in place as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 10

The contract unit price paid per each (EA) for **“Remove Storm Drain Inlet”** shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in obtaining demolition permits, permit fees, saw cutting, demolishing, removal and disposal of existing storm drain inlet, pcc, base and/or other material, as specified herein, complete in place as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 11

The contract price paid per ton (TN) for **“Install Asphalt Concrete”** shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in furnishing and placing asphalt concrete, tack coat, and leveling courses, AC conform paving/AC patch pave, complete in place as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 12

The contract unit price paid per square foot (SF) of **“Install PCC Valley Gutter”** shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved, including but not limited to preparing the subgrade, trimming tree roots (2-inches or smaller in diameter), furnishing and compacting the aggregate base, doweling into the existing concrete, furnishing, placing and finishing concrete, placing curing compound, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional

compensation will be allowed therefor.

Bid Item 13

The contract unit price paid per linear foot (LF) for “**Install PCC Curb & Gutter**” shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in protecting and incorporating existing pipe drains into the new work, preparing the subgrade, trimming tree roots (2-inches or smaller in diameter), furnishing and compacting the aggregate base, doweling into the existing concrete, furnishing, placing and finishing concrete, and placing curing compound, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 14

The contract unit price paid per square foot (SF) for “**Install PCC Curb Ramp**” shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in preparing the subgrade, trimming tree roots (2-inches or small in diameter), furnishing and compacting the aggregate base, doweling into the existing concrete, furnishing, placing and finishing concrete, installing the truncated domes, installing the retaining curb (as applicable), fence/wall/header/bricks/decorative rock/stones of varying material replacement in-kind and relocation, replacing and adjusting to grade existing water meter box, valve box, fire hydrant, work around utility poles, placing curing compound, vandalism prevention during concrete curing time, landscape and irrigation restoration, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Note: Retaining curbs constructed as part of Ramp and Sidewalk is included as part of the square footage measurement for this bid item.

Bid Item 15

The contract unit price paid per square foot (SF) for “**Install PCC Sidewalk**” shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in preparing the subgrade, trimming tree roots (2-inches or small in diameter), furnishing and compacting the aggregate base, doweling into the existing concrete, furnishing, placing and finishing concrete, replacing and adjusting to grade existing water meter box, valve box, fire hydrant, work around utility poles, placing curing compound, vandalism prevention during concrete curing time, landscape and irrigation restoration, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Note: Retaining curbs constructed as part of Sidewalk is included as part of the

square footage measurement for this bid item.

Bid Item 16

The contract unit price paid per linear foot (LF) for “**Install Median Curb**” shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved, including but not limited to preparing the subgrade, trimming tree roots (2-inches or smaller in diameter), furnishing and compacting the aggregate base, doweling into the existing concrete, furnishing, placing and finishing concrete, placing curing compound, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 17

The contract unit price paid per square foot (SF) for “**Install Median Island**” shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in preparing the subgrade, trimming tree roots (2-inches or small in diameter), furnishing and compacting the aggregate base, doweling into the existing concrete, furnishing, placing and finishing concrete, and placing curing compound, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 18

The contract price paid per linear foot (LF) for “**Install 15" RCP Storm Drain Pipe**” measured from edge of structure to edge of structure for various pipe materials and various sizes irrespective of the depth of pipes and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing and installing Storm Drainage Piping, complete in place including bends, elbows or other pipe fittings, saw cut, excavating to required elevations, all utility trenching work as specified in [Section 31 23 16 – Utility Trenching](#), removing excavated materials, dewatering, bedding, cradles, backfill and backfill material, pipe installation with warning tape, restoration and disposing of materials outside the Right-of-Way and connections to existing or new storm drainage mains and manholes, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 19

The contract price paid per each (EA) for “**Install Type “A” Storm Drain Inlet**” shall include full compensation for furnishing all labor, tools, equipment, and incidentals and for doing all the work involved installing of a type a storm drain inlet, including excavating, trenching, shoring and bracing, all pipe and fittings,

backfill, surface restoration complete in place, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Structure bedding and backfill are incidental to the bid item most closely related to and no separate compensation allowed therefor. All utility trenching work as specified in Section 31 23 16 – Utility Trenching, concrete foundation slab, concrete structure sections, bedding, backfill, concrete masonry structure construction, transition to cover frame, cover frame and cover to indicated design depth, forming, sealing pipe inlets and outlets and air testing of structures.

Bid Item 20

The contract price paid per each (EA) for “**Convert Existing Inlet with Manhole**” shall include full compensation for furnishing all labor, tools, equipment, and incidentals and for doing all the work involved in converting the existing with a manhole, including excavating, trenching, shoring and bracing, all pipe and fittings, backfill, surface restoration complete in place, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Structure bedding and backfill are incidental to the bid item most closely related to and no separate compensation allowed therefor. All utility trenching work as specified in Section 31 23 16 – Utility Trenching, concrete foundation slab, concrete structure sections, bedding, backfill, concrete masonry structure construction, transition to cover frame, cover frame and cover to indicated design depth, forming, sealing pipe inlets and outlets and air testing of structures.

Bid Item 21

The contract price paid per linear foot (LF) for “**Remove Existing Striping**” shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all work involved in removing of existing striping, including obtaining demolition permits and permit fees, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 22

The contract price paid per each (EA) for “**Remove Existing Pavement Marking**” shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all work involved in removal of existing pavement marking, including obtaining demolition permits and permit fees, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional

compensation will be allowed therefor.

Bid Item 23

The contract price paid per each (EA) for “**Remove Sign, Post, and Foundation**” shall include full compensation for furnishing all labor, tools, equipment, and incidentals and for doing all the work involved, in removal of existing sign, post, and foundation, backfilling the excavated hole with suitable material, compacting, and restoring to adjacent grades, including obtaining demolition permits and permit fees complete in place, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 24

The contract price paid per linear foot (LF) for “**Remove Delineators and Raised Curb**” shall include full compensation for furnishing all labor, tools, equipment, and incidentals and for doing all the work involved, in removal of existing delineators and raised curb, restoring the disturbed area to adjacent grades, including obtaining demolition permits and permit fees complete in place, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor..

Bid Item 25-32

The lineal foot (LF) price paid, measured along the line of the traffic stripes, without deductions for gaps in broken traffic stripes, for “**Thermoplastic Pavement Striping (by Detail Number or Type)**” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in furnishing and installation of the thermoplastic pavement striping, complete in place, including establishing alignment for stripes, and layout work, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 33

The contract unit price paid per square foot (SF) for “**Install Thermoplastic Continental Crosswalk Striping**” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in furnishing and installation of the thermoplastic continental crosswalk striping, complete in place, including establishing alignment for stripes, and layout work as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 34

The contract unit price paid per each (EA) for “**Install Yellow Reflective Pavement Markers**” shall include full compensation for furnishing all labor,

materials, tools, equipment, and incidentals and for doing all the work involved in furnishing and installation of the pavement markers, complete in place, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 35-36

The contract unit price paid per linear foot (LF) for “**Painted (by color) Curb**” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved including furnishing and installation of the paint, complete in place, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 37

The contract unit price paid per square foot (SF) for “**Install Thermoplastic Pavement Marking**” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in furnishing and installation of the thermoplastic pavement markings complete in place, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 38

The contract unit price paid per each (EA) for “**Furnish and Install Post and Foundation**” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in furnishing, installation of the post and foundation, excavating for the foundation, placing and finishing concrete, complete in place, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 39

The contract unit price paid per each (EA) for “**Furnish and Install Sign (Existing or New Post)**” shall include full compensation for furnishing all labor, materials, tools, equipment, transportation, and incidentals and for doing all the work involved in installation of the sign on existing or new post, furnishing reflective sheeting signs, drilling for bolts / anchors, mounting brackets plates, hardware, complete in place, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Bid Item 40

The contract unit price paid per each (EA) for “**Furnish and Install RRFB System**” shall include full compensation for furnishing all labor, tools,

equipment, and transportation necessary to furnish and install rectangular rapid-flashing beacon (RRFB) system, including custom 12 foot tall, 2 inch I.D. galvanized steel poles, APS push buttons, solar panels, reflective sheeting signs, drilling for bolts / anchors, mounting brackets plates, hardware, concrete foundations, and all other appurtenances required to furnish and install the RRFB system, as specified herein, as shown on the Plans, as specified in these Specifications, and as directed by the Engineer, and no additional compensation will be allowed therefor.

3.3 PAYMENT

- A. Payment will be made for actual quantity of work performed at contract unit price, as directed and accepted, in accordance with requirements of the General Conditions.

END OF SECTION 01 22 00

SECTION 01 25 00 – SUBSTITUTION PROCEDURES**PART 1 - GENERAL**

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for handling requests for substitutions made after award of the Contract.
- B. Related Sections:
 - 1. [Notice Inviting Bidders](#)
 - 2. [Instructions to Bidders](#)
 - 3. [Division 00 – General Conditions Article 7.](#)

1.2 DEFINITIONS

- A. Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract are considered to be requests for substitutions.
 - 1. Substitutions will not be considered during the Bid process.
 - 2. The following are not considered to be requests for substitution:
 - a. Revisions to the Contract Documents requested by the Owner or Architect/Engineer.
 - b. Specified options of products and construction methods included in the Contract Documents.
 - 3. The following are considered to be requests for substitution:
 - a. Any manufacturer, product, process, or method identified in the Special Conditions, specifications or on the Drawings as either “or equal” or “equal products of another manufacturer when approved in advance by the Architect/Engineer per this Section 01 25 00 – Substitution Procedures”.

1.3 SUBMITTALS

- A. Request for Substitution (RFS) Submittal:
 - 1. Receipt:
 - a. The Architect/Engineer will consider requests for substitution (RFS) if received within thirty-five (35) calendar days after the Notice to Proceed.
 - b. Requests received after thirty-five (35) calendar days after the Notice to Proceed may be considered or rejected at the discretion of the Project Manager and/or Architect/Engineer.

1. Submit three (3) copies of each request for substitution for consideration. Submit requests in the form and according to the procedures required in [Division 00 – General Conditions](#).
2. Identify the product or the fabrication or installation method to be replaced in each request. Include related Special Conditions, Specification Section and Drawing numbers.
3. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
 - a. Coordination information, including a list of change or modifications needed to other parts of the Work and to construction performed by the Owner and separate contractors that will be necessary to accommodate the proposed substitution.
 - b. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements, such as performance, weight, size, durability, operations, maintenance, and visual effect.
 - c. Product Data, including Drawings and descriptions of products and fabrication and installation procedures.
 - d. Samples, where applicable or requested.
 - e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without the approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
 - f. Cost information, including a proposal of net change, if any, in the Contract Sum.
 - g. The Contractor's certification that the proposed substitution conforms to the requirements in the Contract Documents, in every respect and is appropriate for the applications indicated.
 - h. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.
4. Architect/Engineer Action: If necessary, the Architect/Engineer will request additional information or documentation for evaluation within fourteen (14) calendar days of receipt of a request for substitution. The Project Manager will route to the Contractor, the Architect/Engineer's acceptance or rejection of the substitution within fourteen (14) days of the receipt of the request, or receipt of addition information or documentation.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Conditions: The Architect/Engineer will receive and consider the Contractor's request for substitution when one or more of the following conditions are satisfied, as determined by the Architect/Engineer. If the following conditions are not satisfied, the Architect/Engineer will return the requests without action except to record non-compliance with these requirements:
 1. Extensive revisions to the Contract Documents are not required.

2. Proposed changes are in keeping with the general intent of the Contract Documents.
 3. The request is timely, fully documented, and properly submitted.
 4. The request is directly related to an “or-equal” clause or similar language in the Contract Documents.
 5. The requested substitution offers the Owner a substantial advantage, in cost, time, energy conservation, maintainability, or other considerations, after deducting additional responsibilities the Owner must assume. The Owner’s additional responsibilities may include compensation to the Architect/Engineer for redesign and evaluation services, compensation to the Project Manager for additional management and coordination, increased cost of other construction by the Owner, and similar considerations.
 6. The specified product or method of construction cannot be provided in a manner that is compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.
 7. The specified product or method of construction cannot be coordinated with other materials and where the Contractor certifies that the proposed substitution can be coordinated.
 8. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
- B. The Contractor’s submittal and the Architect/Engineer acceptance of Shop Drawings, Product Data, or Samples for construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

PART 3 - EXECUTION

NOT USED

END OF SECTION 01 25 00

SECTION 01 26 00 – CONTRACT MODIFICATION PROCEDURES**PART 1 - GENERAL**

1.1 SUMMARY

- A. This section describes general procedural requirements for alterations, modifications and extras.
- B. Related Sections:
 - 1. [Division 00 General Conditions, Articles 5, 6, and 8](#)
 - 2. [Section 01 29 00 – Payment Procedures](#)

1.2 GENERAL

- A. Any change in scope of work or deviation from Drawings, Special Conditions, or Specifications shall be accomplished only when authorized in writing by Project Manager.
- B. Changes in scope of Work or deviation from Drawings, Special Conditions, or Specifications may be initiated only by Contractor or Project Manager.
 - 1. Contractor may initiate changes by submitting Requests for Interpretation (RFI), Requests for Substitution (RFS), Notice of Concealed or Unknown Conditions, or Notice of Hazardous Waste Conditions.
 - a. RFIs shall be submitted to seek clarification of Contract Documents in accordance with [Section 01 26 13 – Requests for Interpretation](#).
 - b. RFSs shall be submitted in accordance with [Section 01 25 00 – Substitution Procedures](#) to request substitution of materials or methods of execution.
 - c. Notices of Concealed or Unknown Conditions shall be submitted in accordance with [Division 00 - General Conditions](#).
 - d. Notices of Hazardous Waste Conditions shall be submitted in accordance with [Division 00 - General Conditions](#).
 - 2. Contractor shall be responsible for its costs to implement and administer RFIs and RFSs throughout the Contract duration. Regardless of the number of RFIs submitted, Contractor will not be entitled to additional compensation. Contractor shall be responsible for both City's and Architect/Engineer's administrative costs for answering its RFIs where the answer could reasonably be found by reviewing the Contract Documents, as determined by City; such costs will be deducted from progress payments.
 - 3. The City may initiate changes by issuing a Supplemental Instruction.
 - 4. Project Manager may initiate changes in the Work or Contract Time by issuing Requests for Proposal (RFP) to Contractor. Such RFPs will detail all proposed changes in the Work and request a quotation of changes in Contract Sum and Contract Time from Contractor.

1.3 PROCEDURE

- A. Contractor shall submit RFI to Project Manager in accordance with [Section 01 26 13 – Requests for Interpretation](#). Contractor shall reference each RFI to an activity of Progress Schedule and shall note time criticality of the RFI.
1. If Contractor is satisfied with the Clarification and does not request change in Contract Sum or Contract Time, then the Clarification shall be considered executed without a change.
 2. If Contractor believes that the Clarification results in change in Contract Sum or Contract Time, Contractor shall notify Project Manager who may then deny request for change or issue RFP.
- B. Contractor shall submit RFS to Project Manager who may then approve or deny request. If denied, Project Manager shall set forth in writing reasons for the denial. Contractor may revise and resubmit submittal with a rebuttal based on Section 3400 Public Contract Code CA. The RFS should set forth:
1. Reason for substitution
 2. Any deviations from Special Conditions or specifications
 3. Cost increase or decrease
 4. Any necessary revisions to drawings/related work
 5. Schedule impacts.
- C. Contractor shall submit Notices of Concealed or Unknown Conditions to resolve unanticipated conditions incurred in the execution of the Work. Procedures in [Division 00 - General Conditions](#) shall be followed. If Project Manager determines that a change in Contract Sum or Contract Time is justified, Project Manager shall issue RFP.
- D. Contractor shall submit Notices of Hazardous Waste Conditions to resolve problems regarding hazardous materials encountered in the execution of the Work. Procedures in [Division 00 - General Conditions](#) shall be followed. If Project Manager determines that a change in Contract Sum or Contract Time is justified, Project Manager shall issue RFP.
- E. Project Manager may issue Supplemental Instruction from the Architect/Engineer to Contractor. Contractor shall not proceed with Supplemental Instruction until Project Manager approves it in writing.
1. If Contractor is satisfied with Supplemental Instruction and does not request change in Contract Sum or Contract Time, then Supplemental Instruction shall be executed without a Change Order.
 2. If Contractor believes that Supplemental Instruction results in change in Contract Sum or Contract Time, Contractor shall notify Project Manager. Project Manager may then deny request for change, cancel Supplemental Instruction or issue RFP.
- F. If Project Manager issues to Contractor an RFP, then Contractor shall respond to the RFP within fifteen (15) working days by furnishing a complete breakdown of

costs of credits, deducts, extra costs or cost savings, resulting from the change in the Work. Contractor shall itemize materials, labor, taxes, overhead and profit. Subcontract work shall be so indicated.

- G. Upon approval of RFP, Project Manager will issue a Change Order directing Contractor to proceed with extra work. If the parties do not agree on the price for an RFP, the Project Manager may decide the issue per [Division 00 - General Conditions](#).
- H. Payment shall be made as follows:
 - 1. Change Orders which increase or decrease the Contract Sum or Contract Time shall be included by Contract Modification Form, signed by Project Manager, accepted by Contractor.
 - 2. Payment shall be made for Change Order work along with other work in progress payment following completion of Change Order work. Partial completion of Change Order work shall be paid for that part completed during the period covered by the monthly payment request.

1.4 COST DETERMINATION

- A. Total cost of extra work or of work omitted shall be the sum of labor cost (hourly rate plus employer paid benefits, taxes, insurance, etc.), material costs, equipment rental costs and specialist costs as defined herein plus overhead and profit as allowed herein. This limit applies in all cases of claims for extra work, whether calculating Change Orders, RFPs, or calculating claims of all types, and applies even in the event of fault, negligence, strict liability, or tort claims of all kinds, including strict liability or negligence. No other costs arising out of or connected with the performance of extra work, of any nature, may be recovered by Contractor. No special, incidental or consequential damages may be claimed or recovered against City, their officers, agents, employees, and consultants (including, but not limited to Architect/Engineer or Construction Manager), whether arising from breach of contract, negligence or strict liability, unless specifically authorized in the Contract Documents.
- B. Overhead and Profit:
 - 1. "Overhead and Profit" may also be referred to as "Markup".
 - 2. Overhead shall be defined in Paragraph 1.8 below.
 - 3. Overhead and profit on labor for extra work shall be thirty-five percent (35%).
 - 4. Overhead and profit on materials shall be fifteen percent (15%).
 - 5. Overhead and profit on equipment rental for extra work shall be fifteen percent (15%).
 - 6. When extra work is performed by a first tier subcontractor, Contractor shall receive a ten percent (10%) markup on subcontractors' total costs of extra work.
- C. Taxes:
 - 1. Contra Costa County Sales Tax shall be included.
 - 2. Federal and Excise Tax shall not be included.
- D. Owner Operated Equipment:

1. When owner-operated equipment is used to perform extra work, Contractor will be paid for equipment and operator as follows:
 - a. Payment for equipment will be made in accordance with Paragraph 1.5.C below.
 - b. Payment for cost of labor will be made at no more than rates of such labor established by collective bargaining agreements for type of worker and location of work, whether or not owner-operator is actually covered by such an agreement.

1.5 COST BREAKDOWN

- A. Labor: Contractor will be paid cost of labor for workers (including forepersons when authorized by Project Manager) used in actual and direct performance of extra work. Labor rate, whether employer is Contractor, subcontractor or other forces, will be sum of following:
 1. Actual Wages: Actual wages paid shall include any employer payments to or on behalf of workers for health and welfare, pension, vacation and similar purposes.
 2. Labor Surcharge: Payments imposed by City, County, State and Federal laws and ordinances, and other payments made to, or on behalf of, workers, other than actual wages as defined in subparagraph 1 above, such as taxes and insurances. Labor surcharge shall be as set forth in California Department of Transportation official labor surcharges schedule which is in effect on date upon which extra work is accomplished and which schedule is incorporated herein by reference, as though fully set forth herein.
- B. Material: Only materials furnished by Contractor and necessarily used in performance of extra work will be paid for. Cost of such materials will be cost, including sales tax, to purchaser (Contractor, subcontractor or other forces) from supplier thereof, except as the following are applicable:
 1. If cash or trade discount by actual supplier is offered or available to purchaser, it shall be credited to City notwithstanding the fact that such discount may not have been taken.
 2. For materials salvaged upon completion of extra work, salvage value of materials shall be deducted from cost, less discount, of materials.
 3. If cost of a material is, in opinion of Project Manager, excessive, then cost of material shall be deemed to be lowest current wholesale price at which material is available in quantities concerned delivered to Site, less any discounts as provided in subparagraph 1 above.
- C. Equipment Rental:
 1. For Contractor- or subcontractor-owned equipment, payment will be made at rental rates listed for equipment in California Department of Transportation official equipment rental rate schedule which is in effect on date upon which extra work is accomplished and which schedule is incorporated herein by reference as though fully set forth herein. For rented equipment, payment will be made based on actual rental invoices. Equipment used on extra work shall be of proper size and type. If, however, equipment of unwarranted size or type and cost is used, cost of use of equipment shall be calculated at rental rate for equipment of proper size and type. Rental rates paid shall be deemed

to cover cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. Unless otherwise specified, manufacturer's ratings, and manufacturer-approved modifications, shall be used to classify equipment for determination of applicable rental rates. Individual pieces of equipment or tools not listed in said publication and having a replacement value of five hundred dollars (\$500) or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefor as payment is included in payment for labor. Rental time will not be allowed while equipment is inoperative due to breakdowns.

2. For equipment on Site, rental time to be paid for equipment shall be time equipment is in operation on extra work being performed or on standby as approved by Project Manager. The following shall be used in computing rental time of equipment:
 - a. When hourly rates are listed, less than thirty (30) minutes of operation shall be considered to be one-half (1/2) hour of operation.
 - b. When daily rates are listed, less than four (4) hours of operation shall be considered to be one-half (1/2) day of operation.
3. For equipment which must be brought to Site to be used exclusively on extra work, cost of transporting equipment to Site and its return to its original location shall be determined as follows:
 - a. City will pay for costs of loading and unloading equipment.
 - b. Cost of transporting equipment in low bed trailers shall not exceed hourly rates charged by established haulers.
 - c. Cost of transporting equipment shall not exceed applicable minimum established rates of California Public Utilities Commission.
 - d. Payment for transporting, and loading and unloading equipment as above provided will not be made if equipment is used on Work in any other way than upon extra work.
4. Rental period shall begin at time equipment is unloaded at Site of extra work and terminate at end of day on which City's Project Manager directs Contractor to discontinue use of equipment. Excluding Saturdays, Sundays, and legal holidays, unless equipment is used to perform extra work on such days, rental time to be paid shall be four (4) hours for zero (0) hours of operation, six (6) hours for four (4) hours of operation and eight (8) hours for eight (8) hours of operation, time being prorated between these parameters. Hours to be paid for equipment which is operated less than eight (8) hours due to breakdowns, shall not exceed eight (8) less number of hours equipment is inoperative due to breakdowns.

D. Work Performed by Special Forces or Other Special Services:

1. When the City's Project Manager and Contractor, by agreement, determine that special service or item of extra work cannot be performed by forces of Contractor or those of any subcontractors, service or extra work item may be performed by specialist. Invoices for service or item of extra work on basis of current market price thereof may be accepted without complete itemization of labor, material, and equipment rental costs when it is impracticable and not in accordance with established practice of special service industry to

provide complete itemization. In those instances, wherein Contractor is required to perform extra work necessitating a fabrication or machining process in a fabrication or machine shop facility away from Site, charges for that portion of extra work performed in such facility may, by agreement, be accepted as a specialist billing. The City's Project Manager must be notified in advance of all off-site work. To specialist invoice price, less credit to City for any cash or trade discount offered or available, whether or not such discount may have been taken, will be added 15 percent (15%) in lieu of overhead and profit provided in Paragraph 1.4.B.

1.6 FORCE-ACCOUNT

- A. City may, at any time, require Contractor to perform Work on a Force Account (time and materials, cost not to exceed) basis. When Contractor performs Force Account Work, the labor, materials and equipment used in performing such Force Account Work shall be subject to City's approval.
- B. Whenever any Force-Account work is in progress, definite price for which has not been agreed on in advance, Contractor shall report to the City's Project Manager each day in writing in detail amount and cost of labor and material used, and any other expense incurred in Force-Account work on preceding work day as required herein. No claim for compensation for Force-Account work will be allowed unless report shall have been made. City may authorize Force Account Work with specific limits on price, which Contractor shall perform up to such limit.
- C. Force Account work shall be paid as extra work under this [Section 01 26 00 – Contract Modification Procedures](#). Above described methods of determining payment for work and materials shall not apply to performance of work or furnishings of material which, in judgment of the City's Project Manager, may properly be classified under items for which prices are established in Contract.

1.7 CITY FURNISHED MATERIALS

- A. City reserves right to furnish materials as it deems advisable, and Contractor shall have no claims for costs and overhead and profit on such materials.

1.8 OVERHEAD DEFINED

- A. The following constitutes charges that are deemed included in overhead for all contract modifications, including Force-Account work for the entire Contract Time:
 - 1. Drawings: Field drawings, shop drawings, etc. including submissions of drawings
 - 2. Routine field inspection of work proposed
 - 3. General superintendence
 - 4. General administration and preparation of change orders
 - 5. Computer services
 - 6. Reproduction services
 - 7. Salaries of project engineer, project manager, superintendent, timekeeper, storekeeper and secretaries
 - 8. Janitorial services

9. Temporary on-site facilities
10. Offices
11. Telephones
12. Plumbing
13. Electrical: Power, lighting
14. Platforms
15. Fencing, etc.
16. Home office expenses.
17. Insurance and Bond premiums.
18. Procurement and use of vehicles and fuel used coincidentally in base bid work.
19. Surveying
20. Estimating
21. Protection of work
22. Final cleanup
23. Other incidental work
24. Labor liability insurance

1.9 RECORDS AND CERTIFICATION

- A. Force-Account (cost reimbursement) charges shall be recorded daily upon Cost Breakdown for Contract Modification Form obtained from Inspector. Contractor or authorized representative shall complete and sign form. Inspector shall sign form for approval. Contract Modification Form shall provide names and classifications of workers and hours worked by each, itemize materials used, and also list size type and identification number of equipment, and hours operated, and shall indicate work done by specialists.
- B. No payment for Force-Account work shall be made until Contractor submits original invoices substantiating materials and specialist charges.
- C. City shall have the right to audit all records in possession of Contractor relating to activities covered by Contractor's claims for modification of Contract, including Force-Account work, as set forth in [Division 00 - General Conditions](#).
- D. Further, City shall have right to audit, inspect, or copy all records maintained in connection with this Contract, including financial records, in possession of Contractor relating to any transaction or activity occurring or arising out of, or by virtue of, Contract. If Contractor is a joint venture, right of City shall apply collaterally to same extent to records of joint venture sponsor, and of each individual joint venture member.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION 01 26 00

DAILY EXTRA WORK REPORT

COST BREAKDOWN FORM FOR CONTRACT MODIFICATION
SHEET 1 OF 3

One separate form shall be used by Contractor, each first tier subcontractor and each lower tier subcontractor. One form for each shall be used for each change order. One form for each, for each day shall be used for Force-Account work.

CHANGE ORDER NUMBER: _____ DATE: _____

CHANGE ORDER DESCRIPTION: _____

CONTRACTOR: _____

LABOR				
NAME	CLASSIFICATION	HOURS	RATE	TOTAL
TOTAL LABOR COSTS (Enter here and on Line 1 of Sheet 3)				

COST BREAKDOWN FORM FOR CONTRACT MODIFICATION
SHEET 2 OF 3

MATERIALS	
DESCRIPTION	COST
TOTAL MATERIAL COSTS (Enter here and on Line 4 of Sheet 3)	

EQUIPMENT RENTAL				
SIZE AND TYPE	I.D. #	HOURS	RATE	TOTAL
TOTAL EQUIPMENT RENTAL COSTS (Enter here and on Line 8)				

SPECIALIST	
DESCRIPTION	COST
TOTAL SPECIALIST COSTS (Enter here and on Line 11)	

COST BREAKDOWN FORM FOR CONTRACT MODIFICATION
SHEET 3 OF 3

TOTAL COSTS		
1. TOTAL LABOR COSTS		
2. 10 % of Line 1		
3. ADD Lines 1 and 2		
4. TOTAL MATERIAL COSTS		
5. 10 % of Line 4		
6. 8.25 % of line 4		
7. ADD Lines 4, 5 and 6		
8. TOTAL EQUIPMENT RENTAL COSTS		
9. 10 % of Line 8		
10. ADD Lines 8 and 9		
11. TOTAL SPECIALIST COSTS		
12. 10 % of Line 11		
13. ADD Lines 11 and 12		
14. TOTAL COST OF EXTRA WORK (ADD Lines 3, 7, 10 and 13)		

CONTRACTOR OR AUTHORIZED REPRESENTATIVE: _____

APPROVED BY INSPECTOR: _____

SECTION 01 26 13 – REQUESTS FOR INTERPRETATION**PART 1 - GENERAL**

1.1 SUMMARY

- A. This section describes procedural requirements for requests for interpretation, information, and/or clarification.
- B. Related Sections:
 - 1. [Division 00 – General Conditions](#)
 - 2. [Section 01 26 00 – Contract Modification Procedures](#)

1.2 GENERAL

- A. Description: Submit RFI to the Project Manager promptly upon identification of need, and in reasonable time so as not to affect the progress of the Work.
- B. Submission Procedures:
 - 1. Pre-submission Review: Before submitting request to the Project Manager, conduct a review to determine that the information requested, including items submitted by subcontractors or suppliers, is not shown in the Contract Documents.
 - 2. Category of Request: Submit requests for interpretation when one or more of the following conditions occur.
 - a. Need for Clarification: When information shown or indicated in the Contract Documents is unclear in its intent.
 - b. Unforeseen Condition: Discovery of unforeseen condition or circumstance that is not shown or indicated in the Contract Documents.
 - c. Conflict Within Documents: Discovery of an apparent inconsistency, conflict, or discrepancy between different portions of the Contract Documents, where the intent cannot be reasonably inferred from information shown or indicated.
 - d. Omission: Discovery of what appears to be an omission in the Contract Documents, where the intent cannot be reasonably inferred from information shown or indicated.
 - e. Coordination Problem: Discovery of unforeseen condition in coordinating placement of work that is specifically related to the Contract Documents.
 - 3. Unacceptable Requests:
 - a. General: Do not submit RFIs for confirmation of any action already taken by the Contractor. Requests will not be accepted that imply confirmation of any unauthorized change to the Work.
 - b. Untimely Submission: An RFI that is submitted in a belated manner without proper coordination and scheduling of the Work of related subcontractors will not be reviewed and will be returned to the

- Contractor.
- c. Submittal: An RFI that is included as part of a submittal will not be processed; see [Section 01 33 00 – Submittal Procedures](#).
 - d. Substitution: An RFI that is a request for substitution will not be processed; see [Section 01 25 00 – Substitution Procedures](#).
 - e. Exclusionary Submission: A request that implies that specific portions of the work are assumed to be excluded or considering a separate portion of the Contract Documents in part rather than as a whole will not be processed.
- C. Log: Prepare and maintain the official log of RFIs. Review status of log at each job progress meeting.

PART 2 - PRODUCTS

A. SUBMISSION REQUIREMENTS:

1. Request for Interpretation (RFI) Form:
 - a. General: Provide a completed and legible PDF of an RFI form that includes the following required information.
 - b. RFI Number: Identify RFIs sequentially starting from number one (1); number re-submissions with same number as original and add letter designation A, B, C, etc., in order submitted, until resolution is achieved.
 - c. PDF Name: Include RFI number and reference to name of project in file name; if space allows include brief description of subject in RFI file name.
 - d. Contractor: Provide company name and mailing address with signature of contact person responsible for work on the subject project, certifying to review of RFI.
 - e. Subcontractor and/or Supplier Provide company name, mailing address, telephone number and name and email of contact person responsible for work on the subject project.
 - f. RFI Description:
 - 1) General: Describe subject of RFI completely.
 - 2) Drawing References: Identify specific drawing number and/or detail number or note under consideration.
 - 3) Specifications References: Identify specification section number and paragraph number under consideration.
 - 4) Attachments: Identify as required, to support description.
 - 5) Contractor's Proposed Resolution:
 - a) General: Describe suggested resolution; support with attachments as required.
 - b) Cost Impact: Indicate impact on costs; explain Contractor's original basis for bid and, based on the current request, reason that additional costs should be considered.
 - c) Time Impact: Indicate effect on schedule; explain Contractor's original basis for bid and, based on the current request, why a time extension should be considered.

PART 3 - EXECUTION

A. PROJECT MANAGER'S RESPONSE:

1. General: Project Manager will respond on the RFI Form and include attachments, as referenced. Verbal responses to such requests are to be considered informational; official written response will only be given on annotated PDF of original RFI Form.
2. Project Manager's Review:
 - a. General: Allow ten (10) working days after receipt. If more than ten (10) requests are received within one (1) calendar week, the Project Manager will specifically schedule and extend response time as required to accomplish the reviews.
 - b. Prioritization: If more than five (5) requests have been received by the Project Manager, the Contractor shall identify the order of requests most critical to the schedule of the Project.

B. DISTRIBUTION:

1. General: Submit PDF of original, signed copy. PDF with the official response will be returned to the Contractor.
2. Consultants: The Project Manager will distribute copies of requests for information to project consultants, as required for their participation. Direct communication and response between project consultants and Contractor will be considered informational only.
3. Response: The Contractor will make and distribute copies of the official response to subcontractors and suppliers, as required.

END OF SECTION 01 26 13

SECTION 01 29 00 – PAYMENT PROCEDURES**PART 1 - GENERAL**

1.1 SUMMARY

- A. This section describes the procedures for preparation and submittal of Progress Payment Requests.
- B. Related Sections:
 - 1. [Division 00 – General Conditions](#)
 - 2. [Section 01 32 16 - Construction Progress Schedule](#)

1.2 REFERENCES

- A. California Public Contract Code

1.3 SCOPE OF WORK

- A. Payment for the various items of the Schedule of Bid Prices, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured products, and for all labor, operations, overhead and profit, applicable taxes, and incidentals appurtenant to the items of Work being described, as necessary to complete the various items of work as specified and as shown on the Drawings. No separate payment will be made for any item that is not specifically set forth in the Schedule of Bid Prices, and all costs therefor shall be included in the prices named in the Schedule of Bid Prices for the various appurtenant items of Work.
- B. Contract Prices shall be deemed to include all bonds and insurance, all appurtenances necessary to complete the required Work, including all costs for compliance with the regulations of the public agencies having jurisdiction, including Health and Safety Requirements of the California Division of Industrial Safety and the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA), and including all costs for loss or damage arising from the Work, or from action of the elements, for any unforeseen difficulties which may be encountered, and for all risks of every description connected with the prosecution of the Work until Project Completion, also for all expenses incurred in consequence of the suspension or discontinuance of the Work as provided in the Contract. Unless the Contract Documents expressly provide otherwise, the Contract Sum shall be deemed to include:
 - 1. Any and all costs arising from any unforeseen difficulties which may be encountered during, and all risks of any description connected with, prosecution of Work until acceptance by City;
 - 2. All expenses incurred due to suspension, or discontinuance of Work as provided in Contract;

3. Escalation to allow for cost increases between time of Contract Award and completion of Work.

- C. Whenever it is specified herein that Contractor is to do work or furnish materials of any class for which no price is fixed in the Contract, it shall be understood that Contractor is to do such work or furnish such materials without extra charge or allowance or direct payment of any sort, and that cost of doing work or furnishing materials is to be included in price bid, unless it is expressly specified herein, in particular cases, that work or material is to be paid for as extra work.
- D. Neither the payment of any estimate nor of any retained percentages shall relieve Contractor of its obligation to make good all defective work or material.

1.4 DETERMINATION OF QUANTITIES

- A. Quantity of work to be paid for under any item for which a unit price is fixed in Contract shall be number, as determined by Project Manager, of units of work satisfactorily completed in accordance with Drawings, Technical Specifications, and Specifications and as directed pursuant to Drawings, Technical Specifications, and Specifications. Unless otherwise provided, determination of number of units of work so completed will be based, so far as practicable, on actual measurement or count within prescribed or ordered limits, and no payment will be made for work done outside of limits. Measurements and computations will be made by methods as City's Project Manager may consider appropriate for class of work measured.

1.5 BASIS OF PAYMENT

- A. Unit Pay Quantities: When estimated quantity for specific portions of Work is listed in Bid Form, quantity of work to be paid for shall be actual number of units satisfactorily completed in accordance with Drawings, Technical Specifications, and Specifications.
- B. Lump Sum: When estimated quantity for specific portion of Work is not indicated and unit is designated as Lump Sum, payment will be on a Lump Sum basis for Work satisfactorily completed in accordance with Drawings, Technical Specifications, and Specifications.
- C. City does not expressly, or by implication, agree, warrant, or represent in any manner, that actual amount of Work will correspond with amount shown or estimated and reserves right to increase or decrease amount of any class or portion of Work, to leave out entire Bid Item or Items, or to add work not included in Bid, when in its judgment such change is in best interest of City. No change in Work shall be considered waiver of any other condition of Contract. No claim shall be made for anticipated profit, for loss of profit, for damages, or for extra payment whatever, except as otherwise expressly provided for in Contract Documents because of any differences between amount of work actually done and estimated amount as set forth herein, or for elimination of extra Bid Items.
- D. Monthly payment requests shall be based upon information developed at monthly Application for Payment meetings and shall be prepared by Contractor. The approved Schedule of Values will be the basis for Contractor's payment requests.

1. No partial progress payment shall be made to Contractor until all cost information requested by the City is submitted and reviewed.
2. The following information shall also be submitted with and as part of the Contractor's progress payment application; all information, noted below, will cover the same period of the progress payment application.
 - a. Progress Schedule: Submittal of one (1) copy of the progress schedule updated to include the progress achieved as of the date of the Application for Payment in accordance with this Section.
 - 1) Contractor shall, at the time any payment request is submitted, certify in writing the accuracy of the payment request and that Contractor has fulfilled all scheduling requirements of [Division 00 – General Conditions](#) and [Section 01 32 16 - Construction Progress Schedule](#), including updates and revisions. The certification shall be executed by a responsible officer of the Contractor.
 - b. Project Record Drawings: Submit project record drawings with each progress payment application for the City's Project Manager's review. The drawings shall be returned to the Contractor within fourteen (14) calendar days of submittal.
 - c. Certified Payroll: Certified payroll for all Contractor and subcontractor staffing pursuant to Section 1776 of the California Labor Code and including all subcontractors, suppliers, or creditors for all labor and materials incorporated into the work.
 - d. Lien Releases: Conditional or Unconditional lien release for the requested payment. Unconditional lien release for the previous payment.
3. No progress payment will be processed prior to Project Manager receiving all requested information.

E. The City will not be liable for costs arising from the delay in making progress payments.

1.6 PROGRESS PAYMENT PROCEDURES

A. If requested by Contractor, progress payments will be made monthly.

B. Schedule of Values:

1. Within ten (10) calendar days from issuance of Notice of Award and prior to the Contractor's application for the first progress payment, the Contractor shall submit a detailed breakdown of its bid by scheduled Work items and/or activities. This breakdown shall be referred to as the Schedule of Values.
2. If City's Project Manager requires substantiating data, Contractor shall submit information requested by Project Manager, with cover letter identifying Project, payment request number and date, and detailed list of enclosures. Contractor shall submit one copy of substantiating data and cover letter for each Payment request submitted.

C. Payment Requests:

1. On or about the 25th of each month, the Contractor may submit to the City's Project Manager one (1) copy of an itemized Application of Payment on a standard form acceptable to the City's Project Manager covering the Work completed as of the date of the Application for payment. The following information and/or documentation will be provided as part of the Application for Payment:
 - a. Payment requests may include, but not necessarily limited to the following:
 - 1) Materials, equipment, and labor incorporated into the Work, less any previous payments for the same;
 - 2) A maximum of ninety percent (90%) of the cost of major equipment, if purchased and delivered to the site or stored offsite, as under control of the City, but not installed by the Contractor.
 - 3) Contractor's application for payment shall be accompanied by a bill of sale, invoice, or other documentation warranting that the City has received the materials and equipment free and clear of all liens and evidence that the materials and equipment area covered by appropriate property insurance and other arrangements to protect the City's interest therein.
 - b. Such requests for progress payments shall be based upon Schedule of Values prices of all labor and materials incorporated in the Work during the preceding one-month period, less the aggregate of previous payments.
 - c. Each payment request shall list each Change Order executed prior to the date of submission, including the Change Order Number, a description of the work activities, consistent with the descriptions of original work activities.
 - 1) Contractor shall submit a monthly Change Order status log to the City's Project Manager as part of that Progress Payment Request.
2. Monthly progress payments shall be made, based on total value of activities completed or partially completed, as determined by City with participation of Contractor, and based upon approved activity costs. Accumulated retainage will be shown as separate item in payment summary. If Contractor fails or refuses to participate in construction progress evaluation with City, Contractor shall not receive current payment until Contractor has participated fully in providing construction progress information and schedule update information for City.

D. Progress Payments:

1. Upon receiving Contractor's payment request, Project Manager will review the payment request and make necessary adjustments to percent of completion of each activity. One copy will be returned to Contractor with description of adjustments made. All parties will update percentage of completion values in the same manner, i.e., express value of an accumulated percentage of completion to date.
2. The payment request may be reviewed by Project Manager for the purpose of determining that the payment request is a proper payment request, and shall be rejected, revised or approved by Project Manager pursuant to the cost breakdown prepared in accordance with this Section.

3. If it is determined that the payment request is not a proper payment request suitable for payment, Project Manager shall return it to the Contractor as soon as practicable, but no later than seven (7) working days after receipt, together with a document setting forth in writing the reasons why the payment request is not proper. If Project Manager determines that portions of the payment request are not proper or not due under the Contract Documents, then Project Manager may approve the other portions of the payment request and, in the case of disputed items or defective work not remedied, may withhold up to 150% of the disputed amount from the progress payment.
4. Pursuant to Public Contract Code, Section 20104.50, if City fails to make any progress payment within thirty (30) days after receipt of an undisputed and properly submitted payment request from a contractor, City shall pay interest to the Contractor equivalent to the legal rates set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure. The thirty (30) day period shall be reduced by the number of days by which City exceeds the seven (7) day return requirement set forth herein.
5. As soon as practicable after approval of each request for progress payment, City will pay to Contractor in manner provided by law, the amounts provided for below:
 - a. City shall pay an amount equal to ninety percent (90%) of Project Manager's estimate, which amount shall remain in effect until such time, if any, that the retention is reduced by Project Manager pursuant to the other provisions of this paragraph.
 - b. At any time after fifty percent (50%) in value of the Work as set forth in the Schedule of Values has been completed and the retained funds are equal to five percent (5%) of the Contract Sum (including Change Orders, if applicable), and if the progress of the Work under the Progress Schedule is satisfactory, Project Manager may, at its sole discretion, but shall not be obligated to, authorize any remaining progress payment to be made in the amount of ninety-five percent (95%) of the amount approved for payment.
 - c. When Project Manager determines that at least ninety-five percent (95%) in value of the Work as set forth in the Schedule of Values is completed, Project Manager may, at its sole discretion, but shall not be obligated to, reduce the amount of the retained funds to one hundred twenty-five percent (125%) of the value of the Work yet to be completed, as determined by Project Manager.
 - d. After all Work is completed in accordance with Contract, the remaining retention amount shall be paid to the Contractor in accordance with Paragraph 1.9, below.
 - e. If a lesser payment amount is provided in the Contract Documents, such lesser amount shall apply instead of the amounts set forth above in this paragraph.
 - f. Progress payments may at any time be withheld if, in judgment of Project Manager, Work is not proceeding in accordance with Contract, or Contractor is not complying with requirements of Contract, or to comply with stop notices or to offset liquidated damages accruing or expected.
6. Retention will not be reduced if Contractor, in the opinion of the Project Manager, is behind schedule. If retention is reduced at any point during

- Contract and Contractor subsequently falls behind schedule, retention may be raised back to original percentage.
7. Before any progress payment or final payment is made, the Contractor may be required to submit satisfactory evidence that Contractor is not delinquent in payments to employees, subcontractors, suppliers, or creditors for labor and materials incorporated into Work.
 8. City reserves and shall have the right to withhold payment for any equipment and/or specifically fabricated materials that, in the sole judgment of Project Manager, is not adequately and properly protected against weather and/or damage, prior to or following incorporation into the Work.
 9. Approval of progress payment and payment by City, or receipt thereof by Contractor, shall not be understood as constituting in any sense acceptance of Work or of any portion thereof, and shall in no way lessen liability of Contractor to replace unsatisfactory work or material, though unsatisfactory character of work or material may have been apparent or detected at time payment was made.
 10. When City shall charge sum of money against Contractor under any provision of Contract, amount of charge shall be deducted and retained by City from amount of next succeeding progress payment or from any other monies due or that may become due Contractor under Contract. If, on completion or termination of Contract, such monies due Contractor are found insufficient to cover City's charges against Contractor, City shall have right to recover balance from Contractor or Sureties.

1.7 SUBSTITUTION OF SECURITIES IN LIEU OF RETENTION

- A. Pursuant to provisions of Public Contract Code, Section 22300, substitution of securities for any monies withheld under Contract to insure performance is permitted under the following conditions:
1. At request and expense of Contractor, securities listed in Section 16430 of the Government Code, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by Contractor and City which are equivalent to the amount withheld under retention provisions of Contract shall be deposited with Controller or with a state or federally chartered bank in California, as the escrow agent, who shall then pay such monies to Contractor. Upon satisfactory completion of Contract, securities shall be returned to Contractor.
 2. Alternatively, Contractor may request and City shall make payment of retentions earned directly to the escrow agent at the expense of the Contractor. At the expense of the Contractor, the Contractor may direct the investment of the payments into securities and the Contractor shall receive the interest earned on the investments upon the same terms provided for in this section for securities deposited by the Contractor. Upon satisfactory completion of the Contract, the Contractor shall receive from escrow agent all securities, interest, and payments received by the escrow agent from City, pursuant to the terms of this section. The Contractor shall pay to each subcontractor, not later than twenty (20) days after receipt of the payment, the respective amount of interest earned, net of costs attributed to retention

withheld from each subcontractor, on the amount of retention withheld to insure the performance of the Contractor.

3. Contractor shall be beneficial owner of securities substituted for monies withheld and shall receive any interest thereon.
4. Contractor shall enter into escrow agreement with Controller according to Document 00 53 00 - Escrow Agreement for Security Deposits in Lieu of Retention, as authorized under Public Contract Code, Section 22300, specifying amount of securities to be deposited, terms and conditions of conversion to cash in case of default of Contractor, and termination of escrow upon completion of Contract.

1.8 APPLICATION FOR PAYMENT OF SUBSTANTIAL COMPLETION

- A. Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.

1. This application shall reflect Certificates of Partial Substantial Completion issued previously for City occupancy of designated portions of the Work.
2. Administrative actions and submittals that shall precede or coincide with this application include:
 - a. Occupancy permits and similar approvals.
 - b. Warranties, guarantees, and maintenance agreements.
 - c. Test/adjust/balance records.
 - d. Operations and Maintenance instructions.
 - e. Meter readings.
 - f. Startup performance reports.
 - g. Changeover information related to City's occupancy, use, operation, and maintenance.
 - h. Final cleaning.
 - i. Application for reduction of retainage and consent of surety.
 - j. Final progress photographs.
 - k. List of incomplete Work, recognized as exceptions to Architect/Engineer's Certificate of Substantial Completion.

1.9 FINAL PAYMENT

- A. As soon as practicable after all required Work is completed in accordance with Contract, including Contractor maintenance after Final Acceptance, City will pay to Contractor, in manner provided by law, unpaid balance of contract price of Work, or whole contract price of Work if no progress payment has been made, determined in accordance with terms of Contract, less sums as may be lawfully retained under any provisions of Contract or by law.
- B. Prior progress payments shall be subject to correction in the final payment. Project Manager's determination of amount due as final payment shall be final and conclusive evidence of amount of Work performed by Contractor under Contract, and shall be full measure of compensation to be received by Contractor.
- C. Contractor and each assignee under an assignment in effect at time of final payment shall execute and deliver at time of final payment and as a condition precedent to final payment, Agreement Form, and Release of Any and All Claims,

discharging City of Pittsburg, their officers, agents, employees, and consultants (including, but not limited to Architect/Engineer and Construction Manager) of and from liabilities, obligations, and claims arising under Contract.

- D. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:
1. Completion of Project closeout requirements.
 2. Completion of items specified for completion after Substantial Completion.
 3. Ensure that unsettled claims will be settled.
 4. Ensure that incomplete Work is not accepted and will be completed without undue delay.
 5. Transmittal of required Project construction records to the City.
 6. Certified property survey.
 7. Proof that taxes, fees, and similar obligations were paid.
 8. Removal of temporary facilities and services.
 9. Removal of surplus materials, rubbish, and similar elements.
 10. Change of door locks to City's access.
 11. All as-built drawings.
 12. Lien releases from Contractor and subcontractors.

1.10 EFFECT OF PAYMENT

- A. Payment will be made by City, based on Project Manager's observations at the site and the data comprising the Application for Payment. Payment will not be a representation that Project Manager has:
1. made exhaustive or continuous on-site inspections to check the quality or quantity of Work;
 2. reviewed construction means, methods, techniques, sequences or procedures;
 3. reviewed copies of requisitions received from subcontractors and material suppliers and other data requested by City to substantiate Contractor's right to payment; or
 4. made examination to ascertain how or for what purpose Contractor has used money previously paid on account of the Contract Sum.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION 01 29 00

SECTION 01 31 00 – PROJECT MANAGEMENT AND COORDINATION**PART 1 - GENERAL**

1.1 SUMMARY

- A. This section describes requirements for coordination and meetings.
- B. Related Sections:
 - 1. [Division 00 – General Conditions, Article 2](#)
 - 2. [Section 01 32 16 - Construction Progress Schedule](#)

1.2 COORDINATION

- A. The Contractor shall be responsible for all Project coordination.
- B. Duties of Contractor:
 - 1. Coordinate Work of all subcontractors.
 - 2. Establish on-site lines of authority and communication. Schedule and conduct progress meetings with City and subcontractors.
 - 3. Construction schedules:
 - a. Prepare detailed schedule of operations of all subcontractors on Project in accordance with [Section 01 32 16 – Construction Progress Schedule](#).
 - b. Monitor and update schedules as Work progresses.
 - c. Observe Work to monitor compliance with schedule.
 - 4. Temporary facilities:
 - a. Prepare temporary facilities site plan for City's approval.
 - b. Allocate space for temporary structures furnished by subcontractors.
 - c. Monitor use of temporary utilities.
 - d. Verify that adequate services are provided to comply with requirements for Work and climatic conditions.
 - e. Coordinate traffic control.
 - f. Administer traffic and parking controls.
 - 5. Changes:
 - a. Recommend necessary or desirable changes to Architect/Engineer.
 - b. Review subcontractor's request for changes and for substitutions.
 - c. Submit recommendations to Architect/Engineer, through the Project Manager.
 - d. Process Change Orders.
 - 6. Permits and fees: Verify that subcontractors have obtained permits for inspections.
 - 7. Review all Shop Drawings, Product Data, and Samples for compliance with Contract Documents prior to submittal to Project Manager.
 - 8. Interpretation of Contract Documents:
 - a. Consult with Project Manager and Architect/Engineer to obtain interpretations.
 - b. Assist in resolution of questions which may arise.

- c. Transmit written interpretations to concerned parties.
9. Maintain reports and records at Project Site:
 - a. Daily log progress of Work; make available to Project Manager and Architect/Engineer.
 - b. Records.
 - c. Contracts.
 - d. Purchases.
 - e. Materials and equipment.
 - f. Applicable handbooks, codes and standards.
 - g. Obtain information from subcontractors and maintain record documents. Assemble documentation for handling of claims and disputes.
10. Verify that specified cleaning is done during progress of Work and at completion of each contract.
11. For project requiring building permit, coordinate with the Building Division, City of Pittsburg, for inspections.
12. Start-up:
 - a. Direct the checkout of utilities, operational systems and equipment.
 - b. Assist in initial start-up testing.
 - c. Record dates of start of operation of systems and equipment.
 - d. Submit to City written notice of beginning of Warranty period for equipment put in service.

1.3 COORDINATION REQUIREMENTS

- A. Coordination: Contractor shall coordinate the Work as stated in the [Division 00 – General Conditions](#). Contractor shall also coordinate Work under the Contract with work under separate contracts by City. Contractor shall cooperate with City and others as directed by City in scheduling and sequencing the incorporation into the Work of City Furnished/Contractor installed products identified in the Contract Drawings, Special Conditions, and Specifications.
- B. Relationship of Contract Documents: Drawings, Special Conditions, Specifications, and other Contract Documents in the Project Manual are intended to be complementary. What is required by one shall be as if required by all. What is shown or required, or may be reasonably inferred to be required, or that is usually and customarily provided for similar work, shall be included in the Work.
- C. Discrepancies in Contract Documents: In the event of error, omission, ambiguity or conflict in Drawings, Special Conditions, or Specifications, Contractor shall bring the matter to the Architect/Engineer's attention, through the Project Manager, in a timely manner, for the Architect/Engineer's determination and direction in accordance with provisions of [Division 00 – General Conditions](#).
- D. Construction Interfacing and Coordination: Layout, scheduling and sequencing of Work shall be solely Contractor's responsibility. Contractor shall bring together the various parts, components, systems, and assemblies as required for the correct interfacing and integration of all elements of Work.
- E. Contractor shall coordinate Work to correctly and accurately connect abutting adjoining, overlapping and related elements, including work under separate

1.4 COORDINATION OF SUBCONTRACTS AND SEPARATE CONTRACTS

- A. Superintendence of Work: Contractor shall appoint a field superintendent who shall directly supervise and coordinate Work shown on the Drawings, Special Conditions, and in the Specifications at all times. In order to maintain an uninterrupted construction schedule, the field superintendent shall not be replaced by the Contractor, for other than extenuating circumstances, without prior approval by the Architect/Engineer and/or City.
- B. Subcontractors, Trades and Materials Suppliers: Contractor shall require all subcontractors, trades, crafts and suppliers to coordinate their portions of Work with the Superintendent, Engineer and Construction Project Manager to prevent scheduling, sequencing, dimensional and other conflicts and omissions.
- C. Coordination with Work under Separate Contracts: Contractor shall coordinate and schedule Work under the Contract with work being performed for Project under separate contracts by City, serving utilities and public agencies. Contractor shall make direct contacts with parties responsible for work of the Project under separate contracts, in order to provide timely notifications and to facilitate information exchanges.

1.5 PRECONSTRUCTION CONFERENCE

- A. Project Manager will call for and administer Preconstruction Conference at time and place to be announced. Conference will occur as soon after award as can be reasonably scheduled.
- B. Contractor, all subcontractors, and major suppliers shall attend Preconstruction Conference.
- C. Agenda will include, but not be limited to, the following items:
 - 1. Lines of Communication
 - 2. Schedules
 - 3. Employment Goals
 - 4. Personnel
 - 5. Use of premises
 - 6. Location of Contractor's on-site facilities
 - 7. Project access
 - 8. Employee parking
 - 9. Security
 - 10. NPDES Storm Water Pollution Prevention BMPs
 - 11. Contractor's Questions
 - 12. Housekeeping
 - 13. Submittals
 - 14. Inspection and testing procedures, on-site and off-site
 - 15. Utility shutdown procedures
 - 16. Control and reference point survey procedures
 - 17. Injury and Illness Prevention Program
 - 18. Contractor's Initial CPM Schedule

19. Preparation of Record Documents.

- D. Project Manager will distribute copies of minutes to attendees. Attendees shall have five (5) working days to submit comments or additions to minutes. Minutes will constitute final memorialization of results of the Preconstruction Conference.

1.6 SCHEDULING MEETINGS

- A. Meet with Project Manager no later than Start Date of Contract and conduct initial review of Contractor's Initial Progress Schedule submittal, draft Shop Drawing and Sample Submittal Schedule, and draft Schedule of Values ("Schedule Review Meeting").
- B. Authorized representative in Contractor's organization, designated in writing, who will be responsible for working and coordinating with Project Manager's representative(s) relative to preparation and maintenance of Progress Schedule, shall attend initial Schedule Review Meeting.
- C. Contractor shall, within thirty (30) calendar days from the Notice to Proceed date, meet with City to review Contractor's Original CPM Schedule submittal, and final Shop Drawing and Sample Submittal Schedule, and final Schedule of Values.
 - 1. Contractor shall have its manager, superintendent, scheduler, and key subcontractor representatives, as required by City, in attendance. The meeting will take place over a continuous one-day period.
 - 2. City's review of Schedule Submittals will be limited to conformance to Contract requirements, including, but not limited to, coordination requirements. However, review may also include:
 - a. Clarifications of Contract Requirements
 - b. Directions to include activities and information missing from submittal
 - c. Requests to Contractor to clarify its schedule
 - 3. Within five (5) working days of the initial Schedule Review Meeting, Contractor shall respond in writing to all questions and comments expressed by City at the meeting.
- D. Project Manager will administer scheduling meetings and shall distribute minutes of scheduling meetings to attendees. Attendees shall have five (5) working days to submit comments or additions to minutes. Minutes will constitute final memorialization of results of the scheduling meetings.

1.7 PROGRESS MEETINGS

- A. A progress meeting will be held weekly to review the schedule update submittal and progress payment application. At this meeting, at a minimum, the following items will be reviewed:
 - 1. Previous meeting notes.
 - 2. Percent complete of each activity
 - 3. Time impact evaluations for Change Orders and Time Extension Request
 - 4. Actual and anticipated activity sequence changes
 - 5. Actual and anticipated duration change
 - 6. Actual and anticipated contractor delays
 - 7. Interface requirement

- 8. Status on submittals
- 9. Documentation of information for payment request.

- B. These meetings are considered a critical component of overall monthly schedule update submittal and Contractor shall have appropriate personnel attend. At a minimum, these meetings shall be attended by Contractor's General Superintendent and Scheduler.
- C. Project Manager will record and distribute minutes to Contractor, Building and/or Special Inspector, Architect/Engineer, and all other participants, and those affected by decisions made at the meeting, within five (5) working days after the meeting. Attendees shall have five (5) working days to submit comments or additions to the minutes. The Minutes will constitute final memorialization of the results of the progress meeting.

1.8 SPECIAL MEETINGS

- A. Special meetings may be called by any party by notifying all desired participants, Project Manager, and Building and/or Special Inspector five (5) working days in advance, giving reason for meeting. Special Meetings may be held without advance notice in emergency situations.
- B. At any time during the progress of the Work, any party shall have the right to require attendance at conference, and notice of such conference shall be duly observed and complied with by Contractor.
- C. Contractors shall schedule and conduct coordination meetings as necessary to discharge coordination responsibilities in [Division 00 – General Conditions](#). Project Manager shall be given five (5) working days written notice of coordination meetings. Contractors shall maintain minutes of coordination meetings. Attendees shall have five (5) working days to submit comments or additions to minutes. Minutes will constitute final memorialization of results of the meetings.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION 01 31 00

SECTION 01 32 00 – CONSTRUCTION PROGRESS DOCUMENTATION**PART 1 - GENERAL**

1.1 SUMMARY

A. Section Includes:

1. Preconstruction photographs and videos.
2. Periodic construction photographs and videos.

B. Submittals:

1. Key Plan: Submit key plan of project site and construction with notation of vantage points marked for location and direction of each photograph and video.
2. Construction Photographs: Submit digital copy of photographs in PDF and JPEG form in a CD or a USB flash drive with a folder containing pictures of each street in subfolders.
3. Identification: Identify the project by Contract Number. Identify each photograph by naming it according to the station number on the drawings. Example: Sta 10+00 looking northeast; Sta 12+30 looking west.
4. Digital Images:
 - a. General: Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, uncropped.
 - b. Usage Rights: Submit statement of transfer copyright usage rights to City allowing unlimited reproduction of photographic documentation.
5. Video:
 - a. General: Submit videos on acceptable electronic transfer medium to the Project Manager, accompanied by a detailed log, including descriptions and corresponding counter numbers to facilitate the quick location of information. Videos will be maintained by the Project Manager during construction and may be viewed at any time by Contractor upon request. Upon final acceptance, the videos will become the permanent property of the City.
 - b. Submit video documentations to the Project Manager prior to start of construction work and as otherwise required.
 - c. Usage Rights: Submit statement of transfer copyright usage rights to City allowing unlimited reproduction of videographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images capable of a digital capture resolution of not less than 2240x1680 - 4 Megapixels.

- B. Videos: Provide videos in high resolution digital format with audio capability.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
- B. Key Plan: Maintain with each set of construction photographs that identifies each photographic location.
- C. Digital Images:
 - 1. General: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 2. Date and Time: Include date and time in filename for each image.
 - 3. Field Office Images: Maintain one set of images on acceptable electronic transfer medium in the field office at Project Site, available at all times for reference. Identify images same as for those submitted to Project Manager.
- D. Preconstruction Photographs:
 - 1. General: Before starting construction, take color photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Project Manager.
 - 2. Construction Limits: Flag before taking construction photographs.
 - 3. Adjacent Conditions:
 - a. General: Take three (3) color photographs, from different views, to show existing conditions adjacent to property before starting the Work.
 - b. Existing Buildings: Take three (3) color photographs, different views, of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.

3.2 CONSTRUCTION VIDEOS

- A. Preconstruction Videos: Document existing conditions of adjacent areas (curbs, gutters, sidewalks, driveways, private improvements immediately adjacent to the project site, roadway pavement, access roads, landscaping, etc.) that might be affected by construction operations. Take care to record all existing conditions which exhibit deterioration, imperfections, structural failures, or situations that would be considered substandard.
- B. All Videos: Provide temporary lighting as necessary to properly videotape areas where natural lighting is insufficient (shadows, etc.). Include an audio soundtrack to provide the following information:

1. Detailed description of location being viewed.
2. Direction (N, E, S, W, looking up, looking down, etc.) of camera view.
3. Date, time, temperature, environmental conditions at time of videotaping.
4. Describe in detail areas not readily visible by video. Unless otherwise approved by the Project Manager, do not perform videotaping during inclement weather or when the ground is covered partially or totally with leaves or debris.

END OF SECTION 01 32 00

SECTION 01 32 16 – CONSTRUCTION PROGRESS SCHEDULE**PART 1 - GENERAL**

1.1 SUMMARY

- A. Scheduling of Work under this Contract shall be performed by Contractor in accordance with requirements of this Section.
 - 1. Development of schedule, cost and resource loading of the schedule, monthly payment requests and project status reporting requirements of the Contract shall employ scheduling as required in this Document.
 - 2. The Schedule shall be cost loaded based on Schedule of Values as approved by City.
 - 3. Submit schedules and reports as specified in [Division 00 – General Conditions](#).
- B. Upon Award of Contract, Contractor shall immediately commence development of Initial Schedule to ensure compliance with schedule submittal requirements.
- C. Related Sections
 - 1. [Contract](#)
 - 2. [Division 00 – General Conditions, Article 5](#)
 - 3. [Section 01 10 00 – Summary](#)
 - 4. [Section 01 29 00 – Payment Procedures](#)
 - 5. [Section 01 31 00 – Project Management and Coordination](#)
 - 6. [Section 01 33 00 – Submittal Procedures](#)

1.2 GENERAL

- A. Progress Schedule shall be based on and incorporate milestone and completion dates specified in Contract Documents.
- B. Overall time of completion and time of completion for each milestone shown on Progress Schedule shall adhere to times in the [Contract](#), unless an earlier (advanced) time of completion is requested by Contractor and agreed to by City. Any such agreement shall be formalized by a Change Order.
 - 1. City is not required to accept an earlier (advanced) schedule, i.e., one that shows early completion dates for the Contract Times.
 - 2. Contractor shall not be entitled to extra compensation in event agreement is reached on an earlier (advanced) schedule and Contractor completes its Work, for whatever reason, beyond completion date shown in earlier (advanced) schedule but within the Contract Times.
 - 3. A schedule showing the work completed in less than the Contract Times, which has been accepted by City, shall be considered to have Project Float. The Project Float is the time between the scheduled completion of the work and Contract Substantial Completion. Project Float is a resource available to

- C. Progress Schedule shall be the basis for evaluating job progress, payment requests, and time extension requests. Responsibility for developing Contract schedule and monitoring actual progress as compared to Progress Schedule rests with Contractor.
- D. Failure of Progress Schedule to include any element of the Work or any inaccuracy in Progress Schedule will not relieve Contractor from responsibility for accomplishing the Work in accordance with the Contract. City's acceptance of Schedule shall be for its use in monitoring and evaluating job progress, payment requests, and time extension requests, and shall not, in any manner, impose a duty of care upon City, or act to relieve Contractor of its responsibility for means and methods of construction.
- E. Transmit each item per [Section 01 33 00 – Submittal Procedures](#) under form approved by City.
 - 1. Identify Project with the City Contract number, and name of Contractor.
 - 2. Provide space for Contractor's approval stamp and City's review stamps.
 - 3. Submittals received from sources other than Contractor will be returned to Contractor without City's review.

1.3 INITIAL AND ORIGINAL SCHEDULE

- A. Initial Schedule submitted for review at the pre-construction conference shall serve as Contractor's schedule for up to thirty (30) calendar days after the Notice to Proceed.
- B. Indicate detailed plan for the Work to be completed in first thirty (30) calendar days of the Contract; details of planned mobilization of plant and equipment; sequence of early operations; and procurement of materials and equipment. Show Work beyond thirty (30) calendar days in summary form.
- C. Original (or "Baseline") Schedule shall be submitted for review no later than Contractor's first progress payment application submittal.
- D. All schedules shall be time-scaled.
- E. All schedules shall be cost and resource loaded. Accepted cost and resource loaded schedule will be used as basis for monthly progress payments. Use of Initial Schedule for progress payments shall not exceed thirty (30) calendar days.
- F. City and Contractor shall meet to review and discuss the Schedule within seven (7) calendar days after it has been submitted to City.
 - 1. City's review and comment on the schedule shall be limited to Contract conformance (with sequencing, coordination, and milestone requirements).
 - 2. Contractor shall make corrections to Schedule necessary to comply with Contract requirements and shall adjust Schedule to incorporate any missing information requested by City. Contractor shall resubmit Initial Schedule if requested by City.

1.4 CONSTRUCTION SCHEDULE FORMAT AND LEVEL OF DETAIL

- A. The Construction Schedule is to indicate all separate fabrication and field construction activities required for completion of the work, including but not limited to the following:
1. All Contractor, Subcontractor and assigned Contractor work shall be shown in a logical work sequence that demonstrates a coordinated plan of work for all contractors. The intent is to provide a common basis of acceptance, understanding and communication, as well as interface with other contractors.
 2. Activities related to the delivery of City-furnished equipment to be contractor-installed per Contract shall be shown.
 3. All activities shall be identified through codes or other identification to indicate the building (i.e. buildings, site work) and Contractor/subcontractor responsibility to which they pertain.
 4. Contractor shall break up the work schedule into activities of durations of approximately fifteen (15) calendar days or less each, except for non-field construction activities or as otherwise deemed acceptable by the Project Manager.
- B. Seasonal weather conditions (which do not constitute a delay as defined herein) shall be considered in the planning and scheduling of all work influenced by high or low ambient temperatures or presence of high moisture for the completion of the work within the allotted contract time.
- C. In conformance with the Contract Documents Contractor shall furnish a breakdown of the bid by assigning dollar values (cost estimated) to each applicable network activity, which cumulatively equals the bid. Upon acceptance by City, the values will be used as the basis for determining progress payments. Contractor's overhead, profit, and cost of bonds and insurance, shall be prorated through all activities.
- D. Failure by Contractor to include any element of work required for performance of the work on the detailed construction schedule shall not excuse Contractor from completing all work required within the Contract time.
- E. A two-week "look ahead" detailed, daily bar chart schedule shall be updated and issued weekly, no later than the time of the scheduled weekly meeting.
- F. Contractor shall utilize computer scheduling software, such as PRIMAVERA or approved equivalent software for all scheduling including schedule updates. Contractor shall supply computer data files for all schedules including the original schedule and monthly schedule updates.

1.5 MONTHLY SCHEDULE UPDATE SUBMITTALS

- A. Following acceptance of Contractor's Initial Schedule, Contractor shall monitor progress of Work and adjust schedule each month to reflect actual progress and any anticipated changes to planned activities.
1. Each schedule update submitted shall be complete, including all information requested for the Initial Schedule submittal.

2. Each update shall continue to show all work activities including those already completed. These completed activities shall accurately reflect "as built" information by indicating when activities were actually started and completed.
- B. A meeting will be held after the first Project Meeting of each month to review the schedule update submittal and progress payment application.
1. At this meeting, at a minimum, the following items will be reviewed: percent complete of each activity; time impact evaluations for change orders and time extension requests; actual and anticipated activity sequence changes; actual and anticipated duration changes; and actual and anticipated contractor delays.
 2. These meetings are considered a critical component of overall monthly schedule update submittal and Contractor shall have appropriate personnel attend. At a minimum, these meetings shall be attended by Contractor's General Superintendent and Scheduler.
 3. Contractor shall plan on the meeting taking no less than two (2) hours.
- C. Within five (5) working days after monthly schedule update meeting, Contractor shall submit the updated Schedule update.
- D. Within five (5) working days of receipt of above noted revised submittals, City will either accept or reject monthly schedule update submittal.
1. If accepted, percent complete shown in monthly update will be basis for Application for Payment by Contractor. The schedule update shall be submitted as part of Contractor's Application for Payment.
 2. If rejected, update shall be corrected and resubmitted by Contractor before the Application for Payment is submitted.
- E. Neither updating, changing or revising of any report, curve, schedule or narrative submitted to City by Contractor under this Contract, nor City's review or acceptance of any such report, curve, schedule or narrative, shall have the effect of amending or modifying, in any way, the Contract Substantial Completion date or milestone dates or of modifying or limiting, in any way, Contractor's obligations under this Contract.

1.6 SCHEDULE REVISIONS

- A. Updating the Schedule to reflect actual progress shall not be considered revisions to the Schedule. Since scheduling is a dynamic process, revisions to activity durations and sequences are expected on a monthly basis.
- B. To reflect revisions to the schedule, Contractor shall provide City with a written narrative with a full description and reasons for each Work activity revised. For revisions affecting the sequence of work, Contractor shall provide a schedule diagram which compares the original sequence to the revised sequence of work. Contractor shall provide the written narrative and schedule diagram for revisions two (2) calendar days in advance of the monthly schedule update meeting.
- C. Schedule revisions shall not be incorporated into any schedule update until the revisions have been reviewed by City. City may request further information and

justification for schedule revisions and Contractor shall, within three (3) calendar days, provide City with a complete written narrative response to City's request.

- D. If Contractor's revision is still not accepted by City, and Contractor disagrees with City's position, Contractor has seven (7) calendar days from receipt of City's letter rejecting the revision, to provide a written narrative providing full justification and explanation for the revision. Contractor's failure to respond in writing within seven (7) calendar days of City's written rejection of a schedule revision shall be contractually interpreted as acceptance of City's position, and Contractor waives its rights to subsequently dispute or file a claim regarding City's position.
- E. At City's discretion, Contractor can be required to provide subcontractor certifications of performance regarding proposed schedule revisions affecting said subcontractors.

1.7 RECOVERY SCHEDULE

- A. If the Schedule Update shows a substantial completion date twenty-one (21) calendar days beyond the Contract Substantial Completion date, or individual milestone completion dates, Contractor shall submit to City the proposed revisions to recover the lost time within seven (7) calendar days. As part of this submittal, Contractor shall provide a written narrative for each revision made to recapture the lost time. If the revisions include sequence changes, Contractor shall provide a schedule diagram comparing the original sequence to the revised sequence of work.
- B. The revisions shall not be incorporated into any schedule update until the revisions have been reviewed by City.
- C. If Contractor's revisions are not accepted by City, City and Contractor shall follow the procedures in paragraph 1.6.C, 1.6.D and 1.6.E above.
- D. At City's discretion, Contractor can be required to provide subcontractor certifications for revisions affecting said subcontractors.

1.8 TIME EXTENSIONS

- A. Contractor is responsible for requesting time extensions for time impacts that, in the opinion of Contractor, impact the critical path of the current schedule update. Notice of time impacts shall be given in accord with [Division 00 – General Conditions, Article 5](#).
- B. Where an event for which City is responsible impacts the projected Substantial Completion date, Contractor shall provide a written mitigation plan, including a schedule diagram, which explains how the impact can be mitigated (e.g., increase crew size, overtime, etc.). Contractor shall also include a detailed cost breakdown of the labor, equipment and material Contractor would expend to mitigate City caused time impact. Contractor shall submit its mitigation plan to City within ten (10) working days from the date of discovery of said impact. Contractor is responsible for the cost to prepare the mitigation plan.

- C. Failure to request time or provide the required mitigation plan will result in Contractor waiving its right to a time extension and cost to mitigate the delay.
- D. No time will be granted under this Contract for cumulative effect of changes.
- E. City will not be obligated to consider any time extension request unless requirements of Contract Documents are satisfied.
- F. Failure of Contractor to perform in accordance with the current schedule update shall not be excused by submittal of time extension requests.

1.9 PROJECT STATUS REPORTING

- A. In addition to submittal requirements for scheduling identified in this Section, Contractor shall provide a monthly project status report (i.e., written narrative report) to be submitted in conjunction with each Schedule as specified herein. Status reporting shall be in form specified below.
- B. Contractor shall prepare monthly written narrative reports of status of Project for submission to City. Written status reports shall include:
 - 1. Status of major Project components (percent complete, amount of time ahead or behind schedule) and an explanation of how Project will be brought back on schedule if delays have occurred.
 - 2. Progress made on critical activities indicated on Schedule, inspections and visits by the Building and/or Special Inspection Inspector.
 - 3. Explanations for any lack of work on critical path activities planned to be performed during last month.
 - 4. Explanations for any schedule changes, including changes to logic or to activity durations.
 - 5. List of critical activities scheduled to be performed next month.
 - 6. Status of major material and equipment procurement.
 - 7. Any delays encountered during reporting period.
 - 8. Contractor shall provide a printed report indicating actual versus planned resource loading for each trade and each activity. This report shall be provided on weekly and monthly basis.
 - a. Actual resource shall be accumulated in field by Contractor, and shall be as noted on Contractor's daily reports. These reports will be basis for information provided in monthly and weekly printed reports.
 - b. Contractor shall explain all variances and mitigation measures.
 - 9. Contractor may include any other information pertinent to status of Project. Contractor shall include additional status information requested by City at no additional cost.
 - 10. Status reports, and the information contained therein, shall not be construed as claims, notice of claims, notice of delay, or requests for changes or compensation.

PART 2 - PRODUCTS

NOT USED

NOT USED

END OF SECTION 01 32 16

SECTION 01 33 00 – SUBMITTAL PROCEDURES**PART 1 - GENERAL**

1.1 SUMMARY

- A. This section describes general requirements for submittals for the Work:
1. Procedures
 2. Schedule of Shop Drawing and Sample Submittals
 3. Safety Plan
 4. Progress Schedule
 5. Product Data
 6. Shop drawings
 7. Samples
 8. Quality Control Submittals
 - a. Design Data
 - b. Test Reports
 - c. Certificates
 - d. Manufacturers' Instructions
 9. Machine Inventory Sheets
 10. Operations and Maintenance Manuals
 11. Keys
 12. Project Record Documents
- B. Related Sections:
1. [Division 00 – General Conditions, Article 2](#)
 2. [Section 01 10 00 - Summary](#)
 3. [Section 01 25 00 – Substitution Procedures](#)
 4. [Section 01 26 00 – Contract Modification Procedures](#)
 5. [Section 01 29 00 – Payment Procedures](#)
 6. [Section 01 32 16 – Construction Progress Schedule](#)
 7. [Section 01 78 00 – Closeout Submittals](#)

1.2 PROCEDURES

- A. Upon issuance of the “Notice to Proceed”, the Contractor shall have thirty-five (35) calendar days to submit, at Contractor/Vendor expense, sets of the following: Schedule of Shop Drawing and Sample Submittals, Safety Plans, Progress Schedule, Product Data, Shop Drawings, Samples, Quality Control Data, Machine Inventory Sheets, Operations and Maintenance Manuals, and Project Record Documents required by the Contract Documents. Submit these submittals to Project Manager for review and approval in accordance with accepted schedule of Shop Drawings and Samples submittals.
- B. Transmit each item with a standard letter of transmittal. Identify project, Contractor, subcontractor, major supplier, pertinent drawing sheet and detail number, technical

specifications, and specification section number as appropriate. Provide space for Contractor, Project Manager and Architect/Engineer review stamps. Where manufacturer's standard drawings or data sheets are used, they shall be marked clearly to show those portions of the data which are applicable to this project. The transmittal sheet will include the following:

1. Date
 2. Project and Contract Name and Number
 3. Subcontractor or supplier as appropriate
 4. Trade
 5. Contractor Review Stamp
- C. The data shown on the Shop Drawings shall be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to show Project Manager and Architect/Engineer the materials and equipment Contractor proposes to provide and to enable Project Manager and Architect/Engineer to review the information for the limited purposes specified below. Samples shall be identified clearly as to material, supplier; pertinent data such as catalog numbers and the use for which it is intended and otherwise as Project Manager and Architect/Engineer may require enabling Project Manager and Architect/Engineer to review the submittal.
- D. At the time of each submission, Contractor shall give City specific written notice of all variations, if any; that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, and the reasons therefor. This written notice shall be a separate document from the submittal. In addition, Contractor shall cause a specific notation to be made on each Shop Drawing and Sample submitted to City for review and approval of each such variation. If City accepts deviation, City shall issue appropriate Contract Modification.
- E. Submittal coordination and verification of contract compliance is responsibility of Contractor; this responsibility shall not be delegated in whole or in part to subcontractors or suppliers. Before submitting each Shop Drawing or Sample, Contractor shall have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents, and shall have determined and verified:
1. All field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto;
 2. All materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work; and
 3. All information relative to Contractor's sole responsibilities and of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.
- F. Contractor's submission to City of a Shop Drawing or Sample submittal will constitute Contractor's representation that it has satisfied its obligations under the Contract Documents, and as set forth immediately above, with respect to Contractor's review and approval of that submittal.
- G. After review by Project Manager and Architect/Engineer of each of Contractor's

submittals, one set of materials will be returned to Contractor with actions defined as follows:

1. NO EXCEPTIONS TAKEN - Accepted subject to its compatibility with future submittals and additional partial submittals for portions of the work not covered in this submittal. Does not constitute approval or deletion of specified or required items not shown on the submittal.
 2. MAKE CORRECTIONS NOTED (NO RESUBMISSIONS REQUIRED) - Same as 1. above, except that minor corrections as noted shall be made by Contractor.
 3. AMEND AND RESUBMIT - Rejected because of major inconsistencies or errors which shall be resolved or corrected by Contractor prior to subsequent review by Project Manager and Architect/Engineer.
 4. REJECTED - RESUBMIT - Submitted material does not conform to Plans and Specifications in major respect, i.e.: wrong size, model, capacity, or material.
- H. It is considered reasonable that Contractor shall make a complete and acceptable submittal at least by second submission. City reserves the right to deduct monies from payments due Contractor to cover additional costs of Project Manager's and Architect/Engineer's review beyond the second submission. Illegible submittals will be rejected and returned to Contractor for resubmission.
- I. Favorable review will not constitute acceptance by City of any responsibility for the accuracy, coordination and completeness of the submittals. Accuracy, coordination, and completeness of Submittals shall be sole responsibility of Contractor, including responsibility to back check comments, corrections, and modifications resulting from City's review which shall be incorporated in design before fabrication. Submittals may be prepared by Contractor, subcontractors, or suppliers, but Contractor shall ascertain that submittals meet requirements of Contract Documents, while conforming to structural space and access conditions at point of installation. Project Manager and Architect/Engineer's review will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as indicated by the Contract Documents. Favorable review of submittal, method of work, or information regarding materials and equipment Contractor proposes to furnish shall not relieve Contractor of responsibility for errors therein and shall not be regarded as assumption of risks or liability by Architect/Engineer or City, or any officer or employee thereof, and Contractor shall have no claim under Contract on account of failure or partial failure or inefficiency or insufficiency of any plan or method of work or material and equipment so accepted. Favorable review shall be considered to mean merely that Architect/Engineer or City has no objection to Contractor using, upon his own full responsibility, plan or method of work proposed, or furnishing materials and equipment proposed.
- J. City's review shall not be construed as approval of means, methods, techniques, sequences or procedures of construction or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
- K. Submit complete initial submittal for those items where required by individual

technical specifications, or specification sections. Complete submittal shall contain sufficient data to demonstrate that items comply with Specifications, shall meet minimum requirements for submissions cited in technical specifications, shall include motor data and seismic anchorage certifications, where required, and shall include necessary revisions required for equipment other than first named. If Contractor submits incomplete initial submittal, when complete submittal is required, submittal may be returned to Contractor without review.

- L. It shall be Contractor's responsibility to copy, conform and distribute reviewed submittals in sufficient numbers for Contractor's files, subcontractors and vendors.
- M. After Project Manager's and Architect/Engineer's review of submittal, revise and resubmit as required. Identify changes made since previous submittal.
 - 1. Begin no fabrication or work which require submittals until return of submittals not requiring re-submittal.
 - 2. Normally, submittals will be processed and returned to Contractor within fifteen (15) calendar days of receipt.
- N. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

1.3 SCHEDULE OF SHOP DRAWING AND SAMPLE SUBMITTALS

- A. Submit preliminary Schedule of Shop Drawing and Sample Submittals as required by [Division 00 - General Conditions](#) or as elsewhere specified in the Contract Documents. Submit three (3) copies and PDF of final and accepted schedule of submittals of shop drawings and samples as required by [Division 00 - General Conditions](#), and in no event later than thirty-five (35) calendar days following Notice to Proceed.
- B. Schedule of Shop Drawing and Sample Submittals will be used by Project Manager and Architect/Engineer to schedule their activities relating to review of submittals. Schedule of submittals shall indicate a spreading out of submittals and early submittals of long-lead-time items and of items which require extensive review.
- C. Schedule of Shop Drawing and Sample Submittals shall be reviewed by Project Manager and shall be revised and resubmitted until accepted by Project Manager.

1.4 SAFETY PLAN

- A. Submit three (3) copies of Safety Plan specific to this Contract to Project Manager within fifteen (15) calendar days of issuance of the Notice to Proceed.
- B. One (1) copy of accepted Safety Plan will be returned to Contractor.
- C. No on-site work shall be started until Safety Plan has been reviewed and accepted by City. Acceptance of Safety Plan shall not affect Contractor's responsibility for maintaining a safe working place and instituting safety programs in connection with project.

1.5 PROGRESS SCHEDULE

- A. See [Section 01 32 16 – Construction Progress Schedule](#) for schedule and report requirements.
- B. Submit three (3) copies and PDF of schedule at each of the following times:
 1. Initial CPM Schedule at the Preconstruction Conference (covering in detail first thirty (30) calendar days of contract performance, and at a summary level for remainder of contract).
 2. Original CPM Schedule within thirty (30) calendar days of the Notice to Proceed date (covering in detail entire Work of Contract to completion).
 3. Adjustments to the CPM Schedule as required.
 4. CPM Schedule updates weekly, two (2) calendar days prior to weekly progress meeting.
- C. Submit three (3) copies and PDF of the reports listed in [Section 01 32 16 – Construction Progress Schedule](#) with:
 1. Initial CPM Schedule
 2. Original CPM Schedule
 3. Each weekly Schedule update
- D. Progress Schedules and Reports shall be submitted electronically and stored in a USB flash drive in addition to hard copies specified above.

1.6 PRODUCT DATA

- A. Within ten (10) calendar days after Start Date of the Contract Times, submit copies of complete list of major products and equipment proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.
- C. Tabulate products by Special Conditions and Specification Section Number.
- D. Supplemental Data: Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturer's standard data to provide information unique to Project.
- E. Provide copies for Project Record Documents described in [Section 01 78 00 – Closeout Submittals](#).

1.7 SHOP DRAWINGS

- A. Submit three (3) copies and PDF of shop drawings.
- B. Minimum Sheet Size: 8-1/2 inches by 11 inches. All others: Multiples of 8-1/2 inches by 11 inches, 22 inches by 34 inches (ANSI D) maximum.
- C. Original sheet or reproducible transparency will be marked with Project Manager's and/or Architect/Engineer's review comments and returned to Contractor.
- D. Mark each copy to identify applicable Products, models, options, and other data; supplement manufacturers' standard data to provide information unique to Work.

- E. Include manufacturers' installation instructions when required by technical specifications or specification section.

1.8 SAMPLES

- A. Submit full range of manufacturers' standard colors, textures, and patterns for Project Manager's selection where not indicated in documents or for substitutions or "equals".
- B. Submit samples to illustrate functional and aesthetic characteristics of Product, with integral parts and attachment devices. Coordinate submittal of different categories for interfacing work.
- C. Include identification on each sample, giving full information.
- D. Submit three (3) samples unless otherwise specified.
- E. Sizes: Unless otherwise specified, provide the following:
 - 1. Paint Chips: Manufacturers' standard.
 - 2. Flat or Sheet Products: Minimum 6 inches square, maximum 12 inches square.
 - 3. Linear Products: Minimum 6 inches, maximum 12 inches long.
 - 4. Bulk Products: Minimum 1 pint, maximum 1 gallon.
- F. Full size samples may be used in Work upon approval.
- G. Mock-ups:
 - 1. Erect field samples and mock-ups at Project site in accordance with requirements of Special Conditions or Specification sections.
 - 2. Modify or make additional field samples and mock-ups as required to provide appearance and finishes approved by Project Manager.
 - 3. Approved field samples and mock-ups may be used in Work upon approval.

1.9 QUALITY CONTROL SUBMITTALS

- A. Design Data: Three (3) copies and PDF.
- B. Test Reports: Three (3) copies and PDF.
 - 1. Indicate that material or product conforms to or exceeds specified requirements.
 - 2. Reports may be from recent or previous tests on material or product, but must be acceptable to Project Manager. Comply with requirements of each individual technical specifications or specification Section.
- C. Certificates: Three (3) copies and PDF.
 - 1. Indicate that material or product conforms to or exceeds specified requirements.
 - 2. Submit supporting reference data, affidavits, and certifications as appropriate.
 - 3. Certificates may be recent or from previous test results on material or product, but must be acceptable to Project Manager.

- D. Manufacturers' Instructions: Three (3) copies and PDF.
 - 1. Include manufacturer's printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing.
 - 2. Identify conflicts between manufacturer's instructions and Contract Documents.

1.10 MACHINE INVENTORY SHEETS

- A. Submit three (3) copies of machine inventory sheets including inventory list for spare parts and materials. If necessary, copies will be marked with Project Manager's and/or Architect/Engineer's review comments and returned to Contractor for correction until satisfactory information is provided. City will retain satisfactorily corrected sheets for its own use.

1.11 OPERATIONS AND MAINTENANCE MANUALS

- A. Submit three (3) copies and PDF of manufacturers' operations and maintenance manuals. If necessary, copies will be marked with City's review comments and returned to Contractor for correction until satisfactory information is provided. City will retain satisfactorily corrected manuals for its own use.
- B. Operations and maintenance manuals shall include the following as appropriate:
 - 1. Operating instructions.
 - 2. Preventive maintenance instructions.
 - 3. Cleaning instructions.
 - 4. Safety precautions.
 - 5. Trouble shooting procedures.
 - 6. Theory of operation to discrete component level.
 - 7. Schematic diagrams, flow diagrams, wiring diagrams, logic diagrams, etc. to discrete component level.
 - 8. Parts lists showing all discrete components with part number, current prices and availability.
 - 9. List of replaceable supplies; paper, ink, ribbon, etc. with part numbers, current prices and availability.
 - 10. Recommended levels of spare parts and supplies to keep on hand.
 - 11. Manufacturers' service and maintenance technical manuals.
 - 12. Names, addresses and telephone numbers of service and repair firms for the equipment.

- C. Manuals shall be the same as are used by manufacturers' authorized technicians to completely service and repair the equipment.

1.12 KEYS

- A. Submit two (2) complete sets of keys for the Project and all related facilities.
- B. Submit an inventory list of keys.

1.13 PROJECT RECORD DOCUMENTS

- A. Submit copies of each of the Project Record Documents as listed in [Section 01 78 00 – Closeout Submittals](#).

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION 01 33 00

SECTION 01 41 00 – REGULATORY REQUIREMENTS**PART 1 - GENERAL****1.1 SUMMARY**

- A. This section includes some of the key regulatory requirements applicable to Contract, provided for the Contractor's convenience only, and not intended as a complete list of all currently applicable regulatory requirements.

1.2 REFERENCES TO REGULATORY REQUIREMENTS

- A. Codes, laws, ordinances, rules and regulations referred to shall have full force and effect as though printed in full in these specifications.
- B. Conform to referenced codes, laws, ordinances, rules and regulations which are in effect on date of receipt of bids.

1.3 CODES

- A. Codes which apply to Contract include, but are not limited to, the following:
 - 1. California Building Code (CBC) – Latest Edition:
 - a. California Administrative Code: Title 24, Part 1.
 - b. California Building Code: Title 24, Part 2 (Includes the California Historical Building Code, Part 8 and California Existing Building Code, Part 10).
 - c. California Residential Code: Title 24, Part 2.5
 - d. California Electrical Code: Title 24, Part 3.
 - e. California Mechanical Code: Title 24, Part 4.
 - f. California Plumbing Code: Title 24, Part 5.
 - g. California Energy Code: Title 24, Part 6.
 - h. California Fire Code: Title 24, Part 9.
 - i. California Green Building Standards Code (CALGreen): Title 24, Part 11.
 - j. California Referenced Standards Code: Title 24, Part 12.

1.4 LAWS, ORDINANCES, RULES AND REGULATIONS

- A. During prosecution of Work to be done under Contract, comply with applicable laws, ordinances, rules and regulations, including, but not limited to, the following:
 - 1. Federal/National:
 - a. Americans with Disabilities Act (ADA): Latest edition; Civil Rights Division, Office on the Americans with Disabilities Act, U.S. Department of Justice
 - b. National Fire Protection Association (NFPA): Life Safety Code - NFPA 101.
 - c. U. S. Environmental Protection Agency (EPA): Laws and regulations.

- d. 29 CFR, Section 1910.1001, Asbestos
- e. 40 CFR, Subpart M, National Emission Standards for Asbestos
- f. Executive Order 11246
- 2. State of California:
 - a. California Code of Regulations, Titles 5, 8, 19, 21, 24
 - b. California Education Code
 - c. California Public Contract Code
 - d. California Health and Safety Code
 - e. California Government Code
 - f. California Labor Code
 - g. California Civil Code
 - h. California Code of Civil Procedure
 - i. CPUC General Order 95, Rules for Overhead Electric Line Construction
 - j. CPUC General Order 128, Rules for Construction of Underground Electric Supply and Communications Systems
- 3. State of California Agencies:
 - a. State and Consumer Services Agency
 - b. Department of Industrial Relations – Public Works
 - c. Office of the State Fire Marshal
 - d. California Environmental Protection Agency (CalEPA): State regulations and standards.
 - e. California Integrated Waste Management Board:
 - 1) General: Sustainable Building Guidelines.
 - 2) Construction Waste Management: Construction and Demolition Debris Recycling.
 - f. California State Water Resources Control Board (SWRCB): SWPPP Standards.
 - g. California Department of Toxic Substances Control (DTSC): Hazardous Waste Management standards.
- 4. City Codes:
 - a. Pittsburg Municipal Code
- 5. Local Agencies:
 - a. Bay Area Air Quality Management
 - b. County of Contra Costa
 - c. City of Pittsburg

1.5 RESERVED

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION 01 41 00

SECTION 01 42 00 – REFERENCES**PART 1 - GENERAL**

1.1 SUMMARY

A. Section Includes:

1. This section includes reference standards, symbols and definitions used in Contract Documents.
2. Material and workmanship specified by reference to number, symbol, or title of specific standard such as state standard, commercial standard, federal specifications, technical society, or trade association standard, or other similar standard shall comply with requirements of standards except when more rigid requirements are specified or required by applicable codes.
3. Standards referred to, except as modified herein, shall have full force and effect as though printed in the Contract Documents. Standards are not furnished to Contractor, since manufacturers and trades involved are assumed to be familiar with their requirements.

1.2 REFERENCE TO STANDARDS AND SPECIFICATIONS OF TECHNICAL SOCIETIES; REPORTING AND RESOLVING DISCREPANCIES:

- A. Latest in Effect: Reference to standards, specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code or laws or regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated in the Contract Documents.
- B. Discrepancies: If during the performance of the Work, Contractor discovers any conflict, error, ambiguity or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such law or regulation applicable to the performance of the Work or of any such standard, specification, manual or code or of any instruction of any supplier, Contractor shall report it in writing at once to Inspector, with copies to Project Manager and Architect/Engineer, and Contractor shall not proceed with the Work affected thereby until consent to do so is given by Project Manager.
- C. Precedence: Except as otherwise specifically stated in the Contract Documents, including Division 00 – General Conditions, Article 3, or as may be provided by Change Order, or supplemental instruction, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and:
 1. The provisions of any such standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the

- Contract Documents); or
2. The provisions of any such laws or regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such law or regulation).
 3. No provision of any such standard, specification, manual, code or instruction shall be effective to change the duties and responsibilities of City, Contractor, Project Manager, or Architect/Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents, nor shall it be effective to assign to City, Architect/Engineer, Project Manager, or any of their consultants, agents or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

1.3 STANDARDS

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AI	The Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
APWA	American Public Works Association
AREMA	The American Railway Engineering and Maintenance-of-Way Association
ASCE	American Society of Civil Engineers
ASLA	American Society of Landscape Architects
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineering
ASTM	American Society for Testing and Materials
AWS	American Welding Society

AWWA	American Water Works Association
BASMAA	Bay Area Stormwater Management Agencies Association
BBC	Basic Building Code, Building Officials and Code Administrators International
BFL	Bay Friendly Landscaping
CALOSHA	California Occupational Safety and Health Administration
CA MUTCD	California Manual on Uniform Traffic Control Devices
CALTRANS	State of California Department of Transportation
CBC	California Building Code
CCR	California Code of Regulations
CLFMI	Chain Link Fence Manufacturer's Institute
CRSI	Concrete Reinforcing Steel Institute
DDW	Division of Drinking Water
EIA	Electronic Industries Association
IAPMO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronics Engineers
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
MSS	Manufacturers Standardization Society
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration (Federal)
PCA	Portland Cement Association

PUC	Public Utilities Commission
SSPC	Steel Structures Painting Council
STA	Seal of Testing Assurance Program
UL	Underwriters Laboratories, Inc
USCC	U S Composting Council

1.4 SYMBOLS

- A. Symbols, used only on Drawings, are shown thereon.

1.5 DEFINITIONS

- A. Wherever any of the words or phrases defined below, or a pronoun used in place thereof, is used in any part of the City Standard Specifications, it shall have the meaning here set forth:
1. ADDENDUM/ADDENDA: Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the bidding requirements or the Contract Documents.
 2. ADDITIVE BID: The sum to be added to the Base Bid if the change in scope of work as described in Additive Bid is accepted by City.
 3. AGREEMENT The Contract executed by the parties as further defined in Division 00 – General Conditions, Article 1.
 4. ALTERNATE: Work added to or deducted from the Base Bid, if accepted by City.
 5. APPROVED EQUAL: Approved in writing by City as being of equivalent quality, utility and appearance.
 6. ARCHITECT/ENGINEER:
 - a. Design Architect: The person holding a valid California State Architect's or Landscape Architect's license, whose firm has been designated within the Contract Documents to provide architectural or landscape architectural services on the project, and who may have engaged engineering subconsultants to provide services on Project.
 - b. Design Engineer: The person holding a valid California State Engineering license, whose firm has been designated within the Contract Documents to provide civil, structural, traffic or other engineering services on the project, and who may have engaged engineering subconsultants to provide services on Project.
 - c. When the Architect/Engineer is referred to within the Contract Documents and no Architect or Engineer has in fact been designated, then the matter shall be referred to City. The term Architect/Engineer shall be construed to include all his or her consultants retained for the Project, as well as employees of the Architect/Engineer. When the designated Architect/Engineer is an employee of City, his or her authorized representatives on the Project within the district will be included under the term Architect/Engineer.
 7. AS-BUILTS: Project Record Documents as required by the General Conditions and [Section 01 78 00 – Closeout Submittals](#).

8. BID: The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
9. BIDDER: One who submits a Bid.
10. BY CITY: Work that will be performed by City or its agents at the City's expense.
11. BY OTHERS: Work that is outside scope of Work to be performed by Contractor under this Contract, which will be performed by City, other contractors, or other means.
12. CITY: City of Pittsburg, acting through its City Council or any of its authorized agents.
13. CITY CORPORATION YARD: Located at 357 East 12th Street, Pittsburg, CA 94565-2628.
14. CITY ENGINEER: City employee in charge of Engineering.
15. CITY-FURNISHED, CONTRACTOR-INSTALLED: Items furnished by City at its cost for installation by Contractor at its cost under this Contract.
16. CITY'S PROJECT MANAGER(S): The person or persons assigned by City to be City's agent(s) or representative(s) at the site. City's authorized agent representing City on all matters of the Contract. Project Manager may authorize agents and representatives to act in carrying out Project Manager's duties, including a "Construction Manager", to act under the authority of the Project Manager. As City's agent, the Project Manager is the beneficiary of all contract obligations of Contractor to City, including without limitation, all releases and indemnities.
17. CHANGE ORDER: A written instrument prepared by City and signed by City and Contractor, stating their agreement upon all of the following:
 - a. a change in the Work,
 - b. the amount of the adjustment in the Contract Sum, if any, and
 - c. the amount of the adjustment in the Contract Time, if any.
18. CONCEALED: Work not exposed to view in the finished Work, including within or behind various construction elements.
 - a. CONTRACT CONDITIONS: Conditions of the Contract define basic rights, responsibilities and relationships of Contractor and City and consists of two parts: General Conditions and Supplementary Conditions.
 - b. General Conditions are general clauses which are common to the City Contracts.
 - c. Supplementary conditions modify or supplement General Conditions to meet specific requirements for this Contract.
19. CONTRACT DOCUMENTS: Contract Documents shall consist of the documents identified as the Contract Documents in [Division 00 - General Conditions, Article 1](#), plus all changes, addenda and modifications thereto.
20. CONTRACT MODIFICATION: Either:
 - a. a written amendment to Contract signed by Contractor and City; or
 - b. a Change Order; or
 - c. a written directive for a minor change in the Work issued by City.
21. CONTRACT SUM: The sum stated in the Agreement and, including authorized adjustments, the total amount payable by City to Contractor for performance of the Work and the Contract Documents. The Contract Sum is also referred to as the Contract Price or the Contract Amount.
22. CONTRACT TIMES or CONTRACT TIME: The number or numbers of days

- or the dates stated in the Agreement (i) to achieve substantial completion of the Work or designated milestones and/or (ii) to complete the Work so that it is ready for final payment and is accepted.
23. CONSTRUCTION MANAGER: A representative of City with authority to act on behalf of City, as specified by City or Project Manager.
 24. CONTRACTOR: The person or entity identified as such in the Agreement and referred to throughout the Contract Documents as if singular in number and neuter in gender. The term "Contractor" means the Contractor or its authorized representative.
 25. CONTRACTOR'S EMPLOYEES: Persons engaged in execution of Work under Contract as direct employees of Contractor, as subcontractors, or as employees of subcontractors.
 26. DATE OF SUBSTANTIAL COMPLETION: Date of Substantial Completion of Work or designated portion thereof is date certified by Project Manager when construction is sufficiently complete in accordance with Contract Documents for City to occupy Work or designated portion thereof and have beneficial use of it for the purposes intended.
 27. DAY: One calendar day, unless the word "day" is specifically modified to the contrary.
 28. DEFECTIVE: An adjective which, when modifying the word "Work", refers to Work that is unsatisfactory or unsuited for the use intended, faulty, or deficient, that it does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents (including but not limited to approval of samples and "or equal" items), or has been damaged prior to final payment (unless responsibility for the protection thereof has been assumed by City). Project Manager is the judge of whether Work is defective.
 29. DRAWINGS: The graphic and pictorial portions of Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.
 30. EQUAL: Equal in opinion of Project Manager. Burden of proof of equality is responsibility of Contractor.
 31. EXPOSED: Work exposed to view in the finished Work, including behind louvers, grilles, registers and various other construction elements.
 32. FINAL ACCEPTANCE or FINAL COMPLETION: City's acceptance of the Work as satisfactorily completed in accordance with Contract Documents. Requirements for Final Acceptance/Final Completion include, but are not limited to:
 - a. All Systems having been tested and accepted as having met requirements of Contract Documents.
 - b. All required instructions and training sessions having been given by Contractor.
 - c. All as-built drawings, operations and maintenance manuals, and other closeout submittals having been submitted by Contractor, and reviewed and accepted by City.
 - d. All punch list work, as directed by City, having been completed by Contractor.
 - e. All Work, except Contractor maintenance after Final Acceptance,

- having been completed to satisfaction of City.
- f. See [Section 01 29 00 – Payment Procedures](#), 1.9.D regarding Final Payment.
 - g. See [Section 01 77 00 – Closeout Requirements](#).
33. FORCE ACCOUNT: Work directed to be performed without prior agreement as to lump sum or unit price cost thereof, and which is to be billed at cost for labor, materials, equipment, taxes, and other costs, plus a specified percentage for overhead and profit.
 34. FURNISH: Supply and deliver to the jobsite.
 35. INDICATED: Shown or noted on the Drawings.
 36. INSPECTOR: The person engaged by City to inspect the workmanship, materials, or manner of construction of buildings or portions of buildings, to determine if such construction complies with the Contract Documents and applicable codes.
 37. INSTALL: Anchor, fasten, or connect in place and adjust for use; place or apply in proper position and location; establish in place for use or service.
 38. LATENT: Not apparent by reasonable inspection, including but not limited to, the inspections and research required as a condition to bidding under the General Conditions.
 39. MATERIAL OR MATERIALS: These words shall be construed to embrace machinery, manufactured articles, materials of construction (fabricated or otherwise), and any other classes of material to be furnished in connection with Contract, except where a more limited meaning is indicated by context.
 40. MILESTONE: A principal event specified in Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all Work.
 41. MODIFICATION: Same as Contract Modification.
 42. NOT IN CONTRACT: Work that is outside the scope of work to be performed by Contractor under this Contract.
 43. NOTICE OF AWARD: A written notice given by City to lowest responsive, responsible bidder advising that Bidder's bid and other qualifying information is acceptable to City, requiring Bidder to fulfill the requirements of Article 4 of [Division 00 - General Conditions](#).
 44. NOTICE TO PROCEED: A written notice given by City to Contractor fixing the date on which the Contract Time will commence to run and on which contractor shall start to perform Contractor's obligations under the Contract Documents.
 45. OFF SITE: Outside geographical location of the Project.
 46. OWNER: City of Pittsburg, acting through its officers, employees, or its authorized agent.
 47. PROGRESS REPORT: A periodic report submitted by Contractor to City with progress payment invoices accompanying actual work accomplished to the Program Schedule. See [Section 01 32 16 - Construction Progress Schedule](#) and Reports required in [Division 00 - General Conditions](#).
 48. PROJECT: Total construction of which Work performed under this Contract may be whole or part.
 49. PROJECT MANUAL: Project Manual consists of Bidding Requirements, Agreement, Bonds, Certificates, Contract Conditions, Technical Specifications, and Specifications.
 50. PROVIDE: Furnish and install.

51. REQUESTS FOR INTERPRETATION ("RFI"): A document prepared by Contractor requesting interpretation, information, and/or clarification regarding the Project or Contract Documents.
52. SAMPLES: Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
53. SHOP DRAWINGS: All drawings, diagrams, illustrations, schedules and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the work.
54. SITE/JOBSITE: The particular geographical location of Work performed pursuant to Contract.
55. TECHNICAL SPECIFICATIONS: Divisions 01 through 34 – Technical Specifications, which states project-specific requirements.
56. SPECIFICATIONS: The written portion of the Contract Documents consisting of requirements for materials, equipment, construction systems, standards and workmanship for the Work, and performance of related services; and are contained in Divisions 01 through 48.
57. SPECIFIED: As written in Technical Specifications and Specifications.
58. SUBCONTRACTOR: A person or entity who has a direct contract with Contractor to perform a portion of the Work at the site. The term "subcontractor" is referred to throughout the Contract Documents as if singular in number and neuter in gender and means a subcontractor or an authorized representative of the subcontractor. The term "subcontractor" does not include a separate contractor or subcontractors of a separate contractor.
59. SUBMITTALS: Shop drawings, samples and other items specified in [Section 01 33 00 - Submittal Procedures](#).
60. SUBSTANTIAL COMPLETION: The Work (or a specified part thereof) has progressed to the point where, in the opinion of the Project Manager and Architect/Engineer and as evidenced by a Certificate of Substantial Completion, the Work is sufficiently complete, in accordance with Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended; or if no such certificate is issued, when the Work is complete and ready for final payment as evidenced by written recommendation of Project Manager and/or Architect/Engineer for final payment. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof. See [Section 01 29 00 – Payment Procedures](#), 1.8.A.2 regarding application for payment of Substantial Completion and [Section 01 77 00 – Closeout Requirements](#).
61. SUPPLEMENTAL INSTRUCTION: A written work change directive to Contractor from Project Manager or Architect/Engineer, approved by Project Manager, ordering alterations or modifications which do not result in change in Contract Sum or Contract Times, and do not substantially change Drawings, Technical Specifications, or Specifications.
62. UNDERGROUND FACILITIES: All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed

underground to furnish any of the following services or materials: Electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

63. WORK: The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents within the Contract Time. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents including the Drawings, Technical Specifications, and Specifications. Wherever the word "work" is used, rather than the word "Work", it shall be understood to have its ordinary and customary meaning.
64. WORKING DAY. A working day is defined as any day, except as follows:
- a. Saturdays, Sundays, and legal holidays
 - b. Days on which the Contractor is prevented from performing work by inclement weather or conditions resulting therefrom.

B. Wherever words "as directed", "as required", "as permitted", or words of like effect are used, it shall be understood that direction, requirements, or permission of City or Project Manager is intended. Words "sufficient", "necessary", "proper", and the like shall mean sufficient, necessary or proper in judgment of City or Project Manager. Words "approved", "acceptable", "satisfactory", or words of like import, shall mean approved by, or acceptable to, or satisfactory to, City or Project Manager.

C. Wherever the word "may" is used, the action to which it refers is discretionary. Wherever the word "shall" is used, the action to which it refers is mandatory. Where a colon (:) is used within sentences or phrases, the words "shall" or "shall be" are included by inference. Such imperative statements in the specifications are directed to the Contractor, who has overall responsibility for the subcontractors.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION 01 42 00

SECTION 01 42 13 - ABBREVIATIONS

PART 1 - GENERAL

1.1 GENERAL

- A. Wherever in these Specifications references are made to the Standards, Specifications or other published data of the various national, regional, or local organizations, such organization may be referred to by their acronym or abbreviation only. As a guide to the use of these Specifications, the following acronyms or abbreviations which may appear in these Specifications shall have the meaning indicated herein.

1.2 ABBREVIATIONS AND ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGC	Associated General Contractors
AI	The Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
APWA	American Public Works Association
AREMA	The American Railway Engineering and Maintenance-of-Way Association
ASCE	American Society of Civil Engineers
ASLA	American Society of Landscape Architects
ASME	American Society of Mechanical Engineers

ASSE	American Society of Sanitary Engineering
ASTM	American Society for Testing and Materials
AWS	American Welding Society
AWWA	American Water Works Association
BASMAA	Bay Area Stormwater Management Agencies Association
BBC	Basic Building Code, Building Officials and Code Administrators International
BFL	Bay Friendly Landscaping
CALOSHA	California Occupational Safety and Health Administration
CA MUTCD	California Manual on Uniform Traffic Control Devices
CALTRANS	State of California Department of Transportation
CBC	California Building Code
CCR	California Code of Regulations
CFC	California Fire Code
CLFMI	Chain Link Fence Manufacturer's Institute
CPC	California Plumbing Code
CRSI	Concrete Reinforcing Steel Institute
CVC	California Vehicle Code
DBE	Disadvantaged Business Enterprise
DDW	Division of Drinking Water
EIA	Electronic Industries Association
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronics Engineers
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
MSS	Manufacturers Standardization Society
NACE	National Association of Corrosion Engineers

NBS	National Bureau of Standards
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration (Federal)
PCA	Portland Cement Association
PUC	Public Utilities Commission
SSPC	Steel Structures Painting Council
STA	Seal of Testing Assurance Program
UL	Underwriters Laboratories, Inc
USCC	U S Composting Council

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION 01 42 13

SECTION 01 43 00 – QUALITY ASSURANCE

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes administrative and procedural requirements for quality assurance.
 - 1. Workmanship: Quality of work.
 - 2. Tolerances: Finished surfaces.
- B. References:
 - 1. General: Refer to [Division 00 - General Conditions](#) and [Section 01 42 00 - References](#). Products or workmanship specified in the Project Manual by association, trade, or other consensus standards shall conform to the requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
 - 2. Contractual Relationship: The contractual duties and responsibilities of the parties of the Contract and those of the Project Manager shall not be altered from the requirements of the Contract Documents by any statement or inference in any reference document.
- C. Testing: Refer to [Section 01 45 00 – Quality Control](#).

PART 2 - PRODUCTS

- 2.1 Refer to [Section 01 60 00 – Product Requirements](#); assure a consistent quality of products furnished by suppliers and manufacturers as indicated throughout the Project Manual.

PART 3 - EXECUTION

3.1 PERFORMANCE

- A. Refer to [Section 01 70 00 – Execution](#).
- B. Workmanship: Perform shop and field work with mechanics, craftspersons, artisans, and workers skilled and experienced in the fabrication and installation of work specified. Install and erect work plumb, level, square, and true, or true to indicated angle, and in proper alignment and relationship to otherwork. Finished work shall be free from defects and damage. Quality of work shall conform to the highest established standards and practices of the various trades required. The Project Manager reserves the right to reject materials and work quality which

does not meet accepted standards. Repair or replace substandard material or work as directed, at no additional cost to the City.

3.2 INSTALLATION

- A. General: Conduct quality control in concert with suppliers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Manufacturer's Instructions:
 - 1. General: Follow manufacturer's instructions, including each step in progression of installation. If manufacturer's instructions conflict with Contract Documents, request clarification from Project Manager before commencing Work.
 - 2. Installer: Manufacturer approved, as required in the technical sections of the Project Manual.
 - 3. Field Services: Coordinate with manufacturer of a product, system, or assembly which requires special knowledge and skill for proper application/installation of the product, system, or assembly to obtain field service, consultation and inspection as required for the application/installation work at no additional cost to the City.
- C. Reference Standards: Conform to specified standards as minimum quality for the Work except where more stringent codes or specified requirements indicate higher standards or more precise workmanship.
- D. Anchorage: Secure products in place with positive anchorage devices designed and sized to withstand stress, vibration, physical distortion, or disfigurement.
- E. Tolerances: Adjust products to appropriate dimensions; position before securing in place. Monitor and control tolerances of installed products to produce acceptable Work.

END OF SECTION 01 43 00

SECTION 01 45 00 – QUALITY CONTROL**PART 1 - GENERAL**

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for quality-control services.
- B. Quality-control services include inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by Owner.
- C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.
- D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
- E. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products. Refer to the following:
 - 1. [Section 03 30 00 – Utility Cast-in-place Concrete](#) - 3.9 Field Quality Control
 - 2. [Section 03 60 00 – Grouting](#) - 3.4 Field Quality Control
 - 3. [Section 31 05 13 – Clearing & Grubbing, Excavation, and Earthwork](#) – 2.5 – Source Quality Control.
 - 4. [Section 31 23 16 – Utility Trenching](#) - 3.17 Field Quality Control
 - 5. [Section 32 11 23 – Aggregate Base Courses](#) – 3.5 Field Quality Control
 - 6. [Section 32 12 16 – Asphalt Paving](#) – 1.5 Quality Control Plan & 3.13 – Field Quality Control
 - 7. [Section 32 12 17 – Asphalt Paving Rehabilitation](#) – 1.5 Quality Control Plan & 3.17 – Field Quality Control
 - 8. [Section 32 13 13 – Concrete Surface Improvements](#) – 3.5 Field Quality Control
 - 9. [Section 32 17 26 – Detectable Warning Surfacing](#) – 3.4 Field Quality Control
 - 10. [Section 33 01 30 – Testing for Sanitary Sewer, Storm Drainage – Piping and Manholes](#) – 3.3 Field Quality Control
 - 11. [Section 33 05 13 – Manholes and Structures](#) – 3.4 Field Quality Control
 - 12. [Section 33 05 17 – Precast Concrete Valve Vaults and Meter Boxes](#) – 3.4 Field Quality Control
 - 13. [Section 33 11 13 – Water Distribution Piping](#) – 3.6 Field Quality Control
 - 14. [Section 33 12 00 – Water Distribution Equipment](#) – 3.4 Field Quality Control
 - 15. [Section 33 12 13 – Water Service Connections](#) – 3.4 Field Quality Control

16. [Section 33 12 16 – Water Distribution Valves](#) – 3.4 Field Quality Control
17. [Section 33 12 19 – Water Distribution Fire Hydrants](#) – 3.4 Field Quality Control
18. [Section 33 13 00 –Disinfecting of Water Distribution](#) – 3.3 Field Quality Control
19. [Section 33 31 13 – Sanitary Sewer Piping](#) – 3.4 Field Quality Control
20. [Section 33 41 13 – Storm Drainage Piping](#) – 3.5 Field Quality Control

- F. Specified inspections, tests, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with Contract Document requirements.
- G. Requirements for Contractor to provide quality-control services required by Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.2 RESPONSIBILITIES

- A. Owner's Responsibilities: Unless otherwise indicated as the responsibility of another identified entity, the Owner shall provide inspections, tests, and other quality-control services specified elsewhere in the Contract Documents and required by authorities having jurisdiction.
- B. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Contractor's responsibility, the Contractor shall employ and pay a qualified independent testing agency to perform quality-control services. Costs for these services are included in the Contract Sum.'
- C. Where the Owner has engaged a testing agency for testing and inspecting part of the Work, and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the Owner, unless agreed to in writing by the Owner.
- D. Retesting: The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor's responsibility. Refer to [Division 00 - General Conditions, Section 7.8](#).
 1. The cost of retesting construction, revised or replaced by the Contractor, is the Contractor's responsibility and will be at no cost to the Owner where required tests performed on original construction indicated noncompliance with Contract Document requirements.
- E. Associated Services: Cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:

1. Provide access to the Work.
 2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.
 3. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
 4. Provide facilities for storage and curing of test samples.
 5. Deliver samples to testing laboratories.
 6. Provide the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
 7. Provide security and protection of samples and test equipment at the Project Site.
- F. Duties of the Owner: Owner will retain a qualified independent agency to perform inspections, sampling, and testing of materials and construction specified in individual Sections.
1. Upon receipt of notice from the testing agency, Owner will notify the Contractor promptly of irregularities or deficiencies identified in the testing Work performance.
 2. The agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.
 3. The agency shall not perform any duties of the Contractor.

1.3 SUBMITTALS

- A. Unless the Contractor is responsible for this service, the independent testing agency shall submit a certified written report, in duplicate, of each inspection, test, or similar service to the Owner. If the Contractor is responsible for the service, submit a certified written report, in duplicate, of each inspection, test, or similar service through the Contractor.
1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.
 2. Report Data: Written reports of each inspection, test, or similar service include, but are not limited to, the following:
 - a. Date of issue.
 - b. Project title and number.
 - c. Name, address, and telephone number of testing agency.
 - d. Dates and locations of samples and tests or inspections.
 - e. Names of individuals making the inspection or test.
 - f. Designation of the Work and test method.
 - g. Identification of product and Special Conditions/Specification Section.
 - h. Complete inspection or test data.
 - i. Test results and an interpretation of test results.
 - j. Ambient conditions at the time of sample taking and testing.
 - k. Comments or professional opinion on whether inspected or tested Work complies with Contract Document requirements.

- l. Name and signature of laboratory inspector.
- m. Recommendations on retesting.

1.4 QUALITY ASSURANCE

- A. Qualifications for Service Agencies: Owner will engage inspection and testing service agencies, including independent testing laboratories, that are prequalified as complying with the American Council of Independent Laboratories' "Recommended Requirements for Independent Laboratory Qualification" and that specialize in the types of inspections and tests to be performed.
 - 1. Each independent inspection and testing agency engaged on the Project shall be authorized by (authorities having jurisdiction) to operate in the state where the Project is located.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with Contract Document requirements for [Section 01 70 00 - Execution](#).
- B. Protect construction exposed by or for quality-control service activities, and protect repaired construction.

END OF SECTION 01 45 00

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS**PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section includes requirements for installation and removal of temporary facilities and controls, including temporary utilities, support facilities, and security and protection. See also, Division 00 – General Conditions, Article 7, including Sections 7.2, 7.4, and 7.9.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution.
 - 2. Temporary electric power and light.
 - 3. Temporary heat.
 - 4. Ventilation.
 - 5. Sanitary facilities, including drinking water.
 - 6. Fire protection water service.
- C. Support facilities include, but are not limited to, the following:
 - 1. Temporary enclosures.
 - 2. Temporary project identification signs and bulletin boards.
 - 3. Waste disposal services.
 - 4. Rodent and pest control.
 - 5. Signs.
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. Barricades, warning signs, and lights.
 - 2. Sidewalk bridge or enclosure fence for the site.
 - 3. Environmental protection.

1.2 SUBMITTALS

- A. Temporary Utilities: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Implementation and Termination Schedule: Within ten (10) working days of the date established for commencement of the Work, submit a schedule indicating implementation and termination of each temporary utility.
- C. Temporary Facilities Plan: Within ten (10) working days prior to scheduled installation of any temporary facility, submit a plan to the Project Manager for review and approval.

1.3 TEMPORARY FACILITIES

- A. Temporary Structures: Obtain permits for, install and maintain in safe condition, whatever scaffolds, hoisting equipment, barricades, walkways, or other temporary structures which may be required to accomplish the work on the Project. Such structures shall be adequate for the intended use and capable of safely accepting all loads that may be imposed upon them. They shall be installed and maintained in accordance with all applicable State and local codes and regulations.
- B. Temporary Heat: Provide and maintain temporary heat from an approved source whenever in the course of the Work it may become necessary for curing and drying of materials, or to warm spaces as may be required for the installation of materials or finishes.
- C. Dewatering: Provide and maintain facilities that may be required for dewatering in order that work may proceed on the Project. If it is necessary for dewatering to occur continually, have on hand whatever spare parts or equipment that may be required to prevent interruption of dewatering. If required, obtain Dewatering Permit from Delta Diablo (Sewer District) for waste discharge.
- D. Temporary Utilities: Provide and maintain all utility services necessary to perform the work under this Contract. These may include, but are not limited to, temporary electricity, water, gas, sewer and telephone, including charges and installation fees. Furnish and maintain all means of distribution of utility services required within the site to properly complete the Project.
- E. Storage: Store materials, tools, accessories, etc., only where directed by City. Keep storage area neat and clean. Security of stored items is Contractor's responsibility.
- F. Flammable Materials: When flammable materials are stored on site, take extra precautions, including clear identification.
- G. Sanitary Facilities: Provide and maintain temporary toilets and wash facilities in quantities and locations as required by CAL/OSHA and other local codes and regulations. Keep them maintained and supplied in a usable and sanitary condition at all times.
- H. Drinking Water: Provide and maintain adequate potable water stations at site until final completion of the Project.
- I. Field Office: If required by the Special Conditions, maintain an office at the Project site which will be the Contractor's headquarters for the Project. Any communications delivered to this office shall be considered as delivered to Contractor. Location and size of office shall be such that it will adequately serve

the needs of Contractor's superintendent and assistants in the performance of their duties.

- J. Removal of Temporary Facilities: Promptly remove temporary facilities when they are no longer needed for the work or for completion of the Project, mutually agreed upon by Contractor and City.
- K. Fire Hydrant: Provide site access and operational fire hydrant prior to any combustible construction on site. Fire hydrants to be relocated shall remain operational until the replacement fire hydrant is operational.

1.4 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
 - 1. Building code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police, fire department, and rescue squad rules.
 - 5. Environmental protection regulations.
- B. Standards: Comply with the following:
 - 1. NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations,"
 - 2. ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and
 - 3. NECA Electrical Design Library "Temporary Electrical Facilities."
- C. Electrical Service:
 - 1. Comply with NEMA, NECA, and UL standards and regulations for temporary electric service.
 - 2. Install service in compliance with NFPA 70 "National Electric Code" and PG&E Green Book, latest edition.
- D. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.5 SIGNS

- A. No signs may be displayed on or about City's property (except those required by law) without City's specific approval; the size, content, and location to be as specified by City.

1.6 PROJECT CONDITIONS

- A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.
- C. Use of Roadways and Walkways: Do not block or interfere with use of any existing roadway, walkway or other facility for vehicular or pedestrian traffic, from any party entitled to use it. Wherever and whenever such interference becomes necessary for the proper and convenient performance of the Work, and no satisfactory detour route exists, before beginning the interference, notify City and post signs at least 72 hours in advance of such interference, and provide a satisfactory detour, including temporary bridge if necessary, or other proper facility for traffic to pass around or over the interference. Maintain the detour in a safe and satisfactory condition as long as the interference continues, all without extra payment unless otherwise expressly stipulated in the Special Conditions. Refer to [Section 01 55 26 – Temporary Traffic Control](#).

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials. If acceptable to the Owner's Representative, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.
- B. Lumber and Plywood:
 - 1. For job-built temporary offices, shops, and sheds within the construction area, provide UL-labeled, fire-treated lumber and plywood for framing, sheathing, and siding.
 - 2. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sizes and thicknesses indicated.
 - 3. For fences and vision barriers, provide minimum 3/8-inch-thick exterior plywood.
 - 4. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch-thick exterior plywood.

- C. Gypsum Wallboard: Provide gypsum wallboard on interior walls of temporary offices.
- D. Roofing Materials: Provide UL Class A standard-weight asphalt shingles or UL Class C mineral-surfaced roll roofing on roofs of job-built temporary offices, shops, and sheds.
- E. Paint: Comply with requirements of [Section 09 90 00 – Painting and Coating](#). For sign panels and applying graphics, provide exterior-grade alkyd gloss enamel over exterior primer.
- F. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
- G. Water: Provide potable water approved by local health authorities.
- H. Open-Mesh Fencing: Provide 0.120-inch-thick, galvanized 2-inch chain link fabric fencing 6 feet high with galvanized steel pipe posts; 1-1/2 inches I.D. for line posts and 2-1/2 inches I.D. for corner posts.

2.2 EQUIPMENT

- A. General: Provide new equipment. The Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.
- B. Water Hoses: For non-potable use (construction water) provide 3/4-inch, heavy-duty, abrasion-resistant, flexible rubber hoses 100 feet long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge and backflow devices as required per City standards.
- C. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- D. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- E. Lamps and Light Fixtures: Provide general service lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.

- F. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.
- G. Temporary Offices: If required by the Special Conditions, provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.
- H. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- I. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.
- J. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
 - 1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
 - 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 - 3. Obtain easements to bring temporary utilities to the site where the Owner's

easements cannot be used for that purpose.

- B. **Water Service:** Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use. Sterilize temporary water piping prior to use in compliance with City Standards. Refer to [Section 33 13 00 - Disinfecting of Water Distribution](#).
- C. **Temporary Electric Power Service:** Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnects, automatic ground-fault interrupters, and main distribution switchgear. Install wiring overhead and rise vertically where least exposed to damage.
- D. **Temporary Lighting:** When overhead floor or roof deck has been installed, provide temporary lighting with local switching. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.
- E. **Temporary Heat:** Provide temporary heat required by construction activities for curing or drying of completed installations or for protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy. Ventilate enclosed areas to achieve curing of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- F. **Heating Facilities:** Except where the Owner authorizes use of the permanent system, provide vented, self-contained, LP-gas or fuel oil heaters with individual space thermostatic control.
- G. **Sanitary Facilities:** Provide lockable temporary toilets and wash facilities. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs. Locate away from storm drainage inlets and other water bodies. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.

3.3 SUPPORT FACILITIES INSTALLATION

- A. Locate field offices, storage sheds, and other temporary construction and support facilities for easy access. Location will be subject to City's approval.
- B. Provide incombustible construction for offices, shops, and sheds located within the construction area or within 30 feet of building lines. Comply with requirements of NFPA 241.

- C. Field Offices: Provide insulated, weather tight temporary offices of sufficient size to accommodate required office personnel at the Project Site. Keep the office clean and orderly for use for small progress meetings.
- D. Storage and Fabrication Sheds: Install storage and fabrication sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on-site.
- E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
 - 1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 - 2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 square feet or less with plywood or similar materials.
 - 3. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
- F. Temporary Exterior Lighting: Install exterior yard and sign lights so signs are visible when Work is being performed.
- G. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.
- H. Rodent and Pest Control: Before deep foundation work has been completed, retain an Integrated Pest Management (IPM) Certified exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using EPA recommended environmentally safe materials.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
 - 1. Locate fire extinguishers where convenient and effective for their intended

- purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
2. Store combustible materials in containers in fire-safe locations.
 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
 4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
- B. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
- C. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- D. Enclosure Fence: Before construction begins, install an enclosure fence with lockable entrance gates. Provide open-mesh, chain link fencing with posts. Locate where indicated, or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates.
- E. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- F. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site. Contractor is responsible for locking, and any vandalism, theft, unauthorized access and violation are Contractor's responsibility.

3.5 SIGNS

- A. Project Construction Sign: Provide minimum 32-square foot Project identification sign of wood frame and exterior grade plywood construction painted, with exhibit lettering by professional sign painter.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are the Contractor's property.
 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at the temporary entrances, as required by the governing authority.
 3. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts subject to unusual operating conditions.
 - c. Replace lamps burned out or noticeably dimmed by hours of use.

END OF SECTION 01 50 00

SECTION 01 55 26 – TEMPORARY TRAFFIC CONTROL**PART 1 - GENERAL**

1.1 SUMMARY

- A. Section Includes: temporary traffic control system including preparing and submitting temporary traffic control, pedestrian and bicycle access plans, temporary traffic signal, traffic control for utility trenching and backfill, utility coordination, vehicular traffic control, traffic control for adjacent property owners, traffic control for on-street parking, traffic control for bus stops and coordination with Tri Delta transit, maintaining traffic, temporary railing (type K), temporary crash cushion module, construction area signs, and temporary signing and striping.
- B. All temporary traffic control plans including temporary pedestrian and bicycle access plans submitted by the Contractor shall conform to California Manual of Uniform Traffic Control Devices (CA MUTCD) – Latest Edition.

1.2 REFERENCES

- A. California Manual of Uniform Traffic Control Devices (CA MUTCD) – Latest Edition.
- B. Cal/OSHA – California Division of Occupation Safety and Health
- C. Caltrans Standard Specifications
 - 1. Section 7 – Legal Relations and Responsibility to the Public
 - 2. Section 12 – Temporary Traffic Control

1.3 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.

PART 2 – (NOT USED)**PART 3 – EXECUTION**

3.1 TEMPORARY TRAFFIC CONTROL SYSTEM

- A. A temporary traffic control system shall consist of closing traffic lanes in conformance with the CA MUTCD, details shown on the Drawings, the provisions in Section 12, “Temporary Traffic Control”, of the State Standard Specifications, the provisions under “Maintaining Traffic”, and “Construction Area Signs” of the State Standard Specifications and the General Conditions, Special Conditions, and Technical Specifications.

- B. The provisions in this section will not relieve the Contractor of responsibility for providing additional devices or taking measures as may be necessary to comply with the provisions in Section 7-1.04, "Public Safety," of the State Standard Specifications and CA MUTCD.
- C. During traffic striping and pavement marker placement activities using bituminous adhesive, traffic shall be controlled, at the option of the Contractor, with either stationary or moving lane closures. During other operations, traffic shall be controlled with stationary lane closures. Attention is directed to the provisions in Section 12-6.03, "Construction," of the State Standard Specifications.
- D. If components in the traffic control system are displaced or cease to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair the components to the original condition or replace the components and shall restore the components to the original location.
- E. A traffic control system shall consist of closing traffic lanes in accordance with the details shown on T-9 through T-17 of the latest edition of the Caltrans Standard Plans, California Manual of Uniform Traffic Control Devices (CA MUTCD), the contract plans, the provisions of Section 12, "Temporary Traffic Control" of the State Standard Specifications and the General Conditions, Special Conditions, and Technical Specifications.
- F. Each vehicle used to place, maintain, and remove components of a traffic control system on multilane roadways shall be equipped with a Type II flashing arrow sign which shall be in operation when the vehicle is being used for placing, maintaining, or removing said components. The sign shall be controllable by the operator of the vehicle while the vehicle is in motion.
- G. The location of temporary traffic control devices shall be checked by the Contractor especially at the beginning of the work period and periodically throughout the work day, to ensure that the devices are properly placed and maintained.
- H. 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 notify the Project Manager and repair the said component to its original condition or replace said component and shall restore the component to its original location. The cost of providing temporary traffic control as required by the Project Manager shall be considered as included in the cost of traffic control. No additional compensation will be allowed therefor.
- I. The Contractor shall furnish competent Flaggers whose sole duties shall consist of directing the movement of traffic through or around the work. Flaggers shall not be used during the hours of darkness unless authorized by the City.
- J. The Contractor shall conduct all operations with the least possible obstruction and inconvenience to the public. The Contractor shall have under construction no greater length or amount of work than can be completed within a workday with due regards to the rights of the public.

- K. The Contractor shall provide and maintain all traffic control and safety items. The Contractor assumes sole and complete responsibility for the job and site conditions during the course of construction, including safety of all persons and property. This requirement shall apply continuously twenty-four (24) hours/day and shall not be limited to normal work hours.
- L. Personal and work vehicles of the Contractor, subcontractor or the Contractor's employees shall not be parked on the paved shoulders, sidewalk or the traveled way, including any section closed to public traffic. No vehicles of the Contractor shall be parked or driven on the sidewalk.
- M. All personnel occupying the roadway shall be required to wear approved safety vests with protective coloration.
- N. The Contractor shall notify local authorities of his intent to begin work at least five (5) working days before work is begun. The Contractor shall cooperate with local authorities relative to handling traffic through the area and shall make his own arrangements relative to keeping the working area clear of parked vehicles.
- O. Upon completion of all work requiring use of lane closures, the Contractor shall remove all temporary signs, barricades, and markers and shall return the roadway and roadside areas to a condition equal to that which existed prior to construction.
- P. All asphalt concrete and temporary pavement delineations including pavement markers at the end of each stage shall be considered as a part of Traffic Control work.
- Q. No full road closures are allowed unless approved by the City Manager.
- R. No lane closures will be allowed on weekdays from 6:00 AM to 8:30 AM, or from 3:00 PM to 6:00 PM, except for emergencies or unless otherwise approved by the City Traffic Engineer.
- S. The full width of the traveled way shall be open for use by public traffic on Fridays after 3:00pm, Saturdays, Sundays and designated legal holidays, and when construction operations are not actively in progress.
- T. Two or more lane closures and lane closures with reversible control will not be allowed on weekdays before 9:00 AM, or after 3:00 PM.
- U. The lane closure(s) must be limited in duration and area as practicable and the times and dates of closure must be stated on the approved temporary traffic control plan.
- V. Lane closures and lane reduction shall conform to the provisions in "Maintaining Traffic" of the State Standard Specifications and the CA MUTCD.
- W. When lane closures are made for work periods only, at the end of each work period, all components of the traffic control system, except temporary portable delineators, K-rails and crash cushions placed along open trenches or excavation

adjacent to the traveled way shall be removed from the traveled way and shoulder.

- X. To minimize the disruption to traffic, the Contractor shall:
 - 1. Permit local traffic to pass through the work with the least possible inconvenience or delay.
 - 2. Maintain existing driveways, commercial and residential, within the vicinity of the work area, keeping them open and in good, safe condition at all times.
 - 3. Remove or repair any condition resulting from the work that might impede traffic or create a hazard.
 - 4. Keep existing traffic signal and roadway lighting systems in operation throughout the construction work.
 - 5. Maintain continuous ADA accessible pedestrian and bicycle routes.

3.2 TEMPORARY TRAFFIC CONTROL, PEDESTRIAN AND BICYCLE ACCESS PLANS

- A. The Contractor shall provide a Temporary Traffic Control, Pedestrian and Bicycle Access Plans for each stage of construction and for each location. Traffic control plan shall be site specific and stamped by a California licensed Civil/Traffic Engineer.
- B. Temporary Traffic Control, Pedestrian and Bicycle Access Plans will be hand drawn and legible with an approximate graphic scale.
- C. Temporary Traffic Control, Pedestrian and Bicycle Access Plans will show all temporary striping, cones, barricades, channelizers, signs, flaggers, temporary k-rail, crash cushion modules; temporary turn pockets, dimensions of all stripe segments and lane widths, street names, temporary signal modifications, temporary traffic loops, portable changeable message signs, detour signs, construction area signs on all side streets, construction schedule, work hours and all times the temporary traffic control plan will be in effect.
- D. Temporary Traffic Control, Pedestrian and Bicycle Access Plans will also show continuous pedestrian and bicycle path of travel arrows, pedestrian and bicycle signage, pedestrian ADA ramps, bike ramps, temporary pedestrian crosswalks, temporary bike crossings, temporary pedestrian push buttons for signals, pedestrian and bicycle signage on all side streets, pedestrian and bicycle crossing signs, and areas for temporary ADA upgrades along the pedestrian path of travel.
- E. Temporary Traffic Control, Pedestrian and Bicycle Access Plans will be submitted to the City Traffic Engineer two (2) weeks prior to commencement of each stage of construction. The Temporary Traffic Control, Pedestrian and Bicycle Access Plans shall be reviewed by the City Traffic Engineer. Contractor to incorporate all comments from the City Traffic Engineer and resubmit the plans for approval prior to implementation. Assume two (2) rounds of review and resubmittal for each stage of construction.
- F. Once any segment of sidewalk or trail or corner is commenced with sawcut and/or

any segment of sidewalk/trail is closed to pedestrians and bicyclists, Contractor will backfill and complete the improvements unless an approved detour plan is provided and approved by the City Traffic Engineer.

3.3 TRAFFIC SIGNAL

- A. If traffic signal inductive vehicle loop detectors and lead-in wiring not designated to be replaced on the Plans are damaged during the course of the construction period, they shall be replaced within one (1) week or as directed by the Project Manager. The cost of replacing damaged loop detectors including detector handholes or any other necessary repairs to the components of the traffic signal system shall be included in the cost of traffic control. No additional compensation will be allowed therefor.

3.4 UTILITY COORDINATION

- A. Contractor shall notify the utility companies as a first order of work about the project and submit a detailed project schedule to all utility companies.
- B. Each stage of construction shall allow for utility companies to complete their work. If Utility company's utilities are to be constructed, adjusted or relocated, the Contractor shall provide four (4) week window during each stage of construction for utility companies to have unobstructed access to the site. This four (4) week period will likely occur after demolition and setting of curb forms by the Contractor. The related utility work shall be coordinated with the utility companies prior to the two (2) week window. The Contractor shall also allow utility companies to work on site during the remaining time of each construction stage.
- C. The construction schedule shall identify the related utility work during each stage and shall be submitted for approval. Changes during construction that will impact the related utility work shall be identified on the Progress Schedule.
- D. The Contractor shall notify to the utility companies and the Project Manager immediately of any changes to the schedule.

3.5 TEMPORARY TRAFFIC CONTROL FOR UTILITY TRENCHING & BACKFILL

- A. All excavations shall be backfilled or covered at the end of each workday. Trench covers will be constructed to withstand pedestrian, bicyclist and vehicle loads. Trench covers in the vehicle areas will be steel plated to withstand vehicle loads. All trench covers shall be non-skid. In sidewalk areas, AC cutback shall be used as temporary ramps. Contractor shall maintain temporary AC surface to provide safe and comfortable passage over or along same, for pedestrian, bicyclist and vehicular traffic to the satisfaction of the Inspector in the field. Items which will require trench plates include, but are not limited to: storm drain, sewer, water main trenches, and irrigation crossings. Contractor to submit shop drawings to demonstrate method of trench plating, anchoring and asphalt tapers.
- B. The Contractor shall comply with the provisions in Section 7-1.02K(6),

"Occupational Safety and Health Standards" of the State Standard Specifications.

- C. Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately by the Contractor. The Contractor shall leave the project site in a neat, clean, and presentable state at the close of every workday.
- D. If material from the trench excavation spills onto the roadway, the roadway area shall be swept and washed with water to provide a safe and dust free surface before the lane is re-opened.
- E. The Contractor shall conform to the order of work requirements described on the plans and specifications. If the work items are not completed by the time specified, including any extension of time for excusable delays, the Contractor shall be liable to the City for any additional cost incurred by the City in its completion of the work, and the Contractor shall also be liable to the City for liquidated damages for any delay in the completion of the work.

3.6 TRAFFIC CONTROL FOR ADJACENT PROPERTY OWNERS

- A. A. The Contractor shall notify residents/businesses within a closed section by door hanger of sidewalk closures stating the date(s) of closure, limits of sidewalk closure, hours of construction, and detours. The door hangers shall be delivered no later than two (2) working days prior to sidewalk closure. Prior to dissemination, the Contractor shall present a copy to the Project Manager and get approval from the Project Manager for the door hanger.
- B. Work shall be accomplished in such a manner as to provide access to all intersecting streets and adjacent properties whenever possible. If during the course of the work, it is necessary to restrict access to certain driveways for an extended period of time, the Contractor shall
 - 1. Notify the affected residents, in writing, at least two (2) working days in advance.
 - 2. Provide signage and provide continuous Flaggers to direct traffic in and out of the parking.
 - 3. Maintain 11' minimum width.
 - 4. Reopen driveway by the end of the work day.
 - 5. Include the signage and Flaggers on the Traffic Control and Pedestrian Access Plans.
- C. To protect the rights of abutting property owners, the Contractor shall
 - 1. Conduct the construction so that the least inconvenience as possible is caused to abutting property owners.
 - 2. Maintain ready access to houses or businesses along the line of work, including ramps over work area.
 - 3. Notify all parties at least five (5) days, and again two (2) working days, in advance of work which would affect their property. The Contractor shall coordinate with City to obtain Right of Entry for any work within private property.

4. The Contractor shall maintain access to adjacent private property at all times, and shall address driveway access on approved Traffic Control Plans.
5. For Utility company and Developer projects, permittee shall obtain right of entry for any work in private properties.
6. The Contractor shall maintain safe pedestrian and bicycle access at all times, including crosswalks, when it is required to close sidewalks.
7. Contractor shall provide Temporary Pedestrian and Bicycle Access Plan for any change in pedestrian and bicycle movements. All openings shall be covered or steel plated at the end of each workday, when working in an intersection and traffic lane. Covers in pedestrian areas shall be non-skid and ADA compliant. Contractor shall maintain temporary AC surface to provide safe and comfortable passage over or along same, for pedestrian, bicyclist and vehicular traffic to the satisfaction of the Inspector in the field.
8. The Contractor shall provide temporary pedestrian bridges and walkways as shown on Contractor's approved Temporary Traffic Control Plans. Temporary pedestrian bridges shall be provided to each affected doorway.

3.7 TRAFFIC CONTROL FOR ON-STREET PARKING:

- A. To maintain On-Street parking, the Contractor shall provide temporary signs for any existing On-Street parking closure and coordinate with adjacent businesses. Contractor shall restripe the existing On-Street Parking impacted by construction in-kind as required by the Project Manager within the project limits.
- B. The Contractor shall post City approved parking restrictions a minimum two (2) working days before work begins. All legal parking areas must be maintained and access to legally parked vehicles doors and storage areas must be maintained.
- C. Parking restrictions must be limited in time as practicable.

3.8 TRAFFIC CONTROL FOR BUS STOPS AND COORDINATION WITH TRANSIT AGENCY (TRI DELTA TRANSIT)

- A. If construction shall obstruct a bus stop, the Contractor shall notify the Transit Agency two (2) working days in advance. The Contractor shall be responsible for providing temporary bus stop with temporary bench, bus stop signs posts and no parking signs at locations specified by Transit Agency within a distance of maximum of 400' from existing bus stop.
- B. The Contractor shall be responsible for providing adequate safeguards, safety devices, protective equipment, and any other needed actions to protect life, health, and safety of the public, and to protect property in connection with the performance of the work covered by the contract. The Contractor shall perform any measures or actions the Project Manager may deem necessary to protect the public and property. Contractor shall install K-rail at all new bus stop pad construction areas.

3.9 MAINTAINING TRAFFIC

- A. Maintaining traffic shall conform to CA MUTCD, the provisions in Sections 7-1.03, "Public Convenience," Section 7-1.04, "Public Safety," and Section 12, "Temporary Traffic Control," of the State Standard Specifications, and the City Standard Specifications.
- B. Closure is defined as the closure of a traffic lane or lanes, including shoulder, ramp or connector lanes, within a single traffic control system.
- C. The full width of the traveled way shall be open for use by public traffic as specified in Part 3.1 above, when construction operations are not actively in progress.
- D. Personal and work vehicles of the Contractor, subcontractor or the Contractor's employees shall not be parked on the traveled way or shoulders including sections closed to public traffic.
- E. The Contractor shall immediately restore to the original position and location a temporary traffic cone or delineator that is displaced or overturned, during the progress of work.
- F. If minor deviations from the Contractor's approved lane closure requirements are required, a written request shall be submitted to the City Traffic Engineer at least 15 days before the proposed date of the closure. The City Traffic Engineer may approve the deviations if there is no increase in the cost to the City and if the work can be expedited and better serve the public traffic.
- G. Designated legal holidays are:

Holidays

Holiday	Date observed
New Year's Day	January 1 st
Martin Luther King Jr. Day	3 rd Monday in January
Lincoln's Birthday	February 12 th
Washington's Birthday	3 rd Monday in February
Cesar Chavez Day	March 31 st
Memorial Day	Last Monday in May
Independence Day	July 4 th
Labor Day	1 st Monday in September
Columbus Day	2 nd Monday in October
Veterans Day	November 11 th
Thanksgiving Holidays	4 th Thursday and Friday in November
Christmas Day	December 25 th

If a designated holiday falls on a Sunday, the following Monday is a designated holiday. If November 11th falls on a Saturday, the preceding Friday is a designated holiday.

- H. Pedestrian and Bicycle access facilities shall be provided through construction

areas within the public right of way as shown on the Contractor's approved Temporary Traffic control, Pedestrian and Bicycle Access plans and as specified herein. Pedestrian walkway shall be surfaced with asphalt concrete, Portland cement concrete or timber. The surface shall be skid resistant and free of irregularities. Hand railings shall be provided on each side of pedestrian walkways as necessary to protect pedestrian traffic from hazards due to construction operations or adjacent vehicular traffic. Protective overhead covering shall be provided as necessary to insure protection from falling objects and drip from overhead structures. If the Contractor's operations require the closure of one walkway, then another walkway shall be provided nearby, off the traveled roadway.

3.10 CONTINGENCY PLAN: A detailed contingency plan shall be prepared for reopening closures to public traffic. The contingency plan shall be submitted to the Project Manager within one (1) business day of the Project Manager's request.

3.11 LATE REOPENING OF CLOSURES

- A. If a closure is not reopened to traffic by the specified time, work shall be suspended in conformance with the provisions in Section 8-1.06, "Suspensions" of the State Standard Specifications. No further closures are to be made until the City Traffic Engineer has accepted a work plan, submitted by the Contractor that will insure that future closures will be reopened to traffic at the specified time. The City Traffic Engineer will have two (2) business days to accept or reject the Contractor's proposed work plan. The Contractor will not be entitled to compensation for the suspension of work resulting from the late reopening of closures.
- B. For each 10-minute interval, or fraction thereof past the time specified to reopen the closure, City will deduct payments per interval from moneys due or that may become due the Contractor under the contract. See deductible schedule below:
 - 1. Residential Streets - \$50 per 10 minutes
 - 2. Collector Streets - \$100 per 10 minutes
 - 3. Arterial Streets - \$400 per 10 minutes.

3.12 TEMPORARY RAILING (TYPE K)

- A. Temporary railing (Type K) shall be placed as shown on the Contractor's approved Temporary Traffic Control, Pedestrian and Bicycle Access plans, as specified in the Drawings or where ordered by the Project Manager and shall conform to CA MUTCD, the provisions in Section 12, "Temporary Traffic Control" of the State Standard Specifications and the City Standard Specifications.
- B. Temporary railing (Type K) shall consist of interconnected new or undamaged used precast concrete barrier units as shown on the Contractor's approved Temporary Traffic Control, Pedestrian and Bicycle Access plans. Exposed surfaces of new and used units shall be freshly coated with a white color paint prior to their first use on the project. The paint shall conform to the provisions in

Section 91-4.02B, "Acrylic Emulsion Paint for Exterior Masonry" of the State Standard Specification.

- C. Concrete shall conform to the provisions in Section 90-2, "Minor Concrete" of the State Standard Specifications. Load tickets and a Certificate of Compliance will not be required.
- D. Reinforcing steel shall conform to the provisions in Section 52, "Reinforcement" of the State Standard Specifications.
- E. Steel bars to receive bolts at ends of concrete panels shall conform to the requirements in ASTM Designation: A 36. The bolts shall conform to the requirements in ASTM Designation: A 307.
- F. The final surface finish of temporary railings (Type K) shall conform to the provisions in Section 51-1.03F(2), "Ordinary Surface Finish" of the State Standard Specifications. Exposed surfaces of concrete elements shall be cured by the water method, the forms in place method, or the pigmented curing compound method. The pigmented curing compound shall be curing compound (1) as specified in Section 90-1.03B(3), "Curing Compound Method" of the State Standard Specifications. The Contractor shall furnish a Certificate of Compliance to the Project Manager in conformance with the provisions in Section 6-2.03C "Certificates of Compliance" of the State Standard Specification, for all new or used temporary railing (Type K) that is not cast on the project.
- G. Temporary railing (Type K) shall be set on firm, stable foundation. The foundation shall be graded to provide a uniform bearing throughout the entire length of the railing. Any excavation and backfill shall conform to the provisions in Section 19-3, "Structure Excavation and Backfill" of the State Standard Specification except that compaction of earth fill placed behind the temporary railing (Type K) in a curved layout will not be required.
- H. Abutting ends of precast concrete units shall be placed and maintained in alignment without substantial offset to each other. The precast concrete units shall be positioned straight on tangent alignment and on a true arc on curved alignment.
- I. At the locations required on the plans, threaded rods or dowels shall be bonded in holes drilled in the existing concrete. Drilling of holes and bonding of threaded rods or dowels shall conform to the provisions for bonding dowels in Section 83-3.01A, "Summary" of the State Standard Specifications. After removal of the temporary railing (Type K), all threaded rods or dowels shall be removed to a depth of at least one inch below the surface of the concrete. The resulting holes shall be filled with mortar in conformance with the provisions in Section 51-1.02F, "Mortar" of the State Standard Specification, except that the mortar shall be cured by either the water method or by the curing compound method. If the curing compound method is used, the curing shall conform to the provisions for curing concrete barrier in Section 83-3.03A(8), "Curing" of the State Standard Specifications.
- J. Each rail unit shall have a reflector installed on top of the rail. Reflectors shall be

as specified in the technical specifications, and adhesive shall conform to the reflector manufacturer's recommendations. A Type P marker panel shall also be installed at each end of railing installed adjacent to a two lane, two-way highway and at the end facing traffic of railing installed adjacent to a one-way roadbed. If the railing is placed on a skew, the marker shall be installed at the end of the skew nearest the traveled way. Type P marker panels shall conform to the provisions in Section 82, "Signs and Markers" of the State Standard Specifications, except that the Contractor shall furnish the marker panels.

- K. When temporary railings (Type K) are removed, any area where temporary excavation or embankment was used to accommodate the temporary railing shall be restored to its previous condition or constructed to its planned condition.
- L. Prior to each stage of construction Contractor will provide a layout of the proposed temporary railing, crash cushion locations, and temporary striping/signing for the railing.
- M. Water filled barriers will be considered in lieu of temporary railings (Type K), upon a written request from the contractor along with proposed details, layout plan, temporary signing & striping and installation.

3.13 TEMPORARY CRASH CUSHION MODULE

- A. This work shall consist of furnishing, installing, and maintaining sand filled temporary crash cushion modules in groupings or arrays at each location shown on the Contractor's approved traffic control plans, as specified in the technical specifications or where designated by the Project Manager. The grouping or array of sand filled modules shall form a complete sand filled temporary crash cushion in conformance with the details shown on the plans and the technical specifications.
- B. Temporary crash cushions shall be secured in place prior to commencing work for which the temporary crash cushions are required.
- C. Whenever the work or the Contractor's operations establishes a fixed obstacle, the exposed fixed obstacle shall be protected with a sand filled temporary crash cushion. The sand filled temporary crash cushion shall be in place prior to opening the lanes adjacent to the fixed obstacle to public traffic.
- D. Sand filled temporary crash cushions shall be maintained in place at each location, including times when work is not actively in progress. When no longer required, as determined by the Project Manager, sand filled temporary crash cushions shall be removed from the site of the work.
- E. Modules contained in each temporary crash cushion shall be of the same type at each location. The color of the modules shall be the standard yellow color, as furnished by the vendor, with black lids. The modules shall exhibit good workmanship free from structural flaws and objectionable surface defects. The modules need not be new. Good used undamaged modules conforming to color and quality of the types specified herein may be utilized.

- F. Modules shall be filled with sand in conformance with the manufacturer's directions, and to the sand capacity in pounds for each module shown on the plans. Sand for filling the modules shall be clean washed concrete sand of commercial quality. At the time of placing in the modules, the sand shall contain no more than 7 percent water as determined by California Test 226.
- G. Modules damaged due to the Contractor's operations shall be repaired immediately by the Contractor at the Contractor's expense. Modules damaged beyond repair, as determined by the Project Manager, due to the Contractor's operations shall be removed and replaced by the Contractor at the Contractor's expense.
- H. A Type R or P marker panel shall be attached to the front of the crash cushion. The marker panel, when required, shall be firmly fastened to the crash cushion with commercial quality hardware or by other methods determined by the Project Manager.
- I. At the completion of the project, temporary crash cushion modules, sand filling, pallets or frames, and marker panels shall become the property of the Contractor and shall be removed from the site of the work. Temporary crash cushion modules shall not be installed in the permanent work.
- J. Repairing modules damaged by public traffic and modules damaged beyond repair by public traffic, when ordered by the Project Manager, shall be removed and replaced immediately by the Contractor. Modules replaced due to damage by public traffic will not be measured and paid for and shall be considered as included in the lump sum price paid for Temporary Traffic Control.
- K. Include allowance for Project Manager to order a lateral move of the sand filled temporary crash cushions where the repositioning is not shown on the Contractor's approved traffic control plans. Moving the sand filled temporary crash cushion will be considered as included in the lump sum price paid for Temporary Traffic Control and no additional compensation will be allowed therefor and these temporary crash cushion modules will not be counted for payment in the new position.

3.14 CONSTRUCTION AREA SIGNS

- A. Construction area signs shall be furnished, installed, maintained, and removed when no longer required in accordance with CA MUTCD, the provisions in Section 12-3.11, "Construction Area Signs," of the State Standard Specifications, the contract drawings, and the General Conditions, Special Conditions, and Technical Specifications. The base material of construction area signs shall not be plywood. This includes but not limited to furnishing and installation of Pedestrian and Bicycle Signs.

END OF SECTION 01 55 26

SECTION 01 56 10 – PROTECTION OF PROPERTY**PART 1 - GENERAL**

1.1 SUMMARY

- A. Section Includes:
 - 1. Existing Utilities and Improvements
 - 2. Safeguarding of Existing Facilities
 - 3. Restoration of Pavement
 - 4. Emergency Work
 - 5. Preconstruction Site Documentation
- B. Related Sections:
 - 1. [Section 01 50 00 – Temporary Facilities and Controls](#)
 - 2. [Section 01 32 00 – Construction Progress Documentation](#)

1.2 EXISTING UTILITIES AND IMPROVEMENTS

- A. Underground Facilities: Notify Underground Service Alert (U.S.A.) prior to excavating at the site so that utility companies and other City departments having underground facilities in the area may be advised of the work and may field mark or otherwise protect and warn Contractor of their existing utility lines.
 - 1. Provide reasonable access and do not hinder or otherwise interfere with any company or agency having underground facilities in removing, relocating, or protecting such facilities.
- B. Excavations: Verify the actual locations and depths of all utilities indicated or field marked. Make a sufficient number of exploratory excavations of all utilities that may interfere with the Work sufficiently in advance of construction to avoid possible delays to Contractor's work.
 - 1. Notify the City when such exploratory excavations show the utility location as shown or as marked to be in error.
 - 2. When utility lines are encountered within the area of Contractor's operations, notify the Project Manager and the Owner(s) of the utility lines sufficiently in advance for the necessary protection measures to be taken to prevent interruption of service or delay to Contractor's operations.

1.3 SAFEGUARDING OF EXISTING FACILITIES

- A. Damage: Perform all work, including dewatering operations, in such a manner as to avoid damage to existing sewer and water systems, fire hydrants, power poles, lighting standards, and all other existing utilities, facilities, trees and vegetation, and structures. The Contractor will be held responsible for any damage due to its failure to exercise due care, and at no cost to the City.

- B. Removal and Disposal: Broken concrete, debris, and the like, shall be immediately removed from the property site as the Contractor's property and disposed of in a legal manner.
- C. Existing Facilities: Exercise due care to avoid damage to existing pipe and coating, wrapping, sewers, conduit, or other existing facilities and structures. Should the Contractor damage or displace any of the above, repair same to the satisfaction of the Project Manager; all expenses in connection therewith shall be borne solely by the Contractor.
- D. Sewer System: Do not allow debris to enter the sewer system.

1.4 RESTORATION OF PAVEMENT

- A. General: All paved areas cut or damaged during construction shall be replaced with materials of equal thickness to match the existing undisturbed areas, except where specific resurfacing requirements are called for in the Contract Documents or in the permit requirements of the agency issuing the permit. All pavements which are subject to partial removal shall be neatly saw cut in straight lines.
- B. Temporary Resurfacing: Place temporary surfacing promptly after backfilling and maintain such surfacing in a satisfactory condition for the period of time before proceeding with the final restoration.
- C. Permanent Resurfacing: Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in neat straight lines. All pavement restoration shall be constructed to finished grades compatible with undisturbed adjacent pavement.
- D. Restoration of Sidewalks or Driveways: Wherever sidewalks, curbs and gutters, or driveways have been removed for construction purposes, place suitable temporary sidewalks, curbs and gutters, or driveways promptly after backfilling and maintain them in satisfactory condition for the period of time before the final restoration has been made.

1.5 EMERGENCY WORK

- A. General: At all times have adequate personnel, materials, and equipment available at short notice to protect adjoining property, maintain, or make emergency repairs. If during the progress of the Contract, the Contractor's construction crews should be absent from the location of the work at a time when any failure or faulty condition of the Contractor's work requires emergency action in the public interest, the City shall have the right to make repairs and corrections as required with its own forces at the Contractor's expense.
- B. Contact Information: Furnish the Project Manager with names and telephone numbers of at least three (3) persons to contact in case of emergencies; these

persons shall be authorized to perform such work as deemed necessary by the Project Manager.

1.6 PRECONSTRUCTION SITE DOCUMENTATION

- A. Prevention of Damage: Use such methods and take adequate precautions to prevent damage to existing buildings, structures, and other improvements during the prosecution of the work.
- B. Joint Examination: After the Contract is awarded and before the commencement of work, the Project Manager will arrange for a joint examination of the work, as applicable, which might be damaged by the Contractor's operations
- C. Scope of Examination: The examination will include the exterior of existing buildings, structures, and other improvements located within twenty-five (25) feet of the construction excavation. Examination will be made jointly by authorized representatives of the Contractor, the City, and property owners under the supervision of the Project Manager. The scope of each examination will include, but is not limited to, written and photographic recording of cracks in structures, settlement, leakage, and the like.
- D. Photos and Videos: Take photos and videos during the joint examination review. Provide digital photos and videos to the Project Manager within thirty (30) consecutive days of the date taken.
- E. Use of Records and Photographs: Any and all records and photographs are intended for use as indisputable evidence in ascertaining the extent of any damage which may occur as a result of the Contractor's operations. They are for the protection of the adjacent property owners, the Contractor, and the City and will be a means of determining whether and to what extent damage, resulting from the Contractor operations, occurred during the Contract Work.
- F. Requirements for Photographs and Videos: Refer to [Section 01 32 00 – Construction Progress Documentation](#).

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION 01 56 10

SECTION 01 57 23 – STORM WATER POLLUTION PREVENTION**PART 1 - GENERAL**

1.1 SUMMARY

- A. Section Includes: requirements for temporary utilities, support facilities, storm water pollution prevention, erosion control, traffic control, support, and security and protection facilities.
- B. Projects that have a soil disturbance of one acre or greater are subject to the State Water Resources Control Board's (SWRCBs) Construction General Permit. The appropriate Legally Responsible Person (LRP), or approved representative must obtain coverage by filing the Permit Registration Documents (PRDs) prior to commencement of any construction activity. A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared by a Qualified SWPPP Developer (QSD) and submitted to the City prior to issuance of a grading permit. Contractor shall comply with all requirements of SWRCBs Construction General Permit Order No. 2009-0009-DWQ, and amended Orders 2010-0014-DWQ, and 2012- 0006-DWQ.
- C. Projects that are less than one acre and are Caltrans related (State Highway Projects) are required to have a Water Pollution Control Plan (WPCP) prepared in accordance with Caltrans' standard WPCP template.
- D. Projects that are less than one acre and are not Caltrans related are required to have an Erosion and Sedimentation Control Plan prepared and submitted to the City for approval prior to issuance of a grading permit.

1.2 PRICE AND PAYMENT PROCEDURES

- A. [Section 01 29 00 - Payment Procedures](#)
- B. Notice of Intent (NOI) and Annual Permit Fees for Capital Improvement Projects shall be paid by the City.
- C. The Developers shall pay all associated Construction General Permit (CGP) fees for all new development/redevelopment projects requiring a permit from the City.

1.3 REFERENCES:

- A. California Stormwater Quality Association (CASQA) has developed a standard SWPPP template for traditional Risk 1,2, and 3 projects that is prevalent in California and can be downloaded from www.CASQA.org. (Note: An annual subscription is required to access to access the CASQA construction portal.)
- B. SWPPP: The Stormwater Pollution Prevention Plan (SWPPP) shall be designed

to comply with California's General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit) Order No. 2009-0009-DWQ as amended by Order No. 2010-0014-DWQ (NPDES No. CAS000002) and 2012-0006-DWQ, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity (herein after referred to as General Permit) issued by the State Water Resources Control Board (State Water Board). In accordance with the General Permit, Section XIV, designed to address the following:

1. Pollutants and their sources, including sources of sediment associated with construction, construction site erosion and other activities associated with construction activity are controlled.
2. Where not otherwise required to be under a Regional Water Quality Control Board (Regional Water Board) permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated.
3. Site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology/Best Control Technology (BAT/BCT) standard.
4. Calculations and design details as well as BMP controls are complete and correct.
5. Stabilization BMPs will be installed to reduce or eliminate pollutants after construction is completed.

1.4 SUBMITTALS

A. Notice of Intent (NOI): The Legally Responsible Person shall file the Notice of Intent (NOI) and submit all PRDs to the SWRCB prior issuance of a grading permit. For City Capital Improvement Projects, the Contractor shall file the NOI and submit all PRDs to the SWQRB on behalf of the City. Contractor to obtain the Waste Discharge Identification Number (WDID #) on behalf of the City, or as otherwise directed by the City Engineer.

B. SWPPP:

1. Contractor shall submit SWPPP for Project Manager's review within ten (10) calendar days after award of project.
2. The Contractor shall submit a site-specific Storm Water Pollution Prevention Plan (SWPPP) prepared by a Qualified SWPPP Developer (QSD) the Contractor shall amend the SWPPP when required, prepare a Construction Site Monitoring Plan (CSMP), and perform water pollution control work under the oversight of a Qualified SWPPP Practitioner (QSP), as specified in the General Permit. The Contractor shall identify an individual to be a Data Submitter (DS) for this contract. All reports and data that must be submitted to the State Water Resources Control Board will be uploaded by the Contractor's DS to the Stormwater Multi-Application and Report Tracking System (SMARTS) website for certification to the state by the City Legally Responsible Person (LRP) or their Approved Signatory (A/S).
3. The QSD, QSP, and DS designated by the Contractor may be different individuals.
4. Storm Water Pollution Prevention Plan (SWPPP):

The Contractor shall prepare and submit a site-specific Storm Water

Pollution Prevention Plan (SWPPP) to the City Engineer for approval. The SWPPP shall be prepared and certified by a Qualified SWPPP Developer (QSD) holding one of the certifications or registrations listed in Section VII of the Construction General Permit. Within seven (7) working days after contract award, the Contractor shall submit two (2) printed copies of the SWPPP and Site Map and one electronic copy in electronic file (.pdf) format to the Project Manager for review. The Contractor shall allow five (5) working days for the Project Manager's review. If revisions are required, the Project Manager will provide comments, and the Contractor shall revise and resubmit the SWPPP and Site Map in printed and electronic form within five (5) working days of receipt of the Project Manager's comments. Within three (3) working days of receipt of the City Engineer's approved SWPPP, the Contractor shall submit three (3) paper copies of the approved SWPPP to the City Engineer. Once the City Engineer has approved the SWPPP for the project, the Contractor may proceed with construction activities requiring coverage under the General Permit.

5. **WDID Number:** The Contractor shall not perform work that may cause water pollution until the state has issued a WDID number for the project. The City Engineer's review and approval of the SWPPP shall not waive any contract requirements and shall not relieve the Contractor from complying with Federal, State and local laws, regulations, and requirements. Working days shall not be counted if the controlling item of work cannot be performed during the initial preparation and review of the SWPPP and Site Map and between the date that the approved SWPPP has been received by the City Engineer, and the date the City Engineer has notified the Contractor that a WDID number has been assigned to the project.
6. **Approved SWPPP:** The Contractor shall keep a copy of the approved SWPPP at the job site at all times during construction. The SWPPP shall be made available when requested by a representative of the Regional Water Quality Control Board, State Water Resources Control Board, United States Environmental Protection Agency, or the local storm water management agency. Requests from the public shall be directed to the Project Manager.

C. **WPCP**

1. **General:** Contractor shall submit WPCP for City review within ten (10) calendar days after award of project.
2. **Water Pollution Control Plan:**

The Contractor shall prepare and submit a site-specific Water Pollution Control Plan (WPCP) to the Project Manager and Construction for approval. Within seven (7) working days after contract award, the Contractor shall submit two (2) printed copies of the WPCP and Site Map and one electronic copy in electronic file (.pdf) format to the Project Manager for review. The Contractor shall allow five (5) working days for the Project Manager's review. If revisions are required, the Project Manager will provide comments, and the Contractor shall revise and resubmit the WPCP and Site Map in printed and electronic form within five (5) working days of receipt of the Project Manager's comments. Within three (3) working days of receipt of the Project Manager's approved WPCP, the Contractor shall submit three

(3) paper copies of the approved WPCP to the Project Manager. Once the Project Manager has approved the WPCP for the project, the Contractor may proceed with construction activities.

The Contractor shall keep a copy of the approved WPCP at the job site. The WPCP shall be made available when requested by a representative of the Regional Water Quality Control Board, State Water Resources Control Board, United States Environmental Protection Agency, or the local storm water management agency. Requests from the public shall be directed to the Project Manager.

1.5 WATER POLLUTION CONTROL DRAWING/EROSION CONTROL PLAN

- A. General: Contractor shall include a Water Pollution Control Drawing (WPCD) / Erosion and Sediment Control Plan (ESCP) as a part of the SWPPP/WPCP. Revisions and Amendments to the WPCDs shall be prepared and uploaded to SMARTS by Contractor's QSP and/or QSD.
- B. For any State Highway projects, Contractor shall provide a Water Pollution Control Drawing as required by Caltrans. Contractor to provide an Erosion and Sedimentation Control Plan to the Engineering Division for review and approval prior to issuance of a grading permit.
- C. Deficiencies: The Contractor shall construct, inspect, maintain, remove, and dispose of the water pollution control measures. If the Contractor, the Contractor's QSP, or the City Engineer and/or his representative identifies a deficiency in the implementation of the approved SWPPP/WPCP, the deficiency shall be corrected immediately, and at a minimum of 72 Hours. The deficiency shall be corrected before the onset of precipitation. If the Contractor fails to correct the deficiency by the 72-hour timeframe or before the onset of precipitation, the Project Manager may correct the deficiency and deduct the cost of correcting deficiencies from payments. If the Contractor fails to conform to the provisions of this section, the Project Manager may order the suspension of work until the project complies with the requirements of the Construction General Permit and this section.
- D. Weather Forecasts: The Contractor shall monitor the National Oceanic and Atmospheric Administration (NOAA) weather forecast on a daily basis during the contract. The Contractor shall perform SWPPP/WPCP Inspections according to the Risk Level. The Contractor will provide soil stabilization and sediment control practices whenever there is a 50% probability of rain within 48 hours as predicted by the NOAA. The Contractor shall maintain soil stabilization and sediment control materials on site to protect disturbed soil areas throughout the life of construction project.

1.6 IMPLEMENTATION REQUIREMENTS

- A. QSP: The Contractor shall designate in writing a Qualified SWPPP Practitioner (QSP) who shall be responsible for non-storm water and storm water visual

observations and inspections, and for ensuring that all BMP required by the SWPPP/WPCP and General Construction Permit are properly implemented and maintained. The QSP shall meet the training and certification requirements in the Construction General Permit.

- B. SWPPP Requirements: All measures required by the SWPPP/WPCP shall be implemented concurrent with the commencement of construction. No construction may start without all BMPs in place. Pollution practices and devices shall be followed or installed as early in the construction schedule as possible with frequent upgrading of devices as needed as construction progresses to protect water quality at all times.
- C. Inspection and Maintenance: The Contractor's Qualified SWPPP Developer (QSD) shall develop and implement a written site-specific Construction Site Monitoring Program (CSMP) in accordance with the requirements of the General Permit and the Technical Specifications, and Contractor's QSP shall monitor the water pollution control practices identified in the General Permit and SWPPP as follows:
1. Visual Inspections, Quarterly Non-storm water discharge
 2. Minimum of Weekly Visual Inspections of all Best Management Practices (BMP) that need maintenance to operate effectively, that have failed or that could fail to operate as intended.
 3. BMP Inspections, Baseline Pre-storm event
 4. Rain Event Action Plan (REAP)
 5. BMP Inspections, 24-Hours during extended rain events
 6. BMP Inspections, Post-storm event.
- D. The QSP shall oversee the maintenance of the water pollution control practices. The QSP shall document all visual inspection activities with written reports according to the requirements of the Construction General Permit. The format of the reports shall be approved by the Project Manager.
- E. A copy of all written reports documenting implementation of the CSMP shall be submitted to the Project Manager within 48 hours of finishing the inspection and shall remain on site during construction.
- F. Reporting Requirements: If the Contractor identifies discharges into surface waters or drainage systems causing or potentially causing pollution, or if the project receives a written notice or order from a regulatory agency, the Contractor shall immediately inform the Project Manager. The Contractor shall submit a written report to the Project Manager within 24 hours of the discharge, notice or order. The report shall include the following information:
1. The date, time, location, nature of the operation, type of discharge; and the cause of the notice or order.
 2. The water pollution control practices used before the discharge, or before receiving the notice or order.
 3. The date of placement and type of additional or altered water pollution control practices placed after the discharge, or after receiving the notice or order.
 4. A maintenance schedule for affected water pollution control practices.

- G. Annual Report: The Contractor shall complete and submit to the City Engineer an Annual Report, as required by the current State Water Board Industrial General Permit. The Contractor shall submit the Annual Report prior to acceptance of the project. Contractor shall submit the annual report to the SWRCB directly on SMARTS.

1.7 COMPLETION OF WORK

- A. Maintenance: Clean-up shall be performed as each portion of the work progresses. All refuse, excess material, and possible pollutants shall be disposed of in a legal manner off-site and all temporary and permanent BMP devices shall be in place and maintained in good condition.
- B. Records: At completion of work, inspect installed BMP devices, and present the currently implemented SWPPP/WPCP with all backup records to the Project Manager.
- C. BMPs: Contractor must remove all construction materials, temporary facilities, temporary BMPs, equipment and construction related materials from the site.
- D. NOTICE OF TERMINATION (NOT): A Notice of Termination (NOT) must be submitted by the Contractor to the City Engineer for electronic submittal by the LRP via SMARTS to terminate coverage under the General Permit. The NOT must include a final Site Map and representative photographs of the project site that demonstrate final stabilization has been achieved. The NOT shall be submitted to the City Engineer within 10 days of completion of construction. The NOT will be reviewed and submitted to SMARTS by the City Engineer within 90 days of completion of construction. The Regional Water Board will consider a construction site complete when the conditions of the General Permit, Section II.D have been met. Notice of Termination should be filed by the Contractor via the SMARTS system. The City will allow the Contractor to enter data in SMARTS on the City's behalf.

1.8 QUALITY ASSURANCE

- A. Performance: Perform work in accordance with SWPPP/WPCP. Maintain one copy of document on jobsite.
- B. Quality Control and Assurance: Train all employees and subcontractors in these subjects:
 - 1. Material pollution prevention and control
 - 2. Waste management
 - 3. Non-storm water management
 - 4. Identifying and handling hazardous substances
 - 5. Potential dangers to humans and the environment from spills and leaks or exposure to toxic or hazardous substances
- C. Training Requirements: Training must take place before starting work on this job. New employees must receive the complete training before starting work on this job. Conduct weekly meetings to discuss and reinforce spill prevention and

control; material delivery, storage, use, and disposal; waste management; and non-storm water management procedures.

1.9 PRE-INSTALLATION CONFERENCE

- A. Timing: Convene a conference one week prior to commencing work at the site
- B. Attendance: Require attendance of parties directly affecting the work of this Section.
- C. Agenda: Review requirements of the SWPPP/WPCP.

1.10 PERFORMANCE REQUIREMENTS

- A. General: The SWPPP/WPCP is a minimum requirement. Revisions and modifications to the SWPPP/WPCP are acceptable only if they maintain levels of protection equal to or greater than originally specified.
- B. Requirements: Read and be thoroughly familiar with all of the requirements of the SWPPP/WPCP.
- C. Compliance: Inspect and monitor all work and storage areas for compliance with the SWPPP/WPCP prior to any anticipated rain.
- D. Corrective Measures: Complete any and all corrective measures as may be directed by the regulatory agency.
- E. Penalties: Contractor to pay any fees and be liable for any other penalties that may be imposed by the regulatory agency for non-compliance with SWPPP during the course of work.
- F. Costs: Contractor to pay all costs associated with the implementation of the requirements of the SWPPP/WPCP in order to maintain compliance with the Permit. This includes installation of all Housekeeping BMPs, General Site and Material Management BMPs, Inspection requirements, maintenance requirements, sampling, monitoring, reporting and all other requirements specified in the SWPPP/WPCP and as required by the General Permit, local, state and federal regulations.

1.11 MATERIALS:

- A. General: All temporary and permanent storm water pollution prevention facilities, equipment, and materials as required by or as necessary to comply with the SWPPP/WPCP as described in the current California Stormwater Quality Association (CASQA) BMP Handbook.

1.12 STORM WATER POLLUTION PREVENTION PLAN

- A. Plan Preparation and Compliance

1. The Contractor shall conform to Section 13, Water Pollution Control, of the State Standard Specifications and the General Conditions, Special Conditions, and Technical Specifications.
 2. The Contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) and the necessary Project Registration Documents to be digitally filed with the California State Water Resources Control Board (SWRCB) through the Stormwater Multi-Application and Report Tracking System (SMARTS database). The Contractor will be responsible to provide the Permit Registration Documents (PRDs) to the City; the QSD will submit the PRDs for the WDID number through SMARTS. The SWPPP shall be prepared based upon the most current California Stormwater Quality Association (CASQA) standard SWPPP Template. The Contractor shall perform the role of “Qualified SWPPP Developer” (QSD) and shall be responsible for all formal amendments to the SWPPP. The Contractor shall also perform the role of “Qualified SWPPP Practitioner” (QSP) and shall be responsible for all field SWPPP implementation, monitoring, sampling, and reporting. The completed SWPPP shall be created by the Contractor as necessary to reflect the necessary sequence and staging of field operations.
 3. The SWPPP shall conform to SWRCB Order 2009-0009-DWQ (“The Construction General Permit” or “CGP”), San Francisco Bay Regional Water Quality Control Board Order R2-2009-0074 (“Municipal Regional Stormwater NPDES Permit” or “MRP”), Provisions in Section 13, Water Pollution Control, of the State Standard Specifications, the details, operating procedures, and maintenance guidelines of the California Regional Water Quality Control Board San Francisco Bay Region’s Guidelines for Construction Projects (Guidelines), the California Regional Water Control Board San Francisco Bay Region’s Erosion and Sediment Control Field Manual (Manual), the project plans and the General Conditions, Special Conditions, and Technical Specifications. The SWPPP shall be deemed to fulfill the requirements set forth in Section 13 of the State Standard Specifications for development and submittal of a Water Pollution Control Program.
 4. Prior to the Notice to Proceed (with field activities), the State Project Registration Documents (PRDs) will have been filed digitally through SMARTS, and confirmation from the SWRCB will have been received authorizing coverage of this project under the CGP. Construction cannot commence until a WDID has been received.
- B. Risk Based Contractor Requirements and City Responsibilities (Applicable for all project risk levels/types) – The following minimum items shall be included within the SWPPP, as prepared by the Contractor
1. Risk Level Determination (to be performed by Contractor)
 2. WDID Number (to be obtained by Contractor through coordination with City)
 3. Certification by City “Legally Responsible Party” (LRP) (to be provided by City)
 4. Placeholder for Contractor SWPPP training throughout construction
 5. Name and contact information of Contractor QSD (to be provided by Contractor)
 6. Name and contact information of Contractor QSP (to be provided by Contractor)

7. Schedule of Construction and Deployment of BMPs for each phase of work (to be provided by Contractor)
8. Description of minimum year round sediment control measures per Order 2009-009- DWQ
9. Dates and description of all formal SWPPP amendments (to be prepared by Contractor)
10. Description of Construction Site Monitoring Plan (CSMP) per Order 2009-009-DWQ (to be done by Contractor) including, but not limited to the following:
 - a. Sampling preparation,
 - b. Collection,
 - c. Quality assurance and quality control,
 - d. Sample labeling,
 - e. Collection documentation,
 - f. Sample shipping,
 - g. Chain of custody,
 - h. Sample numbering,
 - i. Precautions from the construction site health and safety plan, and
 - j. Providing and maintaining a function rain gauge at all times.
11. Minimum required monitoring activities:
 - a. Post storm event (0.5" or greater) visual discharge inspection (within 48 hours).
 - b. Sampling for non-visible pollutants:
 - Take one or more sample during any breach, spill, malfunction, or leakage that could discharge non visible pollutants into storm-water.
 - Samples taken must be large enough to accurately categorize site conditions.
 - Samples taken must be within the first 2 hours of rain events that occur during scheduled business hours that produce runoff.
 - Samples shall be analyzed for pollutants in accordance with warrant as necessary for protection of surface waters.
 - An uncontaminated (control) sample must be taken as a basis of comparison.
 - Samples must be received by the laboratory within 48 hours of physical sampling. The Contractor must use containers provided by the laboratory.
 - c. Quarterly inspections for non-stormwater discharges.
12. Minimum scheduled BMP inspections with appropriate documentation:
 - a. Weekly, on a year round basis, throughout the duration of construction.
 - b. Daily (once every 24 hours) BMP inspection during extended storm events.
 - c. Inspect drainage areas and BMPs within 48 hours of predicted rainfall event (0.5" or greater).
13. Intent of compliance with the following analytical methods and sampling protocol:
 - a. Standard Methods for the Examination of Water and Wastewater (American Public Health Association).
 - b. 40 CFR Part 136, "Guidelines Establishing Test Procedures for the Anal-

- ysis of Pollutants."
- c. Surface Water Ambient Monitoring Program's (SWAMP) 2008 Quality Assurance Program Plan.
14. Potential sources of non-visible pollutants
 15. Description of all minimum source control measures, "good housekeeping", and non stormwater management per Order 2009-009-DWQ
 16. Other measures as necessary for Order 2009-009-DWQ
- C. Risk Based Contractor Requirements and City Responsibilities (Applicable to Risk Level 2/LUP Type 2 or higher)
1. All requirements for Risk Level 1/Type 1 above
 2. Description of applicable Numeric Action Levels for pH and turbidity (to be included in SWPPP by Contractor)
 - a. pH –levels must be maintained within a range of 6.5-8.5.
 - b. Turbidity – 250 NTU maximum.
 3. Description of additional provisions within the CSMP for stormwater effluent monitoring and reporting and non-stormwater discharges (to be included within SWPPP by Contractor):
 - a. Numeric Action Level (NAL) sampling:
 - Water quality grab samples shall be taken at a minimum 3 times a day during each rain event of ½ an inch or more, where runoff occurs. The grab samples shall be representative of the flow and characteristic of the discharges. The contractor shall forward grab sampling results to the City within 24 hours of when they are taken.
 - All discharge points must be sampled, including the one considered to be the "worst case." Discharge from a silt fence or sheet flow area shall be considered one discharge point.
 - All points of run on. A sheet flow area shall be considered one point of run on.
 - Sampling to comply with analytical methods and protocol described in EPA Test Method 180.1.or Standard Method 2130 for turbidity sampling, ASTM D1293- 99(2005) for pH sampling, and Standard Methods for the Examination of Water and Wastewater (American Public Health Association).
 - c. Sampling for non-stormwater discharges.
 4. Description of requirement to create and implement of "Rain Event Action Plans" for each of the following phases of construction (REAPs to be prepared by Contractor's QSP):
 - a. Grading and Land Development,
 - b. Streets and Utilities,
 - c. Vertical Construction,
 - d. Final Landscaping and Stabilization,
 - e. Inactive Construction Status.
 - f. The Contractor shall create and implement Rainfall Event Action Plans for inclusion within approved SWPPP at least 48 hours prior to any likely (forecast by National Weather Service as 50% or greater chance) precipitation event.

5. Description of year round effective erosion control measures to supplement minimum sediment control measures within active, inactive, and completed areas. Erosion control measures shall be provided to the extent necessary for compliance with Order 2009-009- DWQ.
 6. Description of additional Annual Reporting Requirements (Annual reporting information to be prepared by Contractor for review and approval of City prior to submittal):
 - a. Creation and submittal of NAL exceedance reports, if applicable,
 - b. Creation and submittal of sampling logs for pH and turbidity.
- D. Risk Based Contractor Requirements and City Responsibilities (Applicable to Risk Level 3/LUP Type 3 only)
1. All requirements for Risk Level 2 projects described above.
 2. Description of Required Compliance with State Board criteria for technology-based numeric effluent limitations for discharge of pH and turbidity (Description of requirements and physical achievement provided by Contractor):
 - a. For Projects that employ Advanced Treatment Systems (ATS) - Maximum 10 NTU Daily Weighted Average & Maximum 20 NTU for any single sample, applicable for events up to 24 hour events of ½ inches¹. The ATS system must be able to treat this volume within a maximum 72-hour period.
 - b. For Projects that do not employ ATS - Maximum 500 NTU for any single sample, applicable for events up to 24 hour events up to ½ inches².
 - c. Project discharges must maintain pH within a range of 6.0 to 9.0.
 3. Description of additional provisions within the CSMP (description of monitoring provided by Contractor, additional monitoring performed by Contractor):
 - a. Receiving water monitoring, if applicable, based upon the standards of Order 2009- 009-DWQ.
 - b. Bioassessment, if applicable, based upon the standards of Order 2009-009-DWQ.
 - c. Sampling for Suspended Sediment Concentration, if applicable, based upon the standards of Order 2009-009-DWQ. Sampling to comply with analytical methods and protocol described within ASTM Designation: D 3977 for suspended sediment concentration (SSC).
 - d. Inspection of ATS facilities, if applicable. Sampling of ATS discharge points.
 4. Placeholder for Creation of ATS Plan, if applicable, consisting of the following (to be provided by Contractor):
 - a. ATS Operation and Maintenance Manual for All Equipment.
 - b. ATS Monitoring, Sampling & Reporting Plan, including Quality Assurance/Quality Control (QA/QC).
 - c. ATS Health and Safety Plan.
 - d. ATS Spill Prevention Plan.

5. Description of Additional annual reporting requirements (Description provided by Contractor, Annual Reporting information to be prepared by Contractor for review and approval of City)
 - a. Creation and submittal of NEL violation reports, if applicable within 6 hours of occurrence. Reports and related corrective action measures to be reviewed and approved by City prior to submittal to Regional Board
 - b. Completed ATS records, if applicable.

PART 2 - PRODUCTS

2.1 BEST MANAGEMENT PRACTICE (BMP) PRODUCTS

- A. Shall be as specified in the most current CASQA BMP Handbook.
- B. SWPPP as prepared by Qualified SWPPP Developer (QSD)
- C. Risk Level Determination
- D. Notice of Intent/Notice of Substantial Completion
- E. Shall include but is not limited to sampling, reports and other miscellaneous items as determined by the State of California and all pertaining regional and local permits.

PART 3 - EXECUTION

3.1 EROSION AND SEDIMENTATION CONTROL

- A. Temporary erosion and sediment control work shall consist of applying erosion control materials to embankment slopes, excavation slopes and other areas designated on the plans, installing silt fence, inlet protection, gravel bags, headwall protection and stabilized construction entrance ways, or other measures as specified in the project SWPPP/WPCP or necessary for compliance with the CGP.
- B. All temporary erosion and sediment control for the project shall conform to the provisions in Section 13, Water Pollution Control, of the State Standard Specifications and the General Conditions, Special Conditions, and Technical Specifications. All permanent erosion and sediment control for the project shall conform to the provision in Section 21, Erosion Control, of the State Standard Specifications and the General Conditions, Special Conditions, and Technical Specifications.

3.2 INSTALLATION

- A. Construction Requirements

1. The Contractor shall design, implement and maintain the SWPPP/WPCP for the project in full compliance with the SWRCB Order 2009-009-DWQ to control the discharge of storm water pollutants. The Contractor shall perform the monitoring and reporting required to comply with all the state regulations regarding the SWPPP/WPCP for the project. All monitoring, sampling, and reporting information collected by the Contractor shall be subject to the review of the City prior to uploading through the SMARTS database.
- B. Storm Water Pollution Prevention Plan and Water Pollution Control Plan
1. The SWPPP/WPCP shall identify construction activities that may adversely affect the quality of storm water discharges associated with the project and shall identify water pollution control measures, hereinafter referred to as control measures, to be constructed, implemented, and maintained in order to reduce, to the maximum extent feasible, storm water discharges from the construction site both during and after construction is completed under this contract.
 2. The Contractor's "QSD" shall amend the SWPPP/WPCP, graphically and in narrative form, whenever there is a change in construction activities or operations which may affect the discharge of significant quantities of pollutants to surface waters, ground waters, municipal storm drain systems, whenever there is a change in disturbed area, and/or or when deemed necessary by the City. The SWPPP/WPCP shall be amended if, at any time, the implementation of the SWPPP/WPCP is not effectively achieving the objective of compliance with the CGP. Amendments shall show additional control measures or revised operations, including those in areas not shown in the initial SWPPP/WPCP, which are required on the project to control water pollution effectively. Amendments to the SWPPP/WPCP shall be closely coordinated with the Contractor's Qualified SWPPP Practitioner (QSP) within five (5) working days. In emergency situations that require immediate changes at the project site, the Contractor's QSP shall implement the necessary measures and notify the Project Manager and Contractor's QSD of the changes.
 3. The Contractor shall give immediate notice to the Project Manager of any planned changes in construction activity that may result in non-compliance with the General Conditions, Special Conditions, and Technical Specifications or the CGP.
 4. By the last day of each month, the Contractor shall submit an affidavit to the Project Manager certifying conformance with the SWPPP/WPCP. The monthly partial payment may be withheld if the affidavit is not received and accepted by the Project Manager. If at any time the project is in non-compliance with the SWPPP/WPCP or the CGP, the Contractor shall submit a written report to the Project Manager immediately upon identifying the non-compliance. The report shall specify the time and nature of the non-compliance and include a course of action to correct the deficiency.
 5. The Contractor shall keep a copy of the State of California Construction Activity General Permit (SWRCB Order No. 2009-009-DWQ), the SWPPP/WPCP, and any approved amendments at the project site. The SWPPP/WPCP shall be made available upon request of any representative of the Regional Water Quality Control Board, State Water Resources

Control Board, United States Environmental Protection Agency, or any City representative. Public requests for copies of the SWPPP/WPCP shall be directed to the Project Manager.

C. Erosion and Sediment Control

1. The facilities shown on the SWPPP/WPCP are designed to effectively control erosion and sediment on a year-round basis.
 - a. Construction operations shall be carried out in such a manner that erosion and water pollution will be minimized. Contractor shall comply with state and local laws concerning pollution abatement.
 - b. Contractor shall be responsible for monitoring erosion and sediment control measures prior, during, and after storm events. Monitoring and sampling (as applicable) shall follow the protocol described in the CGP and Project SWPPP/WPCP.
 - a. Extreme care shall be taken when hauling any earth, sand, gravel, stone, debris, paper, or any other substance over any public street, alley or other public place. Occurrences of material blown, spilled, or tracked over and upon said public or adjacent private property are prohibited and shall be immediately remedied. Discharge of debris is prohibited. Non-stormwater discharge is prohibited, except as specified in SWRCB Order 2009-009-DWQ. Discharge of hazardous substances is prohibited.
 - b. Inlet protection shall be installed at open inlets to prevent sediment from entering the storm drain system. Inlets not used in conjunction with erosion control are to be blocked to prevent entry of sediment.
 - c. All paved areas shall be kept clear of earth material and debris. The site shall be maintained so as to prevent sediment-laden runoff to any storm drainage system, including existing drainage swales and watercourse, to the extent necessary for compliance with applicable numeric action or effluent levels specified in the CGP and Project SWPPP/WPCP.
 - d. Contractor shall install and maintain construction entrances prior to commencement of grading. All construction vehicle traffic entering onto the paved roads must cross stabilized construction entrance ways. Entrance ways may be constructed of two inch to six-inch drain rock, metal grating, or metal cattle-guard, or equivalent material, or may include vehicle wash stations as needed, in sufficient quantity and size to prevent tracking of mud and debris from the construction site. Tracking of mud or debris onto public streets, or onto adjacent public or private property, is prohibited and shall be removed immediately as required by the City.
 - e. Grading operations which leave denuded slopes shall be protected with erosion control measures within 14 days of completion or suspension of activity. If hydroseeding is not used or is not effective within this 14-day period, then other immediate methods shall be implemented, such as erosion control blankets, blown straw, or a three step application of 1) seed, mulch, fertilizer, 2) blown straw, and 3) tackifier and mulch.
 - f. Sanitary facilities shall be maintained on the site in a manner to prevent inadvertent discharge or leakage of sanitary wastes into the

- storm drain system either by placing sanitary facilities in locations that do not drain to the storm drain system or by providing secondary containment systems to capture leaked wastes.
- g. Contractor shall provide dust control as required by the appropriate federal, state and City requirements and the City Standard Specifications.
 - h. The erosion and sediment control plan may not cover all the situations that may arise during construction due to unanticipated field conditions. Variations and additions may be made to the plan in the field. That Contractor's QSP shall notify the Contractor's QSD of any field changes.
- D. Maintenance: The SWPPP/WPCP shall include a plan for maintenance that shall include at a minimum.
1. Immediate repair of damage caused by soil erosion or construction.
 2. Inspection of sediment traps, berms, rills, gullies, and swales before, during, and after each storm event or predicted rainfall in accordance with the CGP and project SWPPP/WPCP. This also includes repair or cleaning as needed.
 3. Removal of sediment from sediment traps and restoration to original dimensions when sediment has accumulated to a depth of one foot. Sediment removed from trap shall be deposited in a suitable area and in such a manner that it will not erode.
 4. Regular cleaning of gravel bag inlet protection so that sediment depth never exceeds a maximum of three inches.
- E. Risk Based Contractor Requirements and City Responsibilities (Applicable for all project risk levels/types) – The following minimum items shall be performed by the Contractor during field implementation of the Project SWPPP/WPCP throughout the duration of construction until final Notice of Termination
1. Coordinate and conduct periodic SWPPP/WPCP and Erosion and Sediment Control training throughout construction
 2. Update schedule of construction and deployment of BMPs for each phase of work on an as-needed basis
 3. Physically install and maintain minimum year-round sediment control measures per Order 2009-009-DWQ
 4. Perform and file all formal SWPPP/WPCP amendments. All SWPPP/WPCP amendments to be reviewed and approved by the City and the Contractor's QSD prior to submittal.
 5. Physically perform and implement all measures found within the SWPPP/WPCP Construction Site Monitoring Plan (CSMP) per Order 2009-009-DWQ including, but not limited to the following:
 - a. Sampling preparation,
 - b. Collection,
 - c. Quality assurance and quality control,
 - d. Sample labeling,
 - e. Collection documentation,
 - f. Sample shipping,
 - g. Chain of custody,
 - h. Sample numbering,

- i. Precautions from the construction site health and safety plan, and
 - j. Providing and maintaining a function rain gauge at all times.
 6. Minimum required monitoring activities:
 - a. Post storm event (0.5" or greater) visual discharge inspection (within 48 hours).
 7. Sampling for non-visible pollutants:
 - a. Take one or more sample during any breach, spill, malfunction, or leakage that could discharge nonvisible pollutants into stormwater.
 - Samples taken must be large enough to accurately categorize site conditions.
 - Samples taken must be within the first 2 hours of rain events that occur during scheduled business hours that produce runoff.
 - Samples shall be analyzed for pollutants in accordance with an appropriate pollutant source assessment, or as conditions warrant as necessary for protection of surface waters.
 - An uncontaminated (control) sample must be taken as a basis of comparison.
 - Samples must be received by the laboratory within 48 hours of physical sampling. The Contractor must use containers provided by the laboratory.
 - b. Quarterly inspections for non-stormwater discharges.
 8. Minimum scheduled BMP inspections with appropriate documentation:
 - a. Weekly, on a year-round basis, throughout the duration of construction.
 - b. Daily (once every 24 hours) BMP inspection during extended storm events.
 - c. Inspect drainage areas and BMPs within 48 hours of predicted rainfall event (0.5" or greater).
 9. Compliance with the following analytical methods and sampling protocol:
 - a. Standard Methods for the Examination of Water and Wastewater (American Public Health Association).
 - b. 40 CFR Part 136, "Guidelines Establishing Test Procedures for the Analysis of Pollutants."
 - c. Surface Water Ambient Monitoring Program's (SWAMP) 2008 Quality Assurance Program Plan.
 10. Identify and eliminate potential sources of non-visible pollutants
 11. Implementation of all minimum source control measures, "good housekeeping", and non-stormwater management per Order 2009-009-DWQ
 12. Other measures as necessary for Order 2009-009-DWQ
- F. Risk Based Contractor Requirements and City Responsibilities (Applicable to Risk Level 2/LUP Type 2 or higher)
1. All requirements for Risk Level 1/Type 1 above
 2. Maintain tolerance of site discharge within applicable Numeric Action Levels for pH and turbidity

- a. pH –levels must be maintained within a range of 6.5-8.5.
 - b. Turbidity – 250 NTU maximum.
3. Numeric Action Level (NAL) sampling:
 - a. Water quality grab samples shall be taken at a minimum 3 times a day during each rain event of ½ an inch or more, where runoff occurs. The grab samples shall be representative of the flow and characteristic of the discharges. The contractor shall forward grab sampling results to the City within 24 hours of when they are taken.
 - b. All discharge points must be sampled, including the one considered to be the “worst case.” Discharge from a silt fence or sheet flow area shall be considered one discharge point.
 - c. All points of run on. A sheet flow area shall be considered one point of run on.
 - d. Sampling to comply with analytical methods and protocol described in EPA Test Method 180.1 or Standard Method 2130 for turbidity sampling, ASTM D1293- 99(2005) for pH sampling, and Standard Methods for the Examination of Water and Wastewater (American Public Health Association).
 4. Sampling for non-stormwater discharges
 5. Create and physically implement of “Rain Event Action Plans” for each of the following phases of construction:
 - a. Grading and Land Development,
 - b. Streets and Utilities,
 - c. Vertical Construction,
 - d. Final Landscaping and Stabilization,
 - e. Inactive Construction Status.
 6. The Contractor shall create and implement Rainfall Event Action Plans for inclusion within approved SWPPP/WPCP at least 48 hours prior to any likely (forecast by National Weather Service as 50% or greater chance) precipitation event.
 7. Physically implement and maintain year-round effective erosion control measures to supplement minimum sediment control measures within active, inactive, and completed areas. Erosion control measures shall be provided to the extent necessary for compliance with Order 2009-009-DWQ.
 8. Maintain and compile documents to meet Annual Reporting Requirements (Annual reporting information to be prepared by Contractor for review and approval of City prior to submittal):
 - a. Creation and submittal of NAL exceedance reports within 48 hours, if applicable, based upon review and approval of City.
 - b. Creation and submittal of sampling logs for pH and turbidity.
- G. Risk Based Contractor Requirements and City Responsibilities (Applicable to Risk Level 3/LUP Type 3 only)
1. All requirements for Risk Level 2 projects described above.
 2. Maintain physical compliance with State Board criteria for technology-based numeric effluent limitations for discharge of pH and turbidity

3. For Projects that employ Advanced Treatment Systems (ATS) - Maximum 10 NTU Daily Weighted Average & Maximum 20 NTU for any single sample, applicable for events up to 24-hour events of ½ inches³. The ATS system must be able to treat this volume within a maximum 72-hour period.
4. For Projects that do not employ ATS - Maximum 500 NTU for any single sample, applicable for events up to 24-hour events up to ½ inches⁴.
5. Project discharges must maintain pH within a range of 6.0 to 9.0.
6. Perform additional provisions within the CSMP:
 - a. Receiving water monitoring, if applicable, based upon the standards of Order 2009- 009-DWQ.
 - b. Bioassessment, if applicable, based upon the standards of Order 2009-009-DWQ.
 - c. Sampling for Suspended Sediment Concentration, if applicable, based upon the standards of Order 2009-009-DWQ. Sampling to comply with analytical methods and protocol described within ASTM Designation: D 3977 for suspended sediment concentration
 - d. Inspection of ATS facilities, if applicable. Sampling of ATS discharge points.
7. Creation and implementation of ATS Plan, if applicable, consisting of the following:
 - a. ATS Operation and Maintenance Manual for All Equipment.
 - b. ATS Monitoring, Sampling & Reporting Plan, including Quality Assurance/Quality Control (QA/QC).
 - c. ATS Health and Safety Plan.
 - d. ATS Spill Prevention Plan.
8. Maintain and compile additional annual reporting requirements (Annual Reporting information to be prepared by Contractor for review and approval of City prior to submittal)
 - a. Creation and submittal of NEL violation reports, if applicable within 6 hours of occurrence. Reports and related corrective action measures to be reviewed and approved by City prior to submittal to Regional Board
 - b. Completed ATS records, if applicable.

3.3 STREET SWEEPING

- A. Street sweeping: Street sweeping will be implemented everywhere where sediment is tracked from the project site onto public roads. Sweeping will be done during all construction activities to control tracking of sediments as required as per the guidelines provided in the SWPPP document and as directed in this section.

3.4 DUST CONTROL

- A. Contractor's Responsibility: Use equipment that will generate the least amount of dust. Provide dust control at all times including Saturdays, Sundays, and holidays as ordered by the Project Manager. Whenever the Contractor, in the opinion of the Project Manager, is negligent in controlling dust, the Project Manager may direct attention to the existence of a dust hazard and instruct the Contractor to

immediately alleviate the dust hazard. The Contractor shall be responsible for any damage caused by dust generated as a result of its operations.

- B. Street Vacuum/Sweeper: Have a commercial standard street vacuum/sweeper operational and in operation during each working day. The street vacuum/sweeper shall be able to pick up sand, gravel, dust, and debris, and other things, shall minimize dust generation, and shall also be available during the day and shall sweep as outlined below and as directed by the Project Manager.
- C. Sweeping: If the Contractor is performing work that generates dust and debris then during the day (including weekends and holidays) the sweeper shall sweep the project area (full length, width, and all lanes) twice a day sometime between 9:00a.m. and 11:00a.m. and also between 2:00p.m. and 4:00p.m. Hardscape surfaces (including pavers, sidewalks, and areas inaccessible by a mechanical sweeper) shall have dirt, dust, and debris removed by hand sweeping. If the Contractor fails to fulfill the responsibilities of this Section the City will perform or contract with others to perform the work and all costs incurred to the City shall be withheld from future payments to the Contractor.
- D. Additional Sweeping: Clean the sidewalk and gutter as many times as needed to make sure the sidewalk and gutter are out of dirt, debris and small rocks at all times. Be prepared to sweep surfaces immediately at the request of the Project Manager should it be deemed necessary for public safety and to avoid damage to properties. If streets are not satisfactorily cleaned within 12 hours from verbal or written notice by City personnel, the City will hire an independent sweeping company and deduct the cost for such work from payments due to the Contractor.
- E. Payment for Dust Control and Clean Up: Shall be included in the prices paid for Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Plan (WPCP) as shown in the Bid Schedule or considered incidental to the items most closely related to when there is no bid item. This Item shall be considered as full compensation for all labor, materials, tools, equipment and incidentals and for doing the work of Dust Control and Clean Up and no additional compensation shall be made therefor.

3.5 EMERGENCY EROSION AND SEDIMENT CONTROL

- A. Shall consist of any measures not addressed in the SWPPP/WPCP that the Project Manager or QSD deems necessary for compliance with the CGP including, but not limited to all erosion control measures necessary to prevent degradation to water quality.
- B. Sediment Control including unforeseen measures not addressed in the Storm Water Pollution Plan pay item in accordance with the National Pollution Discharge Elimination System (NPDES), the City of Pittsburg and the Plans and Specifications and to the satisfaction of the Project Manager. Work under this item shall be considered as extra work paid for on a force account basis.

END OF SECTION 01 57 23

SECTION 01 60 00 – PRODUCT REQUIREMENTS**PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project.

1.2 DEFINITIONS

- A. Products:
 - 1. General: Items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 2. Named Products: Items identified by the manufacturer's product name, including make or model number or other designation, shown or listed in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
 - 3. Materials: Components shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
 - 4. Equipment: Product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.3 QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.
- B. Compatibility of Options: When the Contractor is given the option of selecting between 2 or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. General: Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
 - 1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
7. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Products complying with specified reference standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of one of manufacturers named and complying with Specifications; no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit Request for Substitution for any manufacturer not named, according to [Section 01 25 00 - Substitution Procedures](#).

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS:

- A. General: Refer to [Section 01 70 00 – Execution](#).
- B. Product Handling: Assure that Work is manufactured and/or fabricated in ample time to not delay construction progress. Transport, handle, store and protect products in accordance with manufacturer's instructions.

END OF SECTION 01 60 00

SECTION 01 70 00 – EXECUTION**PART 1 - GENERAL****1.1 SUMMARY**

- A. This section includes requirements for field engineering, examination, preparation, execution, cleaning, and protecting installed construction.
- B. Field Engineering: Provide such field engineering services as are required for proper completion of the Work including, but not limited to:
 - 1. Establishing and maintaining lines and levels.
 - 2. Structural design of shores, forms, and similar items provided by the Contractor as part of the means and methods of construction.

1.2 QUALITY ASSURANCE

- A. Workers: Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specific requirements and the methods needed for proper performance of the work of this Section.

1.3 SUBMITTALS

- A. Comply with [Section 01 33 00 - Submittal Procedures](#).
- B. Upon request of the Project Manager, submit the following:
 - 1. Engineering qualifications of persons proposed to be engaged for field engineering services.
 - 2. Documentation verifying accuracy of field engineering work.
 - 3. Certification, signed by the Contractor's retained field engineer, certifying that elevations and locations of improvements are in conformance with requirements of the Contract Documents. Documentation shall require surveyor's certification stamp.

1.4 REFERENCE POINTS

- A. In addition to the procedures directed by the Contractor for proper performance of the Contractor's responsibilities:
 - 1. Locate and protect control points before starting work on the site.
 - 2. Preserve permanent reference points during progress of the Work.
 - 3. Do not change or relocate reference points or items of the Work without specific approval from the Project Manager.
 - 4. Notify and advise the Project Manager within twenty-four (24) hours when a reference point is lost or destroyed, or requires relocation because of other changes in the Work:
 - a. Upon direction of the Project Manager, require the field engineer to re-

place reference stakes and/or markers.

- b. Locate such replacements according to the original survey control.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that existing Site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual Specification Sections.
- D. Verify that utility services are available with correct characteristics and in correct locations.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance according to manufacturer's instructions.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer-required or manufacturer-recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

3.3 EXECUTION

- A. Comply with manufacturer's installation instructions, performing each step-in sequence. Maintain one set of manufacturer's installation instructions at Project Site during installation and until completion of construction.
- B. When manufacturer's installation instructions conflict with Contract Documents, request clarification from Project Manager before proceeding.
- C. Verify that field measurements are as indicated on approved Shop Drawings or as instructed by manufacturer.
- D. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
 - 1. Secure Work true to line and level and within specified tolerances, or if not specified, industry-recognized tolerances.
 - 2. Physically separate products in place, provide electrical insulation, or

- provide protective coatings to prevent galvanic action or corrosion between dissimilar metals.
3. Exposed Joints: Provide uniform joint width and arrange to obtain best visual effect. Refer questionable visual-effect choices to Project Manager for final decision.
- E. Allow for expansion of materials and/or movement.
- F. Climatic Conditions and Project Status: Install each unit of Work under conditions to ensure best possible results in coordination with entire Project.
1. Isolate each unit of Work from incompatible Work as necessary to prevent deterioration.
 2. Coordinate enclosure of Work with required inspections and tests to minimize necessity of uncovering Work for those purposes.
- G. Mounting Heights: Where not indicated, mount individual units of Work at industry recognized standard mounting heights for particular application indicated.
1. Refer questionable mounting heights choices to Project Manager for final decision.
 2. Elements Identified as Accessible to Handicapped: Comply with applicable codes and regulations.
- H. Adjust operating products and equipment to ensure smooth and unhindered operation.
- I. Clean and perform maintenance on installed Work as frequently as necessary through remainder of construction period. Lubricate operable components as recommended by manufacturer.
- 3.4 CLEANING
- A. Maintain Project Site, surrounding areas and public properties free from accumulations of waste, debris, and rubbish, caused by operations.
- B. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave Project Site clean and ready for occupancy.
- C. Hazards Control:
1. Conduct cleaning and disposal operation in accord with legal requirements.
 2. Do not burn or bury rubbish and waste materials on Project Site.
 3. Do not dispose of volatile wastes in storm or sanitary drains.
 4. Store volatile wastes in covered metal containers, and remove from premises daily.
 5. Prevent accumulation of wastes which create hazardous conditions.
 6. Provide adequate ventilation during use of volatile or noxious substances. Ventilation shall be other than ventilation system.
- D. Materials:
1. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

2. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

E. During Construction:

1. Execute cleaning daily to ensure Project Site, Owner's premises, adjacent and public properties are maintained free from accumulations of waste materials and rubbish.
2. Wet down dry materials and rubbish to control dust.
3. At reasonable intervals during progress of Work, clean Project Site and public properties, and dispose of waste materials, debris and rubbish.
4. Provide on Project Site dump containers for collection of waste materials, debris and rubbish. Waste containers shall not be used for construction waste.
5. Remove waste materials, debris and rubbish from Owner's premises and legally dispose of off Owner's property.
6. Handle materials in a controlled manner with as few handlings as possible. Do not drop or throw materials.

3.5 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual Specification Sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate Work area to prevent damage.
- C. Prohibit traffic from landscaped areas.

END OF SECTION 01 70 00

SECTION 01 71 13 – MOBILIZATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes but not limited to:
 - 1. mobilization and demobilization;
 - 2. preparatory work and activities those necessary for the movement of personnel, equipment, supplies, and incidentals to the job site;
 - 3. for the establishment of all offices, building, trailers, and other facilities necessary for work on the project;
 - 4. submittals, bonding and insurance requirements;
 - 5. public notifications in English and Spanish;
 - 6. contacting and notifying the utility companies;
 - 7. fabricating and installing project identification signs;
 - 8. private property owner agreement for storage facilities;
 - 9. Contractor shall coordinate with City to obtain Right of Entry for any work within private property.
 - 10. and for all other work and activities which must be performed or costs incurred prior to beginning work on the various contract items on the project site.

1.2 REFERENCES

- A. Cal/OSHA – California Division of Occupation Safety and Health
- B. Underground Services Alert (USA)

1.3 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 MOBILIZATION

- A. Mobilization shall consist of preparatory work and activities listed in Part 1.1 above.
- B. The Contractor shall insure that adequate existing sanitation facilities are available or the Contractor shall provide and maintain adequate sanitation

facilities. All wastes and refuse from sanitary facilities provided by the Contractor's operations shall be disposed of away from the site in accordance with all laws and regulations pertaining thereto.

- C. Mobilization shall also include demobilization upon completion of work and cleanup of the site.
- D. The contractor shall provide all labor, materials, equipment and incidentals to prepare the site for the timely start and efficient completion of all work. This includes obtaining all necessary licenses and permits, providing required submittals including but not limited to a detailed project schedule.
- E. Mobilization shall also include notifications to all existing utility companies as shown on the Drawings as first order of work.

END OF SECTION 01 71 13

SECTION 01 71 23 – CONSTRUCTION SURVEYING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes but not limited to:
 - 1. Control Line Survey
 - 2. Pothole Survey
 - 3. Survey Monument Referencing
 - 4. Construction Staking
 - 5. Quality Control Survey
 - 6. As-built GPS Survey
- B. All surveying work shall be performed under the responsible charge of a land surveyor licensed in the State of California.

1.2 REFERENCES

- A. Cal/OSHA – California Division of Occupation Safety and Health
- B. Underground Services Alert (USA)

1.3 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. [Section 02 21 13 - Survey Monuments](#).

1.4 MEASUREMENT AND PAYMENT

- A. Compensation for this work (including but not limited to furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in control line survey, survey monument referencing, pothole survey, construction staking, quality control survey and as-built GPS Surveys) shall be included in the contract prices paid for bid items of work involved and no additional compensation will be allowed therefor.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 GENERAL

- A. All work shall be done in accordance with Chapter 12 of the Caltrans Surveys

Manual, Division 00 – General Conditions, Section 7.17, the Special Conditions, the Contract Plans, and as directed by the Engineer.

- B. Contractor shall provide all the project construction surveying and all costs related to establishing a control line, pothole surveying, construction staking, documenting all changes to plans, providing quality control surveying, performing an as-built survey and submitting AutoCAD files of the as-built information. All construction surveying shall be performed under the direction of a Professional Land Surveyor licensed in the State of California. The Contractor shall be responsible for all land surveying and shall be responsible for replacing control points or survey monuments lost or damaged during the course of construction

3.2 CONTROL LINE SURVEY

- A. Prior to any construction surveying contractor will allow for field surveying and office surveying to check the field control shown on the Drawings, and to set construction control points. This survey will be a stand-alone move-in specifically to verify control points. Work includes: collect CAD files from City, submit signed CAD release forms, go to field and tie-in control points, compare the x,y,z of the field data with the x,y,z on the CAD files, establish additional new field control points for construction, and submit CAD file of the existing and new control analysis to engineer for review. All project construction surveying shall be based on this established control line.

3.3 POTHOLE SURVEY

- A. For Projects requiring pothole survey by a Licensed Land Surveyor, during the potholing excavation and exposure of the existing utility, the Contractor's licensed Land Surveyor shall perform a topographic survey of the existing grade, top of pipe of the existing utilities, location of the utility on the project coordinate system. Contractor shall document the outside diameter of the pipe and the pipe material. Contractor shall submit the pothole survey with the above specified information in an AutoCAD Drawing file to the City engineer. CAD point descriptions to include the type of exposed pipe and diameter (example: "12" water")

3.4 SURVEY MONUMENT REFERENCING

- A. For Survey Monument Referencing, refer to [Section 02 21 13 - Survey Monuments](#).

3.5 CONSTRUCTION STAKING

- A. The Contractor shall submit a AutoCAD files to the engineer three (3) working days prior to any staking operation. AutoCAD files will show the calculated survey points with CAD elevations and CAD descriptions as part of the calculated topographic shots. Cut sheets in-lieu of this requirement will not be accepted. CAD points must include the elevations in CAD.
- B. Construction staking shall be defined as: "Markings set in the field by a CA Licensed Land Surveyor, prior to construction, with horizontal coordinates and vertical dimensions to the items identified below. All field markings shall be

completed under the direction of Land Surveyor licensed by the State of California.” The Contractor shall be responsible for replacing established survey points lost or damaged during the course of construction.

- C. The list below includes some but not limited to items to be surveyed/staked.
1. Curb/Curb & Gutter - Top of curb, flow line and lip of gutter at begin of curve, end of curve, every 25' and at all changes in direction.
 2. Flushed concrete curb at begin of curve, end of curve, every 25' and at all changes in direction.
 3. Concrete pavers borders
 4. Concrete paving parking
 5. Concrete paving intersection
 6. Curb ramps (beginning, end, mid-point, back corners)
 7. Truncated dome pavers
 8. Concrete Expansion Joints
 9. Trees
 10. Irrigation Meter and Boxes
 11. Traffic Signal Poles and Boxes
 12. Storm Drainage Inlets and other drainage structures
 13. Trench drains
 14. Curb drains
 15. Storm Drainage Piping Inverts every 25' and at all changes in direction
 16. Storm Drainage Manhole Inverts
 17. Sanitary Sewer Piping Inverts every 25' and at all changes in direction
 18. Sanitary Sewer Manhole Inverts
 19. Sanitary Sewer Cleanout
 20. Sanitary Sewer Laterals
 21. Water Main Piping Inverts every 25' and at all changes in direction
 22. Water Main offsets
 23. Water Valves
 24. Air Release Valves
 25. Blow off
 26. Water Meters
 27. Fire Hydrants
 28. Joint Trench every 25' and at all changes in direction
 29. Utility Vaults
 30. Street light pull boxes
 31. Pedestrian Lighting
 32. Street Lighting
 33. Edges of bands a planter curbs
 34. Concrete band
 35. Corners of Concrete at AC paving limits
 36. Bottom and top of concrete speed table slopes
 37. Parking strip ticks (one stake each)
 38. Parking meter (one stake each)
 39. Handicap parking (8 Stakes)
 40. Bench
 41. News rack & corral (3 stakes each)
 42. Midblock arbor, park road arbor (12 stakes each)
 43. Bike rack

44. Trash receptacle
45. Fixed bollard, retractable bollard
46. Downspout storm lateral connection. Staking calculations to be adjusted based on field verified building drain locations exposed during demolition.
47. Other staking requirements as described in the Technical Specifications.

3.6 QUALITY CONTROL SURVEY

- A. These survey verifications shall occur one (1) working days prior to pouring concrete. Submit AutoCAD file of the quality control survey to the Engineer one (1) working days prior to pouring concrete curbs and foundations. AutoCAD survey files will show the topographic survey points with elevations and descriptions. Descriptions and elevations will be on the CAD points and not on a separate cut sheet. Contractor will replace any curbs, street lights and pole foundations not checked prior to pouring concrete.
- B. No concrete shall be poured until each quality control survey item described below has been approved by the Engineer, based on survey CAD file provided by contractor's surveyor. Prior to pouring concrete or proceeding beyond subgrade.
- C. Listed below are the project elements which require quality control survey and CAD submittal reviews prior to concrete pouring.
 1. Curbs and Curb & Gutter: After the curb forms are set, the contractor's licensed land surveyor shall survey the top of curb form every 25' and at key conforms.
 2. Subgrade for Street Paving: Field survey and certify the top of aggregate base design grades every 50 feet along the centerline of each lane or on corners of a 12'x50' grid in a parking lot for projects greater than or equal to 5,000 square feet of asphalt concrete. Submit certification signed by a Licensed Land Surveyor.

3.7 AS-BUILT SURVEY

- A. After the trench excavation and pipe installation, the Contractor's licensed land surveyor shall perform a topographic survey of the top of pipes for the utility lines and invert of pipe for all gravity pipes every 25', and at all changes in direction both horizontal and vertical, water valves, tees, water services, fire hydrants and at all manhole. This survey verification shall occur 3 days prior to backfilling trench. AutoCAD files will show the calculated survey points with elevations and descriptions.
- B. Contractor shall be responsible for documenting all changes to the plans. The Contractor/Developer shall provide the as-built survey in .dwg file (tied to NAD83 California State Planes, Zone III) format in AutoCAD 2017 or later version electronically and stored in a USB flash drive. The Contractor/Developer shall deliver one full set (22x34) of hard copy certified by the License Land Surveyor.

- C. A CAD drawing and coordinates data sheet shall be submitted to the Project Manager for approval. This task must be performed by a registered professional land surveyor licensed in the state of California. Data shall be tied to NAD83 California State Planes, Zone III, US Foot. The elevations shall be based on NAVD88 datum. This survey shall be delivered to the City's Engineer of Record. This survey shall be used for final as-built record drawings and calculations of the final quantity.

- D. The topographic survey for the as-built information shall be performed by a Professional Land Surveyor licensed in the State of California. After the trench excavation, pipe installation and approval from the inspector, the Contractor's licensed Land Surveyor shall perform a topographic/As-Built survey of all items described above in Submittals. Surveying will be of the actual pipe, conduit and/or finished facility. As-Built survey shall indicate the actual pipe material installed.

3.8 AS-BUILT GPS SURVEY

- A. Contractor shall be responsible for the GPS "As-Built" Survey, following the completion of construction, for the location and depth of installed underground utility lines, coordinates of manholes, manhole rim elevations, manhole invert elevations, manhole depths, utility boxes, manhole covers and similar appurtenances. A CAD drawing and coordinates data sheet shall be submitted to the project manager for approval. This task must be performed by a registered professional land surveyor licensed in the state of California. Data shall be tied to California State Plan Coordinate System.

END OF SECTION 01 71 23

SECTION 01 73 29 – CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. General: This section includes requirements for cutting and patching.

1.2 QUALITY ASSURANCE

- A. Installers: Employ skilled and experienced installers to perform cutting and patching.

1.3 SUBMITTALS

- A. Written Request: Submit written request in advance of cutting or altering elements affecting:
 - 1. Structural integrity of element.
 - 2. Integrity of weather-exposed or moisture-resistant elements.
 - 3. Efficiency, maintenance, or safety of element.
 - 4. Visual qualities of sight-exposed elements.
 - 5. Work of Owner or separate contractor.
- B. Request Requirements: Project name and location; description of all affected work; explanation of necessity for cutting, alteration or excavation; impact on the work of the Owner or any separate contractor, or on the structural or weatherproof integrity of the building; description of proposed work, including scope of cutting, patching, alteration, or excavation, products proposed to be used, trades who will complete the work, and extent of refinishing to be done; alternatives to cutting and patching; cost proposal, when applicable; written permission from any separate contractor whose work will be affected.
- C. Product Substitutions: Should conditions of Work or schedule indicate change of products from original installation, submit request for substitution as specified in [Section 01 25 00 - Substitution Procedures](#).
- D. Field Observation: Submit written notice to Project Manager designating date and time work will be uncovered.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 EXAMINATION

- A. General: Inspect existing conditions; include elements subject to damage or

movement during cutting and patching.

- B. After Uncovering Work: Inspect conditions affecting the installation of products, or performance of Work.
- C. Unsatisfactory Conditions: Report unsatisfactory or questionable conditions to the Project Manager in writing; do not proceed with work until Project Manager has provided further instructions.

3.2 PREPARATION

- A. Temporary Support: Provide as necessary to assure structural value or integrity of affected portion of Work.
- B. Protection:
 - 1. Provide devices and methods to protect other portions of the Project from damage.
 - 2. Provide protection from elements for that portion of the Project which may be exposed by cutting and patching, and maintain excavations free from water.

3.3 PERFORMANCE

- A. Cutting and Patching: Execute cutting, fitting, and patching, including excavation and fill if required, to complete Work and to:
 - 1. Fit the several parts together, to integrate with other Work.
 - 2. Uncover Work to install or correct ill-timed Work.
 - 3. Remove and replace defective and nonconforming Work.
 - 4. Remove samples of installed Work for testing.
 - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
- B. Methods: Execute Work by methods to avoid damage to other Work and to provide proper surfaces to receive patching and finishing. Cut masonry and concrete materials using masonry saw or core drill.
- C. Restoration: Restore Work with new products according to requirements of Contract Documents. In the case of failure to protect existing or new work, Contractor shall be responsible for costs to repair damage and for restoring the work.
- D. Penetrations: Fit Work tight to pipes, sleeves, ducts, conduits, and other penetrations through surfaces. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- E. Refinishing: Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for assembly, refinish entire unit.
- F. Hazardous Conditions: Identify hazardous substances or conditions exposed during the Work to Project Manager for decision or remedy.

END OF SECTION 01 73 29

SECTION 01 74 19 – CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**PART 1 - GENERAL**

1.1 SUMMARY

- A. Description: Provide Construction Waste Management including salvaging, recycling, and disposing of nonhazardous construction waste, as shown and specified per Contract Documents.

PART 2 - PRODUCTS

2.1 WASTE MANAGEMENT PLAN

- A. General: Develop plan, consisting of waste identification and construction methods employed to reduce the amount of waste generated, including separate sections for demolition and construction waste, to re-use and recycle minimum 75% of construction waste materials generated by the Work. Indicate quantities by weight or volume; use same units of measure throughout waste management plan.
- B. Quality Requirements: Refer to [Section 01 42 00 - References](#) for reference standards, applicable codes and definitions, and to the following:
1. American National Standards Institute (ANSI): ANSI 10.2 - Safety Code for Building Construction.
 2. American Society for Testing and Materials (ASTM): Materials and testing standards as identified throughout this Section or within referenced manufacturers' standard specifications.
 3. California Building Code (CBC): California Green Building Standards Code (CALGreen), latest edition: Title 24, Part 11.
 4. California Department of Resources Recycling and Recovery (CalRecycle):
 - a. General: Sustainable Building Guidelines.
 - b. Recycling and Recovery: Construction and Demolition Debris Recycling guidelines.
 5. California Occupational Safety and Health Administration (CalOSHA): Construction Safety Orders; 29 CFR, PART 1926 Safety and Health Regulations for Construction.
 6. Construction & Demolition Recycling Association (CDRA): Standards and guidelines.
 7. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

PART 3 - EXECUTION

3.1 PREPARATION

- A. General: Review Waste Management Plan procedures and identify locations established for salvage, recycling, and disposal. Designate and label specific areas on the site for separating materials to be salvaged, recycled, reused, donated, and sold.

3.2 IMPLEMENTATION

- A. City of Pittsburg Construction & Demolition (C&D) Recycling and Waste Management requires at least 65% job-site waste materials diverted from the landfill.
- B. For newly constructed buildings, demolition projects and all locally permitted additions and alterations to non-residential buildings or structures, Contractor shall submit the C&D Debris Waste Management Plan (WMP) showing diverting from landfills at least 65% of the construction materials generated by the project.
- C. Contractor may deliver all approved recycling materials such as wood, metal, plastics, concrete, roofing, cardboard, dirt, sheetrock, tires, appliances, mattresses, box springs, propane tanks, and electronic waste to Contra Costa Waste Service also known as Recycling Center & Transfer Station (RCTS), located at 1300 Loveridge Road, Pittsburg, California. All materials shall be weighed at the RCTS. For any material code of "CD" (Construction & Demolition Material Processing), 100% diversion rate will be applied to receipts indicating the material code "CW" (Clean Wood), "CG" (Clean Green), or "CR" (Clean Roofing).
- D. Recycled Materials: Separate recyclable waste from other waste materials, trash, and debris. Provide properly marked containers or bins for controlling recyclable waste until they are removed from Project site. Store materials away from construction area, off the ground and protect from the weather; do not store within drip line of remaining trees. Transport recyclable waste off Owner's property to recycling receiver or processor.
- E. Disposal: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction. Except as otherwise specified, do not allow waste materials that are to be disposed of to accumulate on-site. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas. Burning and burying of materials is not allowed.
- F. Contractor shall submit the following WMP and Water Assessment table forms.



CITY OF PITTSBURG
65 Civic Avenue
Pittsburg, CA 94565

**CONSTRUCTION AND DEMOLITION DEBRIS
WASTE MANAGEMENT PLAN (WMP)**

For City Use Only	
Project No. _____	_____
Date _____	Fee \$ _____
<input type="checkbox"/> Approved WMP	
<input type="checkbox"/> Approved Infeasibility Exemption	
<input type="checkbox"/> Denied _____	
<input type="checkbox"/> Further information required	
Staff Initials _____	

The City of Pittsburg C&D Recycling and Waste Management requirement states that at least **65% diversion** of job-site waste materials from the landfill. In order to process the application request, the following form must be completed, signed and submitted with an application fee.

- WMP Application Approval Request WMP Infeasibility Exemption Request

Property Owner Name/Ph.# _____	_____
Job-site Address: _____	Property Owner's Signature / Date
Contractor/Project Manager: _____	
Address: _____	
Phone Number: _____	Contractor/Project Manager's Signature / Date
Cellular Phone Number: _____	
Fax Number: _____	

1. Briefly state how materials will be sorted for recycling and/or salvage on the job site. See *Waste Assessment Table on back page*. Attach additional pages if necessary. *If no materials are targeted for recycling or salvage, please state why.

2. Will this project require the use of sub-contractors? Yes No If yes, briefly state how you plan to inform and ensure participation by the sub-contractors of your job-site recycling and waste management responsibility.

WASTE ASSESSMENT TABLE

- I. BEFORE START OF PROJECT: Identify the type of materials to be recycled, salvaged or disposed from the job-site in **Section I** of the Waste Assessment table. Identify the handling procedure, hauler and/or destination of each material type.
- II. UPON COMPLETION OF PROJECT: **Section II** is to be filled out with supporting documentation upon completion of project. Indicate the material **types and quantities** recycled, salvaged or disposed from this job-site. Official weight tags must be submitted with this completed report identifying 1) job site address, 2) weight of load(s), 3) material type(s) and 4) if materials were recycled, salvaged or disposed.

Material Type ↓	Section I Identify materials (✓)			Handling procedure, hauler or final destination of materials* (See #1)	Section II Quantity of each material (lbs)			City Use Only Acceptable weight tag(s) (staff initials)
	Recycle	Salvage	Landfill		Recycled	Salvaged	Landfilled	
Asphalt & Concrete								
Brick, Tile								
Building materials-doors, windows, fixtures, cabinets								
Cardboard								
Dirt/Clean Fill								
Drywall								
Carpet padding/ Foam								
Plate/window Glass								
Scrap Metals (steel, aluminum, brass, copper, etc.)								
Unpainted Wood & Pallets								
Yard Trimmings (brush, trees, stumps, etc.)								
Other: (Hazardous Materials)								
Garbage								
TOTALS								% Recycled

FOR CITY USE ONLY – PROJECT COMPLETION (version 06-19)

- Full Compliance
 Good Faith Effort to Comply
 Non-Compliance

Staff Signature / _____ Date

END OF SECTION 01 74 19

SECTION 01 77 00 – CLOSEOUT REQUIREMENTS**PART 1 - GENERAL**

1.1 SUMMARY

- A. This section describes contract closeout procedures including:
 - 1. Removal of temporary construction facilities
 - 2. Substantial completion
 - 3. Final completion
 - 4. Final cleaning
 - 5. Miscellaneous Project Record Submittals
 - 6. Release of claims

1.2 REMOVAL OF TEMPORARY CONSTRUCTION FACILITIES

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion Inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities.
- C. Restore permanent facilities used during construction to specified condition.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
 - 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete.
 - 2. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - 3. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
- B. Advise the Project Manager of pending insurance changeover requirements.
- C. Submit warranty bonds, final certifications, and similar documents.
- D. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
- E. Submit record drawings in PDF or hard copies in addition to CAD files, maintenance manuals, final project photographs, damage or settlement surveys, property surveys, and similar final record information.

- F. Deliver tools, spare parts, extra stock, and similar items.
- G. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.
- H. Complete startup testing of systems and instruction of the Owner's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
- I. Complete final cleanup requirements, including touchup painting.
- J. Touch up and otherwise repair and restore marred, exposed finishes.
- K. Inspection Procedures: On receipt of a request for inspection, the Project Manager will either proceed with inspection or advise the Contractor of unfilled requirements. The Project Manager will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
- L. The Project Manager will repeat inspection when requested and assured that the Work is substantially complete.
- M. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
- B. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.
- C. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
- D. Submit a certified copy of the Project Manager's final inspection list of items to be completed or corrected, endorsed and dated by the Project Manager. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Project Manager.
- E. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when the Owner took possession of and assumed responsibility for corresponding elements of the Work.
- F. Submit consent of surety to final payment.
- G. Submit a final liquidated damages settlement statement.
- H. Submit evidence of final, continuing insurance coverage complying with insurance

- I. Re-inspection Procedure: The Project Manager will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Project Manager.
 - 1. Upon completion of re-inspection, the Project Manager will prepare a certificate of final acceptance. If the Work is incomplete, the Project Manager will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
 - 2. If necessary, re-inspection will be repeated.

- J. Maintenance Manuals: Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2-inch 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Provide two (2) paper copies and a PDF. Mark appropriate identification on front and spine of each binder. Include the following types of information:
 - 1. Emergency instructions.
 - 2. Spare parts list.
 - 3. Copies of warranties.
 - 4. Wiring diagrams.
 - 5. Recommended "turn-around" cycles.
 - 6. Inspection procedures.
 - 7. Shop Drawings and Product Data.
 - 8. Fixture lamping schedule.

1.5 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Clean equipment and fixtures to a sanitary condition, clean or replace filters of mechanical equipment operated during construction, clean ducts, blowers and coils of units operated without filters during construction.
- D. Employ skilled workers for final cleaning.
- E. Clean Site; mechanically sweep paved areas.
- F. Remove waste and surplus materials, rubbish, and construction facilities from Site.

1.6 MISCELLANEOUS PROJECT RECORD SUBMITTALS

- A. Refer to Technical Specifications or other Specification Sections for miscellaneous record keeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or

filed, ready for use and reference. Submit to the Project Manager for City's records.

1.7 RELEASE OF CLAIMS

- A. Contract will not be closed out and final payment will not be made, subject to provisions of Section 7100 Public Contract Code until all pertinent aspects of [Division 00 - General Conditions](#) regarding undisputed/settled amounts are completed per requirements elsewhere in the Technical Specifications and/or Specifications and executed by Contractor and City.
- B. Contractor shall submit the following Agreement and Release of Any and All Claims Form.



CITY OF PITTSBURG
65 Civic Avenue
Pittsburg, CA 94565

AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS

This Agreement and Release of Claims ("Agreement and Release"), made and entered into this _____ day of _____, 20____, by and between the City of Pittsburg ("City"), and _____ ("Contractor"), whose place of business is at _____.

RECITALS

1. City and Contractor entered into Contract No. _____ in the City of Pittsburg, County of Contra Costa, State of California.
2. The Work under Contract No. _____ has been completed.

Now, therefore, it is mutually agreed between City and Contractor as follows:

AGREEMENT

3. Contractor will not be assessed liquidated damages except as detailed below:

Original Contract Sum	\$ _____
Modified Contract Sum	\$ _____
Payment to Date	\$ _____
Liquidated Damages	\$ _____
Payment Due Contractor	\$ _____

4. Subject to the provisions of this Agreement and Release, City shall forthwith pay to Contractor the sum of \$ _____ Dollars and _____ Cents under Contract No. _____, less any amounts withheld under the Contract or represented by any "Stop Notice" on file with City as of the date of such payment.
5. Contractor acknowledges and hereby agrees that there are no unresolved or outstanding claims in dispute against City arising from the performance of work under Contract No. _____. It is the intention of the parties in executing this Agreement and Release that this Agreement and Release shall be effective as a full, final and general release of all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities of Contractor against , City of Pittsburg, and all their respective directors, agents, officers, volunteers, consultants (including, but not limited to, Project Construction Manager and Architect/Engineer), employees, inspectors, assignees and transferees except for the Disputed Claims set forth in Paragraph 6, and continuing obligations described in Paragraph 8, below.



6. The following claims are disputed (hereinafter, the "Disputed Claims") and are specifically excluded from the operation of this Agreement and Release:

<u>Claim No.</u>	<u>Date Submitted</u>	<u>Description of Claim</u>	<u>Amount of Claim</u>
------------------	-----------------------	-----------------------------	------------------------

7. Consistent with California Public Contract Code, Contractor hereby agrees that, in consideration of the payment set forth in Paragraph 4, above, Contractor hereby releases and forever discharges City, all its respective directors, agents, officers, volunteers, employees, inspectors, assignees and transferees from any and all liability, claims, demands, actions or causes of action of whatever kind or nature arising out of or in any way concerned with the work under the Contract.
8. Guarantees and warranties for the Work, and any other continuing obligation of Contractor, shall remain in full force and effect as specified in the Contract Documents.
9. Contractor shall immediately defend, indemnify and hold harmless City of Pittsburg, and all its respective directors, agents, officers, volunteers, consultants, employees, inspectors, assignees and transferees from any and all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities that may be asserted against them by any of Contractor's suppliers and/or subcontractors of any tier and/or any suppliers to them for any and all labor, materials, supplies and equipment used, or contemplated to be used in the performance of Contract No. _____, except for the Disputed Claims set forth in Paragraph 6, above.
10. Contractor hereby waives the provisions of California Civil Code, Section 1542, which provides as follows:

A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him, must have materially affected his settlement with the debtor.
11. The provisions of this Agreement and Release are contractual in nature and not mere recitals and shall be considered independent and severable, and if any such provision or any part thereof shall be at any time held invalid in whole or in part under any federal, state, city, municipal or other law, ruling or regulations, then such provision, or part thereof shall remain in force and effect only to the extent permitted by law, and the remaining provisions of this Agreement and Release shall also remain in full force and effect, and shall be enforceable.
12. All rights of City shall survive completion of the Work or termination of Contract, and execution of this Release.



CITY OF PITTSBURG
65 Civic Avenue
Pittsburg, CA 94565

*** CAUTION: THIS IS A RELEASE - READ BEFORE EXECUTING ***

CITY OF PITTSBURG

CONTRACTOR

BY: _____ BY: _____

Date: _____ Date: _____

END OF SECTION 01 77 00

SECTION 01 78 00 – CLOSEOUT SUBMITTALS**PART 1 - GENERAL**

1.1 SUMMARY

- A. This section describes contract closeout submittals including:
1. Project record documents
 2. Project guarantee
 3. Warranties

1.2 PROJECT RECORD DOCUMENTS

- A. Project Record Documents required include:
1. Marked-up copies of Contract Drawings
 2. Marked-up copies of Shop Drawings
 3. Project Record Drawings
 4. Marked-up copies of Technical Specifications, Specifications, Addenda and Change Orders
 5. Marked-up Project Data submittals
 6. Record Samples
 7. Field records for variable and concealed conditions
 8. Record information on Work that is recorded only schematically
 9. GPS As-built Survey
 10. Warranty Bonds
- B. Specific Project Record Documents requirements that expand requirements of this Section are included in the individual Sections of Divisions 2 through 48 (when provided).
- C. General Project closeout requirements are included in [Section 01 77 00 - Closeout Requirements](#).
- D. Maintenance of Documents and Samples:
1. Store Project Record Documents and samples in the field office apart from Contract Documents used for construction.
 2. Do not permit Project Record Documents to be used for construction purposes.
 3. Maintain Project Record Documents in good order, and in a clean, dry, legible condition.
 4. Make documents and samples available at all times for inspection by Architect and Project Manager.
- E. City will provide one set of reproducibles and one set of the construction drawing prints and one project manual for the Contractor's use and copying during construction.

- F. Mark-up Procedure: During the construction period, maintain a set of Contract Drawings and Shop Drawings for Project Record Document purposes.
1. Mark these Drawings to indicate the actual installation where the installation varies appreciably from the installation shown originally. Give particular attention to information on concealed elements which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:
 - a. Dimensional changes to the Drawings
 - b. Revisions to details shown on the Drawings
 - c. Depths of foundations below the first floor
 - d. Locations and depths of underground utilities
 - e. Revisions to routing of piping and conduits
 - f. Revisions to electrical circuitry
 - g. Actual equipment locations
 - h. Duct size and routing
 - i. Locations of concealed internal utilities
 - j. Changes made by Change Order
 - k. Details not on original Contract Drawings
 2. Mark completely and accurately Project Record Drawing prints of Contract Drawings or Shop Drawings, whichever is the most capable of showing actual physical conditions. Where Shop Drawings are marked, show cross-reference on Contract Drawings location.
 3. Mark Project Record Drawing sets with red ink; use other colors to distinguish between changes for different categories of the Work at the same location.
 4. Mark important additional information which was either shown schematically or omitted from original Drawings.
 5. Note construction change directive numbers; alternate numbers; Change Order numbers and similar identification.
 6. Responsibility for Mark-up: Where feasible, the individual or entity who obtained Project Record Drawing data, whether the individual or entity is the installer, subcontractor, or similar entity, is required to prepare the mark-up on Project Record Drawings.
 - a. Accurately record information in an understandable and legible drawing technique.
 - b. Record data as soon as possible after it has been obtained. In the case of concealed installations, record and check the mark-up prior to concealment.
- G. Preparation of Transparencies: Prior to inspection for Certification of Substantial Completion, review completed marked-up Project Record Drawings with the Project Manager. When authorized, prepare a full set of correct reproducible of Contract Drawings and Shop Drawings.
1. Incorporate changes and additional information previously marked on print sets. Erase, redraw, and add details and notations where applicable. Identify and date each Drawing; include the printed designation "PROJECT RECORD DRAWINGS" in a prominent location on each Drawing.
 2. Refer instances of uncertainty to the Project Manager for resolution.
 3. Review of Reproducible: Before copying and distributing, submit corrected reproducible and the original marked-up prints to the Project Manager for

review. When acceptable, the Project Manager will initial and date each transparency, indicating acceptance of general scope of changes and additional information recorded, and of the quality of drafting.

- a. Reproducibles and the original marked-up prints will be returned to the Contractor for organizing into sets, printing, binding, and final submittal.
4. Copies and Distribution: After completing the preparation of reproducible Project Record Drawings, print one hard copy and a PDF of each Drawing, whether or not changes and additional information were recorded. Organize the copies into manageable sets. Bind each set with durable paper cover sheets, with appropriate identification, including titles, dates and other information on cover sheets.
 - a. Organize and bind original marked-up set of prints that were maintained during the construction period in the same manner.
 - b. Organize Project Record Drawings reproducibles into sets matching the print sets. Place these sets in durable tube-type drawing containers with end caps.
- H. Distribution of Marked-Up Drawings and Transparencies: Submit the marked-up Project Record Drawings sets, reproducibles, and one copy to the Project Manager for City's records.
- I. Project Record Technical Specifications and Specifications:
1. During the construction period, maintain one copy of the Project Manual, including addenda and modifications issued, for Project Record Document purposes.
 2. Mark the Project Record Manual to indicate the actual installation where the installation varies substantially from that indicated in Specifications and Modifications issued. Note related Project Record Drawing information, where applicable. Give particular attention to substitutions, selection of product options, and information on concealed installation that would be difficult to identify or measure and record later.
 - a. In each Technical Specifications and Specification Section where products, materials or units of equipment are specified or scheduled, mark the copy with the proprietary name and model number of the product furnished.
 - b. Record the name of the manufacturer, supplier and installer, and other information necessary to provide a record of selections made and to document coordination with Project Record Product Data submittals and maintenance manuals.
 - c. Note related Project Record Product Data, where applicable, for each principal product specified, indicate whether Project Record Product Data has been submitted in maintenance manual instead of submitted as Project Record Product Data.
 3. Upon completion of mark-up, submit Project Record Manual to the Project Manager for City's records.
- J. Project Record Product Data:
1. During the construction period, maintain one copy of each Project Record Product Data submittal for Project Record Document purposes.

- a. Mark Project Record Product Data to indicate the actual product installation where the installation varies substantially from that indicated in Project Record Product Data submitted. Include significant changes in the product delivered to the site, and changes in manufacturer's instructions and recommendations for installation.
 - b. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - c. Note related Change Orders and mark-ups of Project Record Drawings, where applicable.
 - d. Upon completion of mark-up, submit a complete set of Project Record Product Data to the Project Manager for City's records.
 - e. Where Project Record Product Data is required as part of maintenance manuals, submit marked-up Project Record Product Data as an insert in the manual, instead of submittal as Project Record Product Data.
- K. Material, Equipment and Finish Data:
1. Provide data for primary materials, equipment and finishes as required under each Technical Specifications/Specification section.
 2. Submit one set prior to final inspection, bound in 8-1/2 inches by 11 inches three-ring binders with durable plastic covers and a PDF; provide typewritten table of contents for each volume.
 3. Arrange by Technical Specifications/Specification division and give names, addresses, and telephone numbers of subcontractors and suppliers. List:
 - a. Trade names.
 - b. Model or type numbers.
 - c. Assembly diagrams.
 - d. Operating instructions.
 - e. Cleaning instructions.
 - f. Maintenance instructions.
 - g. Recommended spare parts.
 - h. Product data.
- L. Miscellaneous Project Record Submittals:
1. Refer to other Technical Specifications/Specification Sections for miscellaneous record keeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Submit to the Project Manager for City's records. Field records documenting elevations and locations of completed improvements shall require Contractor-retained State of California Licensed surveyor's certification stamp. Categories of requirements resulting in miscellaneous records include, but are not limited to the following:
 - a. Field records on excavations and foundations
 - b. Field records on underground construction and similar work
 - c. Survey showing locations and elevations of underground lines
 - d. Invert elevations of drainage piping
 - e. Surveys establishing building lines and levels

- f. Authorized measurements utilizing unit prices or allowances
 - g. Records of plant treatment
 - h. Ambient and substrate condition tests
 - i. Certifications received in lieu of labels on bulk products
 - j. Batch mixing and bulk delivery records
 - k. Testing and qualification of tradespersons
 - l. Documented qualification of installation firms
 - m. Load and performance testing
 - n. Inspections and certifications by governing authorities
 - o. Leakage and water-penetration tests
 - p. Fire resistance and flame spread test results
 - q. Final inspection and correction procedures
- M. GPS As-built Survey: Refer to [Section 01 71 23 - Construction Surveying](#) for As-Built GPS Survey.
- N. Periodic Review:
- 1. Make additions to the Project Record Documents as they occur.
 - 2. Make the Project Record Documents available to the Project Manager for periodic review. The Project Manager's review of the current status of Project Record Documents is a requisite to approval of requests for progress payment.
 - 3. Prior to submitting each request for progress payment, secure the Project manager's approval of the current status of the Project Record Documents.
 - 4. Prior to submitting request for final Payment, submit the final Project Record Documents to the Project Manager for approval.
- O. Submittal: At the completion of Project, deliver record documents to Project Manager.
- 1.3 PROJECT GUARANTEE
- A. Requirements for Contractor's guarantee of completed Work are included in [Division 00 - General Conditions](#). Contractor shall guarantee Work done under Contract against failures, leaks or breaks or other unsatisfactory conditions due to defective equipment, materials or workmanship, and perform repair work or replacement required, at Contractor's sole expense, for period of one year, unless otherwise subject to any special warranty periods of longer duration, from date of Final Acceptance.
- B. Neither recordation of final acceptance nor final certificate for payment nor provision of the Contract nor partial or entire use or occupancy of premises by City shall constitute acceptance of Work not done in accordance with Contract Documents nor relieve Contractor of liability in respect to express warranties or responsibility for faulty materials or workmanship.
- C. City may make repairs to defective Work as set forth in paragraph 10.C.3 of [Division 00 - General Conditions](#), if, within five (5) working days after mailing of written notice of defective work to Contractor or authorized agent, Contractor shall neglect to make or undertake repair with due diligence; provided, however, that in case of leak or emergency where, in opinion of City, delay would cause hazard to

health or serious loss or damage, repairs may be made without notice being sent to Contractor, and Contractor shall pay cost thereof.

- D. If, after installation, operation or use of materials or equipment to be furnished under Contract proves to be unsatisfactory to Project Manager, City shall have right to operate and use materials or equipment until it can, without damage to City, be taken out of service for correction or replacement. Period of use of defective materials or equipment pending correction or replacement shall in no way decrease guarantee period required for acceptable corrected or replaced items of materials or equipment.
- E. Nothing in this Section shall be construed to limit, relieve or release Contractor's, subcontractors' and equipment suppliers' liability to City for damages sustained as result of latent defects in equipment caused by negligence of suppliers' agents, employees or subcontractors. Stated in another manner, warranty contained in the Contract Documents shall not amount to, nor shall it be deemed to be, waiver by City of any rights or remedies (or time limits in which to enforce such rights or remedies) it may have for defective workmanship or defective materials under laws of this State pertaining to acts of negligence.

1.4 WARRANTIES

- A. Execute Contractor's submittals and assemble warranty documents executed or supplied by subcontractors, suppliers, and manufacturers.
 - 1. Provide table of contents and assemble in 8-1/2 inches by 11 inches three-ring binder with durable plastic cover.
 - 2. Assemble in Technical Specifications/Specification Section order.
 - 3. Submit material prior to final application for payment.
 - 4. For equipment put into use with City's permission during construction, submit within ten (10) working days after first operation.
 - 5. For items of Work delayed materially beyond Date of Substantial Completion, provide updated submittal within ten (10) working days after acceptance, listing date of acceptance as start of warranty period.
 - 6. Warranties are intended to protect City against failure of work and against deficient, defective and faulty materials and workmanship, regardless of sources.
 - 7. Limitations: Warranties are not intended to cover failures which result from the following:
 - a. Unusual or abnormal phenomena of the elements
 - b. Vandalism after substantial completion
 - c. Insurrection or acts of aggression including war.
- B. Related Damages and Losses: Remove and replace Work which is damaged as result of defective Work, or which must be removed and replaced to provide access for correction of warranted Work.
- C. Warranty Reinstatement: After correction of warranted Work, reinstate warranty for corrected Work to date of original warranty expiration or to a date not less than ninety (90) days after corrected Work was done, whichever is later.
- D. Replacement Cost: Replace or restore failing warranted items without regard to

anticipated useful service lives.

- E. Warranty Forms: Submit drafts to Project Manager for approval prior to execution. Forms shall not detract from or confuse requirements or interpretations of Contract Documents.
- F. Warranty shall be countersigned by manufacturers.
- G. Where specified, warranty shall be countersigned by subcontractors and installers.
- H. Rejection of Warranties: City reserves right to reject unsolicited and coincidental product warranties which detract from or confuse requirements or interpretations of Contract Documents.
- I. Term of Warranties: For materials, equipment, systems and workmanship warranty period shall be one-year minimum from date of final completion of entire Work except where:
 - 1. Detailed specifications for certain materials, equipment or systems require longer warranty periods.
 - 2. Materials, equipment or systems are put into beneficial use of City prior to Final Completion as agreed to in writing by Project Manager.
- J. Warranty of Title: No material, supplies, or equipment for Work under Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by seller or supplier. Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all work to deliver premises, together with improvements and appurtenances constructed or placed thereon by Contractor, to City free from any claim, liens, security interest, or charges, and further agrees that neither Contractor nor any person, firm, or corporation furnishing any materials or labor for any Work covered by Contract shall have right to lien upon premises or improvement or appurtenances thereon. Nothing contained in this Paragraph, however, shall defeat or impair right of persons furnishing materials or labor under bond given by Contractor for their protection or any rights under law permitting persons to look to funds due Contractor in hands of City.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION 01 78 00

SECTION 02 21 13 – SURVEY MONUMENTS**PART 1 - GENERAL**

1.1 SUMMARY

- A. Section Includes furnish and install Cast-in-place Portland Cement Survey Monuments and all appurtenant work.
- B. Related Requirements:
 - 1. [Section 03 30 00 – Utility Cast-in-place Concrete](#)
 - 2. [Section 31 23 16 – Utility Trenching](#)

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. [Section 01 29 00 - Payment Procedures](#): Contract Sum/Price modification procedures.
- B. Survey Monuments
 - 1. Basis of Measurement: Measured on a per unit basis when applicable.
 - 2. Basis of Payment: Includes concrete, placement accessories, consolidating, leveling, troweling, and curing.

1.3 REFERENCE STANDARDS

- A. ASTM International:
 - 1. ASTM A48 – Specifications for Gray Iron Castings
- B. Caltrans Standard Specifications
 - 1. Section 55 – Steel Structures
 - 2. Section 78-2 – Survey Monuments

1.4 COORDINATION

- A. Coordinate placement of concrete formwork and placement of form accessories.

1.5 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. Product Data: Submit data on bronze survey markers, frame and covers.

1.6 CLOSEOUT SUBMITTALS

- A. [Section 01 78 00 - Closeout Submittals](#): Requirements for submittals.

PART 2 - PRODUCTS

2.1 FRAME AND COVER

- A. Monument frame and cover shall be gray iron castings conforming to ASTM A48, Class 30B, designed for a 15,000 lb. wheel load. Monument cover shall be marked "Monument". Cover shall be non-rocking and will fit in its frame.
- B. Monument Frame and Cover shall be Chrisp Company Casting Part No.9279 or 9277M, Phoenix Iron Works 2501 or approved equal.

2.2 BRONZE SURVEY MARKER

- A. Bronze survey marker shall be 2-1/2 inch domes disk with stem and appropriate survey information as specified on the Drawings.
- B. Brass Survey markers are not acceptable unless they are lead-free.

2.3 FORMING TUBE

- A. Tubes for forming Portland cement concrete collar and monument shall be non-metallic type of the size and dimensions shown on the Drawings.

2.4 PORTLAND CEMENT CONCRETE

- A. Portland Cement Concrete for collars and footings shall conform with [Section 03 30 00 – Utility Cast-in Place Concrete](#).

2.5 HOT MIX ASPHALT

- A. Hot Mix Asphalt concrete around monuments shall be in conformance with [Section 32 12 16 – Asphalt Paving](#).

PART 3 - EXECUTION

3.1 GENERAL

- A. [Section 01 70 00 - Execution](#): Requirements for installation examination.
- B. Monuments shall not be installed until the asphalt paving has been completed.
- C. Concrete, form tube, bronze survey marker, frame and cover, and asphalt paving shall be installed as shown on the Drawings.

- D. Cast the monuments in place in neat holes using forming tubes.
- E. Thoroughly consolidate the concrete and cure it by the water method per Section 90-1.03B (2) Water Method of State Standard Specifications.
- F. Locate the monument such that the point being referenced falls within 1/2-inch from the center of the disk when the disk is placed in the center of the monument.
- G. Place the survey marker disk before the concrete reaches its initial set. Firmly embed the disk in the concrete.
- H. If base and surfacing are not shown around a monument, fill any space around it with earth. Water and tamp the earth into place.
- I. Surplus excavated material shall become the property of the Contractor and the Contractor shall be responsible for disposal of excess excavated material.
- J. The Concrete collar shall be circular – 8 inches in diameter around the frame and cover and shall be covered with a minimum of two (2) inches of asphalt concrete paving to level with the adjacent surfacing.

3.2 EXISTING MONUMENT PROTECTION

- A. All existing survey monuments and benchmarks shall be protected, unless otherwise shown on the Drawings. Upon discovery of a survey monument not identified and located by the City, immediately:
 - 1. Stop work near the monument
 - 2. Notify the Project Manager
- B. Do not resume work near the monument until authorized by the Project Manager.
- C. Monuments placed by Surveyors must be preserved, in accordance with State Business & Professions Code section 8771.
- D. The Contractor shall exercise caution when working around monuments so as not to disturb them. During milling, grinding, excavation or other operations, the Contractor shall work around survey monuments unless specifically otherwise indicated on the Plans. If a monument is disturbed or damaged during adjusting, milling or other operations, the Contractor shall be responsible for all costs associated with the reestablishment of the monument including but not limited to surveying performed by a Licensed Surveyor and filing documents with County and constructing the new monument.
- E. The existing monument consisting of a concrete core and brass tack, nail or other marking device located inside of a survey monument cover with frame, shall not be disturbed until the contractor's Licensed Land Surveyor has established of reference points to preserve the location of the monument, in accordance with State Business & Professions Code section 8771.
- F. Any survey monument disturbed shall be replaced in accordance with the State

Business & Professions Code section 8771 and Contra Costa County Standard Drawings CA40. The Contractor shall be responsible for all costs associated with the reestablishment of the monument including but not limited to surveying performed by a Licensed Surveyor and filing documents with County and constructing the new monument.

- G. Contractor shall prepare corner record, submit corner record to the County Surveyors and submit acceptance of monument to the Project Manager.

3.3 CONCRETE PROTECTION

- A. The Contractor shall protect all concrete against injury until final acceptance by the City.

END OF SECTION 02 21 13

SECTION 02 32 19 – EXPLORATORY EXCAVATIONS**PART 1 – GENERAL**

1.1 SUMMARY

- A. Section Includes: Exploratory excavation by potholing at all utility conflicts including the locations identified on the plans to determine the location, depth, width, pipe diameter or concrete ductbank thickness, type and condition of existing underground utilities.

1.2 REFERENCES

- A. Cal/OSHA – California Division of Occupation Safety and Health
- B. Caltrans Standard Specifications
 - 1. Section 15 – Existing Facilities
 - 2. Section 19 - Earthwork
- C. Underground Services Alert (USA)

1.3 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. Submittal Data:
 - 1. Contractor shall contact USA to verify the actual location of the pothole prior to beginning pothole. Submit letters or correspondences of advance notifications to the utility companies as listed below in Part 3.
 - 2. Contractor shall apply and pay for all permits connected with the Work.
 - 3. Contractor shall submit temporary traffic control plan for City's approval prior to beginning any exploratory excavation.
 - 4. Contractor shall submit potholing methodology.
 - 5. Contractor shall submit photographs in jpeg or PDF format of the pothole locations with the pothole number identified on the photograph as designated below.
 - 6. Pothole data shall also include the thickness of asphalt concrete/Portland cement concrete pavement and aggregate base.
 - 7. At a minimum, pothole data shall be submitted in a tabular format.
See sample potholing submittal format below:

#	Utility	Pipe diameter (inch)	Concrete ductbank Width x Depth	Depth to top of pipe or concrete ductbank	Material	AC/AB Depth (inch)	Northing or Distance from fixed object A	Easting or Distance from fixed object B
PH#1	Water	12	-	3'-6"	PVC	4/8	15 ft from FH	12 ft from SSMH
PH#2	Telecom Duct	-	2 ft x 3 ft	4'-2"	Concrete Ductbank	6/10	22 ft from SDMH	40 ft from WV

1.4 MEASUREMENT & PAYMENT

- A. Full compensation for furnishing all labor, tools, equipment's, incidentals for exploratory excavations by potholing for any utility conflicts to verify the location, depth, diameter, material and thickness of the existing underground utility, including contacting USA, utility companies, permits, traffic control, compliance with Cal/OSHA, saw cut, excavation, exposing the existing underground utility, measuring depths, diameter and distances as required, backfill, surface restoration, striping restoration, shall be considered as incidental to the item most closely related to and no separate compensation will be allowed therefor.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 POTHOLING

- A. Contractor shall be responsible for notifying the utility companies for any inspections prior to potholing.
- B. Contractor shall be responsible for locating utilities and providing utility markings of the underground utilities prior to potholing.
- C. Where gas distribution or gas transmission lines are present, Contractor shall have a PG&E representative present on site during potholing.
- D. Contractor shall be responsible for contacting and notifying the utility companies three (3) working days prior to beginning any potholing. Contractor shall be responsible for coordinating any inspections with the respective utility company.
- E. Two (2) weeks prior to any construction, potholing shall be performed at all utility conflicts and at all pothole locations shown on the Drawings in order to determine the location, depth, width, pipe diameter, thickness type and condition of existing underground utilities and shall conform to the Technical Specifications.

- F. Potholing will be a separate move-in from the underground utility trenching and will be separate from the trenching operations; Exploratory excavations shall be performed with potholing equipment. Potholing as part of the trenching operations is not an acceptable method. Potholing will be shown as a separate line item in the project construction schedule.
- G. The methods such as vacuum potholing and other excavation methods used by the Contractor for potholing shall be approved by the Project Manager in advance of commencing any work, along with the required traffic controls.
- H. After the completion of the USA markings, but before the actual potholing, Contractor will host a field meeting with the City to review the locations of the potholes which will be painted in the field. During the meeting, the Project Manager may relocate the potholes based on the field conditions. The Contractor's price bid will include allowance for moving the locations of the potholes during the pre-pothole site meeting. No guarantee is made as to the exact locations of the existing utilities.
- I. The Contractor shall provide the Project Manager in a tabular format the location, type, depth, diameter and condition of each utility found prior to commencing construction. The potholing table shall include a neatly redlined plan. No trenching work shall be performed until the Project Manager reviews the potholing information submitted by the Contractor.
- J. Contractor shall provide the potholing information to the Project Manager and allow one (1) week for any necessary revisions to the design plan and profiles prior to sawcutting and trenching of the proposed pipe alignment or as shown on the Drawings.
- K. The Contractor shall take care not to damage any existing facilities during potholing. Existing facilities damaged by the Contractor's operations shall be repaired or replaced to the satisfaction of the City Engineer and Utility companies, all at the Contractor's expense.
- L. Backfill with Controlled Low Strength Materials (CLSM) and complete surface restoration to match existing conditions in kind.
- M. When pothole locations are located in concrete pavement, Contractor shall remove and replace concrete pavement and base from the nearest joint to joint to match the existing concrete pavement thickness.

END OF SECTION 02 32 19

SECTION 02 41 00 - DEMOLITION

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes but not limited to:
 - 1. Demolition & Permits
 - 2. Removal and Disposal
 - 3. Recycling & Salvaging

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- 1. Full compensation for demolition shall be considered as included in the contract prices paid for bid items of work involved and no additional compensation will be allowed therefor.

1.3 REFERENCES & RELATED WORK SPECIFIED ELSEWHERE

- A. Bay Area Air Quality Management District (BAAQMD) – <http://www.baaqmd.gov/>
 - 1. Regulation 11 (Hazardous Pollutants) and Rule 2 (Asbestos Demolition, Renovation, and Manufacturing).
- B. CALGreen Construction Waste Management Requirements
 - 1. https://www.calrecycle.ca.gov/lgcentral/library/canddmodel/instruction/new_structures
- C. California Occupational Safety and Health (Cal/OSHA)
 - 1. General Requirements
- D. Commercial
 - 1. USA Underground Service Alert
- E. Division 1
 - 1. General Requirements

1.4 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. The Contractor shall submit to the City a haul route for approval, prior to commencing any work. Truck traffic movement is limited between the hours of 9am to 3pm, unless approved by the Project Manager.
- C. Before disposing of any demolished material prior to any work
 - 1. Submit a written agreement from the property owner

- a. For the use of the property
 - b. absolving the City from responsibility in connection with the property.
2. Obtain authorization to start

- D. Before Contract acceptance, submit a document signed by the owner of the material disposal site stating that the Contractor has complied with the Contractor-Owner agreement.
- E. Demolition Schedule: The Contractor shall submit a complete coordination schedule for demolition work including shut-off and continuation of utility services prior to start of the work. The schedule shall indicate proposed methods and operations of facility demolition, and provide a detailed sequence of demolition and removal work to ensure uninterrupted operation of occupied areas.
- F. All affected private properties will receive door hanger notices two (2) weeks prior to any utility shutoffs or frontage demolition and improvements.

1.5 JOB SITE CONDITIONS

- A. The Contractor shall visit the site and inspect the existing facilities. The City assumes no responsibility for actual condition of facilities to be demolished.
- B. Contractor shall use all means necessary to prevent the spread of dust during performance of the work. Thoroughly moisten all surfaces as required to prevent the generation of dust. No washing of streets is permitted.
- C. All liquid, and slurry generated during pavement sawcutting shall be collected and removed from the site. These liquids shall not be washed into the area storm drainage system.
- D. Contractor shall remove hazardous materials as described per the Project Asbestos and Lead Inspection Report.
- E. The Contractor prior to the commencement of the demolition or renovation, thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable Asbestos Containing Materials (ACM).
- F. The Contractor must also provide the Environmental Protection Agency (EPA) with a 10 working day advance notice for any disturbance of Regulated Asbestos-Containing Material (RACM) greater than 160 square feet or 260 lineal feet, and as specified in Code of Federal Regulations (CFR) Title 40, Chapter I, Subchapter C, Part 61, Subpart M, Section 61.145.

1.6 DELIVERY, STORAGE AND HANDLING

- A. [Section 01 60 00 - Product Requirements](#): Requirements for transporting, handling, storing, and protecting products.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Notify anyone to be affected by demolition and construction activities including but not limited to: all schools, residences, businesses, garbage collection (Pittsburg Disposal Service-a Garaventa company), utility companies (PG&E-Gas Distribution, PG&E Gas Transmission, PG&E-Electric, AT&T, Comcast, Verizon, Chevron Pipeline Co, Shell Pipeline Co, Kinder Morgan, Calpine etc.), Delta Diablo (Sewer District), BART, County Connection (bus transit agency), the Owner, etc. at least ten (10) working days prior to commencing the work of this section.
- B. Site Inspection:
 - 1. Prior to all work of this section, carefully inspect the site and all objects designated to be removed and to be preserved.
 - 2. Locate all existing active utility lines traversing the site and determine the requirements for their removal and/or protection.
- C. Clarification:
 - 1. The Drawings do not purport to show all objects existing on the site.
 - 2. Before commencing the work of this section, verify with the Owner all objects to be removed and all objects to be preserved
- D. Scheduling:
 - 1. Schedule all work in a careful manner with all necessary consideration for neighbors, operation of the existing facilities, and the public.
 - 2. Avoid interference with the use of, and passage to and from, residences and adjacent facilities.
- E. Protection of Utilities: Preserve in operating condition all active utilities traversing the site and designated to remain.

3.2 WATER POLLUTION CONTROL

- A. Water sprinkling, temporary enclosures, chutes and other suitable methods shall be used to limit dust and dirt rising and scattering in the air. The Contractor shall comply with all government regulations pertaining to environmental protection.
- B. The Contractor shall use equipment that will generate the least amount of dust. The Contractor shall provide dust control at all times including Saturdays, Sundays, and holidays unless directed otherwise by the Project Manager.
- C. Whenever the Contractor, in the opinion of the Project Manager, is negligent in controlling dust, the Project Manager may direct attention to the existence of a dust hazard and instruct the Contractor to immediately alleviate the dust hazard.

The Contractor shall be responsible for any damage cause by dust generated as a result of the Contractor's operations.

- D. The Contractor shall have a commercial standard street vacuum/sweeper operational and in operation during each working day. The street vacuum/sweeper shall be able to pick up sand, gravel, dust, and debris, and other things, shall minimize dust generation, and shall also be available during the day and shall sweep as outlined below and as directed by the Project Manager.
- E. If the Contractor is performing work that generates dust and debris then during the day (including weekends and holidays) the sweeper shall sweep the project area (full length, width, and all lanes) twice a day sometime between 9:00a.m. and 11:00a.m. and also between 2:00p.m. and 4:00p.m. Hardscape surfaces (including pavers, sidewalks, and areas inaccessible by a mechanical sweeper) shall have dirt, dust, and debris removed by hand sweeping. If the Contractor fails to fulfill the responsibilities of this section, the City will perform or contract with others to perform the work and all costs incurred to the City shall be withheld from future payments to the Contractor.
- F. The Contractor shall clean the sidewalk and gutter as many times as needed to make sure the sidewalk and gutter are out of dirt, debris and small rocks at all times. The Contractor shall be prepared to sweep surfaces immediately at the request of the Project Manager, should the Project Manager deem it necessary for public safety and to avoid damage to properties. If streets are not satisfactorily cleaned within 12 hours from verbal or written notice by City personnel, the City will hire an independent sweeping company and deduct the cost for such work from payments due to the Contractor.
- G. Water shall not be used in a manner that creates hazardous or objectionable conditions such as ice, flooding, or pollution.
- H. The site shall be kept neat and orderly during the demolition to the maximum extent practical.
- I. Public right-of-way and private property shall be kept free of debris at all times.
- J. Stockpiles of demolished items or materials shall be removed from the site on a daily basis or stored in waste containers which shall be emptied on a weekly basis or as conditions require in order to manage the accumulation of waste.
- K. Accumulations of flammable materials shall not be permitted.

3.3 PROTECTION

- A. Safe passage of persons around area of demolition shall be provided in accordance with all safety and regulatory requirements. Operations shall be conducted to prevent damage to adjacent buildings, structures, other facilities, people and property. Safe passage provided by Contractor will be ADA complaint.
- B. Interior and exterior shoring, bracing, or supports shall be provided to prevent

movement, settlement or collapse of structures to be demolished and to adjacent facilities to remain.

- C. Existing landscaping materials, structures, irrigation, and appurtenances which are not to be demolished shall be protected and maintained as necessary.
- 1. If Tree roots exist within the project area the contractor shall notify the City's representative for protection or removal.
- D.
- E. The Contractor shall protect and maintain conduits, drains, sewers, pipes and wires that are not to be demolished.
- F. Use all means necessary to protect existing objects designated to remain or to be preserved must remain operational during installation of the replacement pipeline. In the event of damage, immediately notify the Owner and make all repairs and replacements necessary for approval by the Owner at no additional cost to the Owner.

3.4 SURFACE DEMOLITION

- A. All asphalt concrete and all Portland cement concrete curbs, gutters, sidewalks, access ramps and driveways shall be saw-cut at the nearest scoreline or deep joint and removed entirely to the saw-cut limits.
- B. Where adjacent pavement or concrete is broken or damaged sufficiently to prohibit a sound replacement the entire damaged section shall be removed to the limits determined by the Project Manager.
- C. Asphalt concrete, sidewalk, concrete curb, and gutter materials to be demolished shall be broken up and removed from the site by the Contractor at no additional cost to the City.
- D. Where shown on the Drawings, the Contractor shall remove required pavement section including base material. Subsoil removal is also included where required to achieve design subgrade.

3.5 DEMOLITION BELOW THE SURFACE

- A. Existing structures, pavement slabs and structural sections to be abandoned shall be demolished to an elevation three feet below finished grade. Their bottoms (if any remain) shall be broken thoroughly to prevent entrapment of water and all voids backfilled with suitable backfill
- B. Demolition areas and voids resulting from demolition of structures below the surface shall be completely filled.
- C. All fill, compaction, and holes created by demolition work shall be backfilled with imported clean fill. Lay fill down in layers not exceeding 6" thickness and compact per the earthwork specifications. Grade the site to drain to the nearest storm

drainage system without any low points.

- D. All fill and compaction surfaces shall be graded to meet adjacent contours and to provide flow to surface drainage structures, or as shown on the Drawings.
- E. Pipes to be demolished that require no future connection shall be removed to the extent required, sealed and capped. Pipe sections shall be removed either by sawcutting, removing a complete pipe section to an existing joint, or other adequate means which results in a clean joint.
- F. The Contractor shall demolish or dismantle and remove all items that are noted for demolition and removal in the Contract Documents and that will interfere with the planned construction, or as otherwise directed by the Project Manager.
- G. The Contractor shall demolish or dismantle and remove all abandoned conduits or structures that are encountered during the prosecution of the work and which interfere with the construction of the work upon the approval of the Project Manager.

3.6 REMOVAL OF EXISTING WATER AND SEWER-SERVICES

- A. The Contractor shall submit to the City for approval a detailed sequence and method of work for staking, abandonment of existing sewer services, water services, water meters, boxes, and cleanouts. The submittal shall include an overview and general sequence of work; time and dates for each removal; and method and procedure for each removal.
- B. ABANDONMENT OF SEWERS:
 - 1. Contractor shall request an encroachment permit with Delta Diablo (District) for abandoning any existing sanitary sewer lateral pipes.
- C. ABANDONMENT OF WATER LINES:
 - 1. For service lines less than 4" diameter:
 - (a) Contractor shall pothole, cut out at the main, remove the corporation stop and saddle, and install a minimum 12" full circle 316 stainless steel repair clamp with 316 accessories around the pipe.
 - (b) Abandon unused existing water service lines in place, if at least 18" below grade to the Project Manager's satisfaction.
 - 2. Contact City Water Department in writing 48 hours in advance of abandonment, to check the condition of the existing services prior to abandonment.
- D. GENERAL ABANDONMENT:
 - 1. When salvage materials are shown on the Drawings; salvage and arrange the existing facilities (i.e., meters, manhole covers, manhole frames, etc.) to be dropped off at the City's Corporation Yard by prior arrangement.
 - 2. Properly remove or abandon in place unused existing City utility service lines discovered that were left in place by others.
 - 3. Contact utility companies for removal, abandonment, adjustment or relocation of their facilities.

4. Contractor is responsible for verifying the location of any existing utilities.
5. Abandonment of pipes will include filling pipe with slurry as specified in Section 19-3.02G – Controlled Low-Strength Material of the State Standard Specification and capping the pipes at the ends.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. See [Section 01 74 19 – Construction Waste Management and Disposal](#) for disposal, salvaging and recycling of demolished materials.
- B. Demolition and removal of debris shall be conducted to ensure minimum interference with roads, streets, walks and other adjacent occupied or used facilities which shall not be closed or obstructed without permission from the City. Alternate routes shall be provided to circumvent closed or obstructed traffic ways.
- C. The Contractor shall comply with all pertinent regulations of Cal/OSHA and local codes and practices.
- D. All existing materials that are designated to be salvaged shall be removed, cleaned and hauled to the City Corporation Yard, unloaded and stockpiled unless otherwise directed by the Project Manager.
- E. Site debris, rubbish and other materials resulting from demolition operations shall become the property of the Contractor and shall be removed by the Contractor at the Contractor's expense. The proper and legal disposal of demolished materials shall be the responsibility of the Contractor. All disposal sites and recycling facilities shall be approved by the City prior to initiation of the Work.
 1. Concrete debris shall be transported to a recycler of such materials.
 2. Hazardous materials shall be handled and disposed of in accordance with all applicable laws, codes, and regulations.

3.8 PATCHING AND REPAIRING

- A. The Contractor shall provide patching, replacing, repairing and refinishing of damaged areas or damaged adjacent facilities involved in the demolition.
- B. New concrete shall match the existing adjacent surfaces, in kind, or of better quality, to the satisfaction of the Project Manager, at no cost to the City or to the owners of the facilities.

3.9 CLEAN UP

- A. During and upon completion of work the Contractor shall promptly remove unused tools and equipment, surplus materials, rubbish, debris and dust and shall leave areas affected by work in a clean, approved condition.
- B. The Contractor shall clean adjacent structures and facilities of dust, dirt and debris caused by demolition, as directed by the Project Manager, and return adjacent areas to condition existing prior to start of work.

- C. The Contractor shall clean and sweep daily all street and roads affected by its operation.

END OF SECTION 02 41 00

SECTION 03 30 00 – UTILITY CAST-IN-PLACE CONCRETE**PART 1 – GENERAL**

1.1 SUMMARY

- A. Section Includes Utility Cast-in-Place Concrete for Following Items:
1. Concrete pads around Utility facilities
 2. Miscellaneous concrete footings for signs, street lighting, retaining walls, fence posts.
 3. Thrust blocks.
 4. Manhole Base.
 5. Concrete aprons around water valves and manholes
 6. Concrete Cap for shallow cover:
 7. Retaining Walls
 8. Survey Monuments
 9. Electrical or Communications Duct Banks
 10. Drainage Inlets
 11. Concrete Headwalls
- B. Related Requirements:
1. [Section 31 23 16 – Utility Trenching](#)
 2. [Section 33 05 13 - Manholes and Structures](#)
 3. [Section 33 12 13 - Water Service Connections](#)
 4. [Section 33 11 13 – Water Distribution Piping](#)
 5. [Section 33 12 16 - Water Distribution Valves](#)
 6. [Section 33 12 19 - Water Distribution Fire Hydrants](#)
 7. [Section 33 31 13 - Sanitary Sewer Piping](#)
 8. [Section 33 41 13 - Storm Drainage Piping](#)

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

1. Full compensation for utility cast-in-place concrete shall be considered as included in the contract prices paid for bid items of work involved and no additional compensation will be allowed therefor.

1.3 REFERENCE STANDARDS

- A. American Concrete Institute:
1. ACI 301 - Specifications for Structural Concrete.
 2. ACI 305R - Guide to Hot Weather Concreting.
 3. ACI 306.1 - Standard Specification for Cold Weather Concreting.
 4. ACI 308.1 - Specification for Curing Concrete.
 5. ACI 318 - Building Code Requirements for Structural Concrete.

B. ASTM International:

1. ASTM C31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
2. ASTM C33 - Standard Specification for Concrete Aggregates.
3. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
4. ASTM C42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
5. ASTM C94 - Standard Specification for Ready-Mixed Concrete.
6. ASTM C143 - Standard Test Method for Slump of Hydraulic-Cement Concrete.
7. ASTM C150 - Standard Specification for Portland Cement.
8. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
9. ASTM C173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
10. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
11. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
12. ASTM C330 - Standard Specification for Lightweight Aggregates for Structural Concrete.
13. ASTM C494 - Standard Specification for Chemical Admixtures for Concrete.
14. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
15. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
16. ASTM C685 - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing.
17. ASTM C845 - Standard Specification for Expansive Hydraulic Cement.
18. ASTM C989 - Standard Specification for Slag Cement for Use in Concrete and Mortars.
19. ASTM C1017 - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
20. ASTM C1064 - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
21. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
22. ASTM C1116 - Standard Specification for Fiber-Reinforced Concrete.
23. ASTM C1157 - Standard Performance Specification for Hydraulic Cement.
24. ASTM C1218 - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
25. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
26. ASTM D994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
27. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
28. ASTM D1752 - Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction.

29. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
30. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
31. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
32. ASTM E1643 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.
33. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.

C. California Department of Public Health:

1. Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1 (2010)

D. Caltrans Standard Specifications

1. Section 51 – Concrete Structures
2. Section 90 – Concrete

E. Bay Area Air Quality Management District:

1. BAAQMD Rule 8-51 - Adhesive and Sealant Applications.

1.4 COORDINATION

- A. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.

1.5 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. Product Data: Submit data on mix design, joint devices, attachment accessories, and admixtures.
- C. Design Data:
1. Submit concrete mix design for each concrete strength.
 2. Submit separate mix designs if admixtures are required for following:
 - a. Hot and cold weather concrete Work.
 - b. Air entrained concrete Work.
 3. Identify mix ingredients and proportions, including admixtures.
 4. Identify chloride content of admixtures and whether or not chlorides were added during manufacture.

- D. Delivery Tickets: Provide delivery tickets at the time of delivery of each load of concrete. Each delivery ticket shall be accompanied by batch tickets automatically produced by the batching equipment, indicating quantities of each ingredient. Each delivery ticket shall, in addition, state the mix number, total yield in cubic yards, date and the time of day, to the nearest minute, corresponding to when the batch was loaded, when it was dispatched, when it arrived at the job, and the time that unloading began.

1.6 CLOSEOUT SUBMITTALS

- A. [Section 01 78 00 – Closeout Submittals](#): Requirements for submittals.

1.7 QUALITY ASSURANCE

- A. Comply with ACI 305R when pouring concrete during hot weather in [Section 32 13 13 - Concrete Surface Improvements](#) of the City Standard Specifications.
- B. Comply with ACI 306.1 when pouring concrete during cold weather and as specified in [Section 32 13 13 - Concrete Surface Improvements](#) of the City Standard Specifications.
- C. Acquire cement and aggregate from one source for Work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Concrete:
 - 1. Cement:
 - a. Comply with ASTM C150, Type II - Moderate Sulfate Resistant.
 - b. Type: Portland.
 - 2. Fine and Coarse Aggregates:
 - a. Conform to the requirements of Section 90-1.02C, "Aggregates", of the State Standard Specifications.
 - 3. Water:
 - a. Conform to Section 90-1.02D, "Water" of the State Standard Specifications.
 - b. Potable
- B. Admixtures:
 - 1. Air Entrainment: Conform to the requirements of Section 90-1.02E(3), "Air-Entraining Admixtures" of the State Standard Specifications.
 - 2. Chemical: Conform to the requirements of Section 90-1.02E(2), "Chemical

Admixtures” of the State Standard Specifications.

3. Supplementary Cementitious Materials – Fly Ash: Conform to the requirements of Section 90-1.02B(3), “Supplementary Cementitious Materials” of the State Standard Specifications.
4. Supplementary Cementitious Materials – Slag: Conform to the requirements of Section 90-1.02B(3), “Supplementary Cementitious Materials” of the State Standard Specifications

2.2 CONCRETE MIX

- A. Concrete shall conform to Section 90, “Concrete” of the State Standard Specifications.
- B. Minimum 28-day compressive strength is 4,000 psi.**
- C. Concrete shall contain not less than 564 pounds of cementitious material per cubic yard, except for Cast-in-place Pipe.
- D. Ready-Mixed Concrete: Mix and deliver concrete according to ASTM C94.

2.7 CONSISTENCY

- A. The consistency of the concrete in successive batches shall be determined by slump tests in accordance with ASTM C 143. Unless otherwise specified the slump for all concrete shall be in 4 inches maximum.
- B. Retempering of concrete will not be permitted

2.8 MIXING AND TRANSPORTING

- A. All concrete shall be mixed in mechanically operated mixers.
- B. Ready-mix concrete shall meet the requirements as to materials, batching, mixing, transporting and placing as specified herein and in accordance with ASTM C94.
- C. Ready-mixed concrete shall be delivered to the site of the work, and discharge shall be completed within one and one-half hours after the addition of the cement to the aggregates or before the drum has been revolved 250 revolutions, whichever is first. If the completion of delivery and discharge exceeds the above requirements, concrete shall be rejected and shall not be used for the project.
- D. Truck mixers shall be equipped with electrically-actuated counters by which the number of revolutions of the drum or blades may be readily verified. The counter shall be of the resettable, recording type, and shall be mounted in the driver's cab. The counters shall be actuated at the time of starting mixers at mixing speeds.
- E. Each batch of concrete shall be mixed in a truck mixer for not less than 70

revolutions of the drum or blades at the rate of rotation designated by the manufacturer of equipment. Additional mixing, if any, shall be at the speed designated by the manufacturer of the equipment as agitating speed. All materials including mixing water shall be in the mixer drum before actuating the revolution counter for determining the number of revolution of mixing.

- F. Each batch of ready-mixed concrete delivered at the job site shall be accompanied by a delivery ticket furnished to the Project Manager.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify requirements for concrete cover over reinforcement.
- B. Verify that anchors, bolts, seats, plates, reinforcement, and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with placing concrete.

3.2 PREPARATION

- A. [Section 01 70 00 - Execution](#): Requirements for installation preparation.
- B. Previously Placed Concrete:
 - 1. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent.
 - 2. Remove laitance, coatings, and unsound materials.
- C. In locations where new concrete is doweled to existing work, scan for existing rebar locations, drill the holes 1/4-inch larger than the nominal dowel diameter in existing concrete to avoid existing rebar, clean and prepare the holes in accordance with the anchoring system manufacturer's instructions and thoroughly saturate with water, have all free water removed, and be dried to a saturated surface dry condition, coat the surface of the dowel, place epoxy inside the holes and insert steel dowels as specified per Section 51-1.03E(4) of the State Standard Specification. Cure epoxy at least three (3) days or until the dowels are completely encased in epoxy. Replace dowels that fail to bond or are damaged.
- D. Remove debris and ice from formwork, reinforcement, and concrete substrates.
- E. Remove water from areas receiving concrete before concrete is placed.
- F. Thoroughly moisten forms, subgrade and earth surfaces with water immediately before placing concrete. An approved form release agent may be used in lieu of water for the forms. These surfaces shall be kept moist by frequent sprinkling up to the time of placing concrete thereon. The surface shall be free from standing water, mud and debris at the time of placing concrete.

- G. Hardened concrete surfaces upon or against which concrete is to be placed, are defined as construction joints. The surfaces of horizontal joints shall be given a compacted, roughened surface to a minimum 1/4-inch amplitude for good bond. Before new concrete is placed, the joint surfaces shall be cleaned of all laitance, loose or defective concrete and foreign material. Any water shall be removed from the surface of construction joints before the new concrete is placed.
- H. Interruptions in placing concrete will not be allowed without the written approval of the City. The Contractor shall submit its proposed method of joint construction to the City for review and approval. When interruption of concrete placement operations has been approved the working face shall be given a shape by the use of forms or other means, that will secure proper union with subsequent work.
- I. All reinforcement, anchor bolts, sleeves, inserts and similar items shall be set and secured in the forms where shown on the Drawings or by shop drawings and shall be acceptable to the City before any concrete is placed. Accuracy of placement is the responsibility of the Contractor.
- J. No concrete shall be placed in any structure until all water entering the space to be filled with concrete has been properly cut off or has been diverted by pipes, or other means, and carried out of the forms, clear of the work. No concrete shall be deposited underwater nor shall the Contractor allow still water to rise on any concrete until the concrete has attained its initial set. Water shall not be permitted to flow over the surface of any concrete in such manner and at such velocity as will injure the surface finish of the concrete. Pumping or other necessary dewatering operations for removing ground water, shall be the responsibility of Contractor.
- K. Anchor bolts shall be accurately set and shall be maintained in position by templates while being embedded in concrete.

3.3 PLACING

- A. Placing of concrete shall conform to the requirements of Section 51-1.03D, "Placing Concrete", of the State Standard Specification and the requirements of this Section. All concrete which does not conform to the requirements of this Section shall be removed from the work.
- B. Concrete shall not be dropped through reinforcement steel into any form deeper than three (3) feet. In such cases, hoppers and, if necessary, vertical ducts of canvas, rubber or metal shall be used for placing concrete. In no case shall the free fall of concrete exceed three (3) feet below the ends of ducts, chutes or buggies.
- C. Concrete in forms shall be deposited in uniform horizontal layers not deeper than 2 feet and care shall be taken to avoid inclined layers. Each layer shall be placed while the previous layer is still soft. The surface of the concrete shall be level whenever a run of concrete is stopped. The temperature of concrete when it is being placed shall be in conformance with [Section 32 13 13 - Concrete Surface Improvements](#) of the City Standard Specifications.

3.4 PUMPING OF CONCRETE

- A. If the pumped concrete does not produce satisfactory end results as determined by the Project Manager, the Contractor shall discontinue the pumping operation and proceed with the placing of concrete using conventional methods.

3.5 CONSOLIDATION

- A. As concrete is placed in the forms or in excavations, it shall be thoroughly settled and compacted in general conformance with Section 51-1.03D, "Placing Concrete," of the Caltrans Standard Specifications.

3.6 FINISHING CONCRETE SURFACES

- A. Exposed surfaces shall be free from fins, bulges, ridges, offsets, honeycombing, or roughness of any kind, and shall present a finished, smooth, continuous hard surface.
- B. No treatment is required after form removal except for curing, repair of defective concrete and treatment of surface defects.
- C. After proper and adequate vibration and tamping, all exposed un-formed surfaces of pads and slabs, shall be brought to a uniform surface with suitable tools. The finish for all unformed concrete surfaces shall be a soft broom finish.

3.7 CURING

- A. All exposed concrete top surfaces of pads, shall be cured in conformance with [Section 32 13 13 - Concrete Surface Improvements](#) of the City Standard Specifications.

3.8 PROTECTION

- A. The Contractor shall protect all concrete against injury until final acceptance by the City. Holes left by form-tying and other minor imperfections as defined herein shall be repaired in an approved manner with cement grout in conformance with [Section 03 60 00 - Grouting](#).

3.9 FIELD QUALITY CONTROL

- A. [Section 01 45 00 - Quality Control](#): Requirements for inspecting and testing.
- B. Patching:
 - 1. Allow Project Manager to inspect concrete surfaces immediately upon removal of forms.
 - 2. Honeycombing or Embedded Debris in Concrete:
 - a. Not acceptable.
 - b. Notify the Project Manger upon discovery.

3. Patch imperfections according to ACI 301 when directed by the Project Manager.

C. Defective Concrete:

1. Description: Concrete not conforming to required lines, details, dimensions, tolerances, or specified requirements.
2. Repair or replacement of defective concrete will be determined by the Project Manager.
3. Do not patch, fill, touch up, repair, or replace exposed concrete except upon express direction of the Project Manager for each individual area.

END OF SECTION 03 30 00

SECTION 03 60 00 - GROUTING**PART 1 – GENERAL**

1.1 SUMMARY

A. Section Includes:

1. Portland cement grout.
2. Rapid-curing epoxy grout.
3. Non-shrink cementitious grout.

B. Related Requirements:

1. [Section 03 30 00 – Utility Cast-in-Place Concrete](#): Cast-in-place or in-situ concrete for concrete structures and other concrete components.
2. [Section 32 13 13 – Concrete Surface Improvements](#): Form materials, accessories as required to form cast in place concrete and maintain structural integrity until stripping.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Full compensation for grouting shall be considered as included in the contract prices paid for bid items of work involved and no additional compensation will be allowed therefor.

1.3 REFERENCE STANDARDS

A. American Concrete Institute:

1. ACI 301 - Specifications for Structural Concrete for Buildings.
2. ACI 318 - Building Code Requirements for Structural Concrete.

B. ASTM International:

1. ASTM C33 - Standard Specification for Concrete Aggregates.
2. ASTM C40 - Standard Test Method for Organic Impurities in Fine Aggregates for Concrete.
3. ASTM C150 - Standard Specification for Portland Cement.
4. ASTM C191 - Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle.
5. ASTM C307 - Standard Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacing.
6. ASTM C531 - Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.

7. ASTM C579 - Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
8. ASTM C827 - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures.
9. ASTM C1107 – Standard Specification for Packaged Dry Hydraulic-Cement Grout (Nonshrink).

C. U. S. Army Corps of Engineers Concrete Research Division (CRD):

1. CRD-C621 - Non-Shrink Grout.

1.4 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. Product Data: Submit manufacturer information regarding grout.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Manufacturer Instructions: Submit instructions for mixing, handling, surface preparation, and placing epoxy-type and non-shrink grouts.
- E. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. [Section 01 60 00 - Product Requirements](#): Requirements for transporting, handling, storing, and protecting products. Total storage time from date of manufacture to date of installation shall be limited to 12 months or the manufacturer's recommended storage time, whichever is less.
- B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage. Materials which becomes damp or otherwise unacceptable shall be immediately removed from the site and replaced with acceptable material.
- C. Store materials according to manufacturer instructions.
- D. Protection:
 1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
 2. Provide additional protection according to manufacturer instructions.

PART 2 - PRODUCTS

2.1 PORTLAND CEMENT GROUT

GROUTING

03 60 00 -

- A. Portland Cement: Comply with ASTM C150, Type II and per Section 90-1.02B(2) of the State Standard Specifications.
- B. Water:
 - 1. Potable and shall be per section 90-1.02D of the State Standard Specification.
 - 2. No impurities, suspended particles, algae, or dissolved natural salts in quantities capable of causing:
 - a. Corrosion of steel.
 - b. Volume change increasing shrinkage cracking.
 - c. Efflorescence.
 - d. Excess air entraining.
- C. Fine Aggregate:
 - 1. Washed natural sand.
 - 2. Gradation:
 - a. Comply with Section 90, "Concrete" of the State Standard Specifications.
 - b. Represented by smooth granulometric curve within required limits.
 - 3. Free from injurious amounts of organic impurities according to ASTM C40.
- D. Mix:
 - 1. Portland cement, sand, and water.
 - 2. Do not use ferrous aggregate or staining ingredients in grout mixes.

2.2 RAPID-CURING EPOXY GROUT

- A. Manufacturers:
 - 1. Sika Corporation
 - 2. W.R. Meadows, Inc.
 - 3. Euclid Chemical
 - 4. Or approved equal.
- B. Description:
 - 1. High-strength, three-component epoxy grout formulated with thermosetting resins and inert fillers.
 - 2. Rapid-curing, high adhesion, and resistant to ordinary chemicals, acids, and alkalis.
 - 3. Resins containing butyl glycidyl ether (BGE) or other highly volatile and hazardous reactive diluents are not acceptable.
- C. Performance and Design Criteria:

1. Minimum Compressive Strength:
 - a. 11,000 psi at seven days.
 - b. Comply with ASTM C579.
2. Minimum Tensile Strength:
 - a. 2,000 psi.
 - b. Comply with ASTM C307.
3. Coefficient of Expansion:
 - a. 30×10^{-6} inch per degree F.
 - b. Comply with ASTM C531.
4. Shrinkage:
 - a. None.
 - b. Comply with ASTM C827.
5. Application: Epoxy grout shall be used to embed all anchor bolts and reinforcing steel required to be set in grout, and for all other specified applications.

2.3 NON-SHRINK CEMENTITIOUS GROUT

A. Manufacturers:

1. Sika Corporation
2. W.R. Meadows
3. Euclid Chemical
4. Or approved equal.

B. Description:

1. Pre-mixed and ready-for-use formulation requiring only addition of water.
2. Noshrink grouts shall meet or exceed the requirements of ASTM C1107 Grades B or C and CRD-C621.
3. Non-shrink, non-corrosive, non-metallic, non-gas forming, and no chlorides.
4. Manufacturer's instructions shall be printed on each bag or other container in which the materials are packaged.

C. Performance and Design Criteria:

1. The grouts shall exhibit no shrinkage when tested in conformity with ASTM C827.
2. Certified to maintain initial placement volume or expand after set, and to meet following minimum properties when tested according to CRD-C621 for Type D non-shrink grout:

- a. Setting Time:
 - 1) Initial: Approximately two hours.
 - 2) Final: Approximately three hours.
 - 3) Comply with ASTM C191.
- b. Maximum Expansion: 0.10 to 0.40 percent.
- c. Minimum Compressive Strength:
 - 1) One-Day: 4,000 psi.
 - 2) Seven-Day: 6,000 psi.
 - 3) 28-Day: 7,500 psi.
 - 4) Comply with CRD-C621.

2.4 FORMWORK

- A. As specified in [Section 32 13 13 – Concrete Surface Improvements](#).

2.5 CONSISTENCY

- A. The consistency of grouts shall be that necessary to completely fill the space to be grouted for the particular application. Dry pack consistency is such that the grout is plastic and moldable but will not flow. Where "dry pack" is specified, it shall mean a grout of that consistency; the type of grout to be used shall be as specified herein for the particular application.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify areas to receive grout. Reinforcing steel shall be inspected prior to placing grout.

3.2 PREPARATION

- A. [Section 01 70 00 - Execution](#): Requirements for installation preparation.
- B. Remove defective concrete, laitance, dirt, oil, grease, and other foreign material from concrete surfaces by brushing, hammering, chipping, or other similar means until sound and clean concrete surface is achieved.
- C. Roughen concrete lightly, but not to interfere with placement of grout.
- D. Remove foreign materials from metal surfaces in contact with grout.
- E. Align, level, and maintain final positioning of components to be grouted.
- F. Saturate concrete surfaces with clean water, and then remove excess water.

3.3 INSTALLATION

A. Formwork:

1. Construct leakproof forms anchored and shored to withstand grout pressures.
2. Install formwork with clearances to permit proper placement of grout.
3. As specified in [Section 32 13 13 – Concrete Surface Improvements](#).

B. Mixing:

1. Portland Cement Grout:

- a. Use proportions of two parts sand and one-part cement, measured by volume.
- b. Prepare grout with water to obtain consistency to permit placing and packing.
- c. Mix water and grout in two steps:
 - 1) Premix using approximately 2/3 of water.
 - 2) After partial mixing, add remaining water to bring mix to desired placement consistency and continue mixing two to three minutes.
- d. Mix only quantities of grout capable of being placed within 30 minutes after mixing.

2. Rapid-Curing Epoxy Grout:

- a. Mix and prepare according to manufacturer instructions.
- b. Minimum Compressive Strength: 10,000 psi in 72 hours and 13,000 psi in 28 days.

3. Non-shrink Cementitious Grout:

- a. Mix and prepare according to manufacturer instructions.
- b. Minimum Compressive Strength: 4,500psi in 72 hours and 7,500 psi in 28 days.

4. Mix grout components in proximity to Work area and transport mixture quickly and in manner not permitting segregation of materials.

C. Placing of Grout:

1. Place grout material quickly and continuously to avoid cold joints.
2. Do not place cement grout in layers.
3. Do not add additional water to the mix (retemper) after initial stiffening.
4. Do not use pneumatic-pressure or dry-packing methods.
5. Apply grout from one side only to avoid entrapping air.
6. Do not vibrate placed grout mixture or permit placement if area is being vibrated by nearby equipment.
7. Thoroughly compact final installation and eliminate air pockets.

8. Do not remove leveling shims for at least 48 hours after grout has been placed.

D. Curing:

1. Prevent rapid loss of water from grout during first 48 hours by use of approved membrane curing compound or by using wet burlap method.
2. Immediately after placement, protect grout from premature drying, excessively hot or cold temperatures, and mechanical injury.
3. After grout has attained its initial set, keep damp for minimum three days. Saturate the grout surface by use of wet burlap, ponding or other approved means.
4. Epoxy grouts are self-curing and do not require the application of water.

- E. Upon completion of the jacking operations, all voids around the outside face of the conduit shall be filled by grouting.

- F. Grouting equipment and material shall be on the job site before jacking operations and drilling of grout holes are completed in order that grouting around the jacked conduit may be started immediately after the jacking operations have finished.

3.4 FIELD QUALITY CONTROL

- A. [Section 01 45 00 - Quality Control](#): Requirements for inspecting and testing.

B. Inspection and Testing:

1. Comply with ACI 301, ACI 318.
2. Submit proposed mix design of each class of grout to the Project Manager for review prior to commencement of Work.
3. Tests of grout components may be performed to ensure compliance with specified requirements.

END OF SECTION 03 60 00

SECTION 09 90 00 - PAINTING AND COATING**PART 1 – GENERAL****1.1 SUMMARY**

- A. Section Includes: Surface preparation and field application of paints, including pretreatment, coating application, touch-up of factory-coated surfaces, protection of surfaces not to be coated, cleanup and other coatings.
- B. Glass, stainless steel, and equipment nameplates shall not be protective coated unless shown otherwise on the Drawings.

1.2 DEFINITIONS

- A. Refer to ASTM D16 for definitions of terms used in this Section.
- B. The term "paint," "coatings," "linings," or "finishes" as used herein, shall include surface treatments, emulsions, enamels, paints, epoxy resins, and all other protective coatings, excepting galvanizing or anodizing, whether used as a pretreatment, primer, intermediate coat, or finish coat. The term "DFT" means minimum dry film thickness.

1.3 REFERENCE STANDARDS

- A. ASTM International:
 - 1. ASTM C309 – Standard for Liquid Membrane – Forming Compounds for Curing Concrete.
 - 2. ASTM D16 – Standard Terminology for Paint, Related Coatings, Materials, and Applications.
 - 3. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.
 - 4. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. AWWA
 - 1. AWWA C105 – Standard for Polyethylene Encasement for Ductile-Iron Piping for Water and Other Liquids.
 - 2. AWWA C205 - Standard for Cement-Mortar Protective lining and Coating for Steel Water Pipe – 4-inch and larger – Shop applied.
 - 3. AWWA C550 - Standard for Protective Epoxy Interior coatings for Valves and Hydrants.
- C. California Department of Public Health:
 - 1. CA/DHS/EHLB/R-174 - Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers,

- D. Caltrans Standard Specifications
 - 1. Section 59 – Structural Steel Coatings
 - 2. Section 91 – Paint
- E. Green Seal:
 - 1. GS-03 - Anti-Corrosive Paints.
 - 2. GS-11 - Paints and Coatings.
- F. Master Painters Institute:
 - 1. MPI - Approved Products List.
 - 2. MPI - Architectural Painting Manual.
- G. NACE National Association of Corrosion Engineers
- H. NSF National Sanitation Foundation
- I. SSPC Steel Structures Painting Council

1.4 SEQUENCING

- A. Do not apply finish coats until paintable sealant is applied.
- B. Back prime wood trim before installation of trim.

1.5 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. Product Data:
 - 1. Submit manufacturer data on finishing products, special coatings and paint.
 - 2. Include MPI - Approved Products Lists with proposed products highlighted.
- C. Samples:
 - 1. Submit two (2) paper chip samples, 4 inches by 4 inches in size, illustrating range of colors and textures available for each surface finishing product as scheduled.
 - 2. Painted Samples:
 - a. Submit two (2) painted samples, illustrating selected colors and textures for each selected color and system with specified coats cascaded.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Manufacturer Instructions: Submit special surface preparation procedures,

substrate conditions requiring special attention.

- F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

1.6 CLOSEOUT SUBMITTALS

- A. [Section 01 78 00 - Closeout Submittals](#): Requirements for submittals.
- B. Operation and Maintenance Data: Submit information on cleaning, touchup, and repair of painted and coated surfaces.

1.7 QUALITY ASSURANCE

- A. MPI Standards:
 - 1. Comply with indicated MPI standards.
 - 2. Products: Listed in MPI - Approved Products List.
- B. Surface Burning Characteristics:
 - 1. Fire-Retardant Finishes: Maximum 25/450 flame-spread/smoke-developed index when tested according to ASTM E84.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. [Section 01 60 00 - Product Requirements](#): Requirements for transporting, handling, storing, and protecting products.
- B. Container Labeling: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Inspection:
 - 1. Accept materials on Site in manufacturer's sealed and labeled containers.
 - 2. Inspect for damage and to verify acceptability.
- D. Store materials in ventilated area and otherwise according to manufacturer instructions.
- E. Protection:
 - 1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
 - 2. Provide additional protection according to manufacturer instructions.

1.9 AMBIENT CONDITIONS

- A. [Section 01 50 00 - Temporary Facilities and Controls](#): Requirements for ambient condition control facilities for product storage and installation.

B. Storage Conditions:

1. Minimum Ambient Temperature: 45 degrees F.
2. Maximum Ambient Temperature: 85 degrees F.

C. Application Conditions:

1. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint manufacturer.
2. Do not apply exterior coatings during rain, when relative humidity is outside humidity ranges, or when moisture content of surfaces exceeds those required by paint manufacturer.
3. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors and 50 degrees F for exteriors, unless otherwise indicated by manufacturer instructions.
4. Minimum Application Temperature for Varnish and Finishes: 65 degrees F for interiors and exteriors, unless otherwise indicated by manufacturer instructions.
5. Lighting Level: 80 fc, measured mid-height at substrate surface.

1.10 WARRANTY

- A. [Section 01 70 00 - Execution](#) and [Section 01 77 00 - Closeout Requirements](#): Requirements for warranties.
- B. Furnish five (5) year manufacturer's warranty for paint and coatings.

PART 2 - PRODUCTS

2.1 PAINTS AND COATINGS

A. Manufacturers:

1. Kelly-Moore Paint Company, Inc.
2. Sherwin-Williams Company
3. Vista Paint
4. Dunn-Edwards Corporation
5. Rust-Oleum
6. Glidden Company
7. Behr Process Corporation
8. Or approved equal
9. Substitutions: As specified in [Section 01 60 00 - Product Requirements](#).

B. Materials:

1. Coatings:
 - a. Ready mixed, except field-catalyzed coatings.
 - b. Capable of drying or curing free of streaks or sags.

2. Patching Materials: Latex filler.
3. Fastener Head Cover Materials: Latex filler.
4. Accessories:
 - a. Grade: Commercial.
 - b. Linseed oil.
 - c. Shellac.
 - d. Turpentine.
 - e. Paint thinners.
 - f. Other materials not specifically indicated but required to achieve specified finishes.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION STANDARDS

- A. The following referenced surface preparation specifications of the Steel Structures Painting Council's "Steel Structure Painting Manual, Volume 2, Systems and Specification" shall form a part of this specification:
 1. Solvent Cleaning (SSPC-SP1): Removal of oil, grease, dirt, soil, salts, and contaminants by cleaning with solvent, vapor, alkali, emulsion, or steam.
 2. Hand Tool Cleaning (SSPC-SP2): Removal of loose rust, loose mill scale, and loose paint to degree specified, by hand chipping, scraping, sanding, and wire brushing.
 3. Power Tool Cleaning (SSPC-SP3): Removal of loose rust, loose mill scale, and loose paint to degree specified by power tool chipping, descaling, sanding, wire brushing, and grinding.
 4. White Metal Blast Cleaning (SSPC-SP5): Removal of all visible rust, mill scale, paint, and foreign matter by blast cleaning by wheel or nozzle (dry or wet) using sand, grit, or shot.
 5. Commercial Blast Cleaning (SSPC-SP6): Blast cleaning until at least two-thirds of each element of surface area is free of all visible residues.
 6. Brush-Off Blast Cleaning (SSPC-SP7): Blast cleaning of all except tightly adhering residues of mill scale, rust, and coatings, exposing numerous evenly distributed flecks of underlying metal.

3.2 EXAMINATION

- A. Verify that surfaces and substrate conditions are ready to receive Work as recommended by product manufacturer.
- B. Evaluate blast cleaned surface preparation work will be based upon comparison of the blasted surfaces with the definitions and standard visual samples available from

SSPC, using SSPC-V1S1 Standards.

- C. Examine surfaces scheduled to be finished prior to commencement of Work, and report conditions capable of affecting proper application to City's Project Manager. The Project Manager shall be sole judge as to whether the quality of blast cleaning conforms to visual comparison standards, and the Project Manager's decision as to allowability shall be final.
- D. Test shop-applied primer for compatibility with subsequent cover materials.
- E. Moisture Content:
 - 1. Measure moisture content of surfaces using electronic moisture meter.
 - 2. Do not apply finishes unless moisture content of surfaces are below following maximums:
 - a. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
 - b. Exterior Wood: 15 percent, measured according to ASTM D4442.

3.3 PREPARATION

- A. [Section 01 70 00 - Execution](#): Requirements for application preparation.
- B. Prepare coatings as follows:
 - 1. To soft paste consistency, capable of being readily and uniformly dispersed to homogeneous coating.
 - 2. For smooth flow and brushing properties.
- C. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- D. The working parts of all mechanical and electrical equipment shall be protected from damage during surface preparation and coating operations. Openings in motors shall be masked to prevent entry of coating or other materials.
- E. Defects:
 - 1. Correct defects and clean surfaces capable of affecting Work of this Section.
 - 2. Remove or repair existing coatings exhibiting surface defects.
- F. Cleaning and coating shall be done such that dust and other contaminants from the cleaning process will not fall on wet, newly-coated surfaces.
- G. Marks: Seal marks that may bleed through surface finishes with shellac.
- H. Impervious Surfaces:
 - 1. Remove mildew by scrubbing with solution of tetra-sodium or tri-sodium phosphate and bleach.
 - 2. Rinse with clean water and allow surface to dry.
- I. Aluminum Surfaces Scheduled for Paint Finish:

1. Remove surface contamination by steam or high-pressure water.
 2. Remove oxidation with acid etch and solvent washing.
 3. Apply etching primer immediately following cleaning.
- J. Asphalt, Creosote, or Bituminous Surfaces Scheduled for Paint Finish:
1. Remove foreign particles to permit adhesion of finishing materials.
 2. Apply latex-based or compatible sealer or primer.
- K. Copper Surfaces Scheduled for Paint Finish:
1. Remove contamination by steam, high-pressure water, or solvent washing.
 2. Apply vinyl-etch primer immediately following cleaning.
- L. Copper Surfaces Scheduled for Natural Oxidized Finish:
1. Remove contamination by applying oxidizing solution of copper acetate and ammonium chloride in acetic acid.
 2. Rub on repeatedly for required effect, and, once attained, rinse surfaces with clear water and allow to dry.
- M. Galvanized Surfaces:
1. Remove surface contamination and oils, and wash with solvent.
 2. Apply coat of etching primer.
- N. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish:
1. Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter.
 2. Remove oil and grease with solution of tri-sodium phosphate, rinse well, and allow to dry.
 3. Remove stains caused by weathering of corroding metals with solution of sodium metasilicate after thoroughly wetting with water, and allow to dry.
- O. Uncoated Steel and Iron Surfaces:
1. Remove grease, mill scale, weld splatter, dirt, and rust.
 2. If heavy coatings of scale are evident, remove by power tool wire brushing or by sandblasting.
 3. Clean by washing with solvent.
 4. Apply treatment of phosphoric acid solution, ensuring that weld joints, bolts, and nuts are similarly cleaned.
 5. Spot-prime paint after repairs.
- P. Shop-Primed Steel Surfaces:
1. Sand and scrape to remove loose primer and rust.
 2. Feather edges to make touch-up patches inconspicuous.
 3. Clean surfaces with solvent.

- Q. Exterior Wood Scheduled to Receive Paint Finish:
 - 1. Remove dust, grit, and foreign matter.
 - 2. Seal knots, pitch streaks, and sappy sections.
 - 3. Fill nail holes with tinted exterior paintable calking compound after prime coat has been applied.

- R. Exterior Wood Scheduled to Receive Transparent Finish:
 - 1. Remove dust, grit, and foreign matter.
 - 2. Seal knots, pitch streaks, and sappy sections with sealer.
 - 3. Fill nail holes with tinted exterior calking compound after sealer has been applied.

- S. Existing Work:
 - 1. Extend existing paint and coatings installations using materials and methods compatible with existing installations and as specified.

3.4 APPLICATION

- A. Comply with MPI - Architectural Painting Manual.
- B. Do not apply finishes to surfaces that are not dry.
- C. Apply each coat to uniform appearance.
- D. Apply each coat of paint slightly darker than preceding coat, unless specified otherwise.
- E. Prime Coat DFT = 3 mils each
- F. Finish Coats (2 or more) DFT = 3 mils each
- G. Total System DFT = 6 mils, minimum.
- H. Sand wood and metal surfaces lightly between coats to achieve required finish.
- I. Cleaning:
 - 1. Vacuum surfaces to remove loose particles.
 - 2. Use tack cloth to remove dust and particles just prior to applying next coat.
- J. Fillers:
 - 1. If clear finishes are required, tint fillers to match wood.
 - 2. Work fillers into grain before set, and wipe excess from surface.
- K. Concealed Surfaces:
 - 1. Prime concealed surfaces of interior and exterior woodwork with primer paint.
 - 2. Prime concealed surfaces of interior wood surfaces scheduled to receive

stain or varnish finish with gloss varnish reduced 25 percent with thinner.

3.5 FIELD QUALITY CONTROL

- A. Inspecting and Testing: Comply with MPI - Architectural Painting Manual.

3.6 CLEANING

- A. [Section 01 77 00 - Closeout Requirements](#): Requirements for cleaning.
- B. Collect waste material that may constitute fire hazards, place in closed metal containers, and remove daily from Site.
- C. Improper disposal for hazardous materials will not be allowed.

3.7 COATING SYSTEM

- A. **Alkyd Enamel:** High quality, gloss or semi-gloss, medium long oil alkyd finish shall have a minimum solids content of 49 percent by volume. Primer shall be as recommended by manufacturer.
- B. **Fusion Bonded Epoxy:** The coating material shall be 100 percent powder epoxy applied in conformance with AWWA C550, except that the surface preparation shall be as specified in the Coating System Schedule of this Section.
 - 1. **Liquid Epoxy:** For field repairs, the use of a liquid epoxy will be permitted, applied in not less than 3 coats to provide a total DFT of 12 mils. The liquid epoxy shall be 100 percent solids epoxy recommended by the powder epoxy manufacturer.
 - 2. Field Repair coatings (DFT = 12 mils), Scotchkote 306 or 312, PCI Augsburg DURA-POX 646 or equal.
- C. **Polyethylene Encasement:** Application of polyethylene encasement shall be in conformance with AWWA C 105 using Method A.
- D. **Cement Mortar Coating:** Unless otherwise shown on the Drawings, mortar coating and reinforcement shall be in conformance with AWWA C205.
- E. **Factory Applied Coating:** The coating material shall be a liquid epoxy applied in conformance with AWWA C550.
- F. **Coal Tar Paint:** High Solids content coal tar paint for use on buried pipeline and fittings.
 - 1. Prime Coat and finish coats (2 or more, total DFT = 24 mils), Protecto Wrap CA-1200, Polyguard No. CA-14, Kop-Coat Bituminastic Super Service Black, or equal.

3.8 SCHEDULE

- A. See below Coating System Schedule A for Ferrous Metal and not galvanized.

Item	Surface Preparation	Coating System
All surfaces, indoors and outdoors, exposed or covered, except those surfaces included below	Commercial Blast Cleaning SSPC-SP6	Alkyd Enamel
Exposed Fire Hydrant, valve lids, marker posts, backflow preventor lettering, exposed pipe, fittings and vent pipe	Solvent Cleaning SSPC-SP1	Alkyd Enamel
Buried pipe with a nominal diameter of less than 6 inches and greater than 2 inches, excluding ductile iron pipe	Solvent Cleaning SSPC-SP1	Coal Tar Paint
Fittings and flanged joints, where the piping is plastic. Buried fittings on ductile iron pipe used for FH laterals, fire service laterals, and Backflow Prevention Assemblies. Joints, and fittings on ductile iron pipe with coal tar coating.	Commercial Blast Cleaning SSPC-SP6	Coal Tar Paint
Buried pipe couplings; fittings; and flanged joints, including epoxy coated surfaces, except valves; where the piping is polyethylene encased ductile iron	As specified in Specifications for appropriate fittings	Polyethylene Encasement
Buried pipe couplings, fittings, and flanged joints, where piping is cement mortar coated and lined steel pipe, excluding epoxy coated surfaces.	Solvent Cleaning SSPC-SP1	Cement Mortar Coating
Buried cast couplings, buried sleeve-type tapping sleeves, welded tapping outlets. Ferrous surfaces of gate valves.	White Metal Blast Cleaning SSPC-SP5	Fusion Bonded Epoxy

External ferrous surfaces of check valves and ferrous internal surfaces of fire hydrants.	White Metal Blast Cleaning SSPC-SP5	Fusion Bonded Epoxy
Internal/External Ferrous Surfaces of butterfly valves	White Metal Blast Cleaning SSPC-SP5	Factory Applied Epoxy

B. See below Coating System Schedule B for Ferrous Metal and Galvanized.

Item	Surface Preparation	Coating System
All exposed surfaces, indoors or outdoors, including exposed galvanized pipe, except those surfaces included below.	Alkaline Cleaning per SSPC-SP1	Alkyd Enamel
Buried pipe with a nominal diameter of 2 inches and less, including valves, fittings	Alkaline Cleaning per SSPC-SP1	Coal Tar Paint

END OF SECTION 09 90 00

SECTION 31 05 13 – CLEARING & GRUBBING, EXCAVATION, AND EARTHWORK**PART 1 – GENERAL**

1.1 SUMMARY

A. Section Includes:

1. Clearing and Grubbing
2. Excavation
3. Earthwork
4. Grading and Compaction
5. Subsoil materials – Import Fill and Select Fill
6. Topsoil materials.

B. Related Sections:

1. [Section 01 74 00 – Construction Waste Management and Disposal](#)
2. [Section 31 23 16 – Utility Trenching.](#)
3. [Section 32 90 00 – Landscape Work.](#)
4. Project Geotechnical report (if available); bore hole locations and findings of subsurface materials if applicable.

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. City of Pittsburg - Environmental Services Department

C. ASTM International:

1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³).
2. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³).
3. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

D. California Building Code – Appendix J - Grading

E. State Standard Specifications:

1. Section 14 – Environmental Stewardship
2. Section 17 - General

3. Section 19 – Earthwork

1.3 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. Samples: Submit results of the soil samples by a certified testing laboratory prior to importing onto the site for approval by the Project Manager.
- C. Materials Source: Submit name of imported materials source.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

- A. Furnish each subsoil material from single source throughout the Work.

PART 2 - PRODUCTS

2.1 SUSTAINABILITY CHARACTERISTICS

- A. Materials and Resources Characteristics:
 - 1. Regional Materials: Furnish materials extracted, processed, and manufactured within 250 miles of jobsite.

2.2 SUBSOIL MATERIALS

- A. Select Fill Material:
 - 1. Subsoil material is on-site excavated material meeting the requirements of the appurtenant Geotechnical Report.
 - 2. Graded
 - 3. Non-hazardous
 - 4. Free of lumps larger than three (3) inches, rocks larger than two (2) inches, organic matter, frozen or other deleterious materials and debris.
 - 5. Selected material encountered in excavation within the right of way shall be used for finishing the top portion of the roadbed, constructing shoulders, structure backfill; as shown on the Drawings; as specified in the Technical Specifications, or as directed by the Project Manager.
- B. Import Fill Material:
 - 1. Subsoil material imported from sources outside the project site meeting the requirements of the appurtenant Geotechnical Report.
 - 2. Graded
 - 3. Non-hazardous

4. Free of lumps larger than three (3) inches, rocks larger than two (2) inches, organic matter, frozen or other deleterious materials and debris.
5. Unless otherwise specified, the Contractor shall obtain from the owners the right to procure material, pay all royalties and other charges involved, and bear all expense of developing the sources, including rights of way for hauling.
6. No import fill material shall be delivered to the site until approved by the Project Manager. Approval of import fill material shall be based on the testing of representative samples submitted by the contractor meeting the appurtenant Geotechnical Report and approved by the Project Manager. Such representative samples shall be submitted to the Project Manager not less than 15 days prior to commencing the work.
7. Imported fill, delivered to the site, that significantly differs from the submitted samples shall be subject to rejection. Rejected materials shall be removed from the site at the Contractor's expense
8. Approval of a particular import fill material shall constitute approval of only that portion of the proposed borrow source represented by the submitted sample.
10. Except as otherwise permitted, borrow pits and other excavation areas shall be excavated in such manner as will afford adequate drainage. Overburden and other spoil material shall be transported to designated spoil areas or otherwise disposed of as directed, local borrow pits shall be neatly trimmed and left in such shape as will facilitate accurate measurement after the excavation is completed.

2.3 FILL MATERIALS:

The following import fill parameters may be used for small City sidewalk and pavement rehabilitation projects; or for site improvements less than 5,000 square feet excluding any buildings or structures and do not have a geotechnical report included:

- A. Fill material shall conform to the following as determined by ASTM C 117 and ASTM C 136:
 1. Maximum particle size 3 inches
 2. Percent passing 1-inch sieve 90-100 percent
 3. Percent passing No. 200 sieve less than 20 percent
- B. Imported non-expansive fill shall consist of a well-graded, slightly cohesive soil with relatively impervious characteristics when compacted.
- C. Plasticity Index for acceptable import fill materials shall be a maximum of 15 when determined by the procedure set forth in ASTM D 4318.
- D. The liquid limit shall not exceed 40 percent as determined by the procedures set forth in ASTM D 4318.
- E. Import fill material shall have an R-value of 25 or greater as determined by ASTM D 2844.

2.4 TOPSOIL MATERIALS

- A. Topsoil shall be imported top soil as specified in [Section 32 90 00 "Landscape Work"](#) and Project Specifications.
- B. Topsoil excavated within the limits of the project meeting the requirements shown in Section 32 90 00, "Landscape Work", and as shown in the Project Specifications will be considered as a material only for the purpose of backfilling areas to be planted.

2.5 SOURCE QUALITY CONTROL

- A. [Section 01 45 00 – Quality Control](#): Testing and Inspection Services Testing and analysis of soil material.
- B. Testing and Analysis of Subsoil and Topsoil Materials: Perform in accordance with ASTM D698, ASTM D1557, and AASHTO T180.
- C. When tests indicate materials do not meet specified requirements, provide alternate materials and retest.
- D. Furnish materials of each type from same source throughout the Work.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Call USA not less than three (3) working days before performing Work that can be marked by USA in a timely manner.
- B. Request underground utilities to be located and marked within and surrounding construction areas.
- C. Identify required lines, levels, contours and datum.
- D. Notify utility companies to remove and relocate utilities where shown on the Drawings.
- E. Protect utilities indicated to remain from damage.
- F. Protect plant life, lawns, and other features remaining as portion of final landscaping.
- G. Protect benchmarks or monuments, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- H. The ground shall be prepared to received select fill by removing vegetation, topsoil and other unsuitable materials, scarifying the ground to provide a bond with the fill material, and compacting the fill at optimum moisture content.

3.2 CLEARING AND GRUBBING

- A. Clearing and grubbing shall be per Section 17-2, "Clearing and Grubbing", of the State Standard Specifications.
- B. Clear and grub before performing earthwork in an area.
- C. Do not injure standing trees, plants, and improvements shown to be protected.
- D. Clear and grub the entire length of the job site to the following widths:
 - 1. 5 feet outside of excavation and embankment slope lines where slopes are not rounded
 - 2. Outside limits of slopes where slopes are rounded
 - 3. 5 feet outside of structures
 - 4. 2 feet outside of slope lines for ditches and channels with a bottom width of less than 12 feet
 - 5. 5 feet outside of slope lines for ditches and channels with a bottom width of 12 feet or more
- E. Clearing and grubbing shall consist of removing all objectionable material from within the limits of the project. The limits of clearing and grubbing shall be of sufficient area and depth to complete the work shown on the Drawings or as described herein in.
- F. Clear all construction areas above original ground of the following to a minimum depth of eight (8) inches below subgrade or eight (8) inches below original ground, or as required by the appurtenant geotechnical report, whichever is lower:
 - 1. all vegetation such as trees, logs, upturned stumps, roots of downed trees, brush, grass, and weeds and
 - 2. other objectionable material including concrete, masonry, and debris.
- G. No burning of materials is allowed.
- H. The site shall be stripped and cleared of all vegetation, debris, and organic-laden top soil as required by the appurtenant Geotechnical Report.
- I. Trees within the limits of work including any traffic control work beyond the limits of work and within the area of influence shall be evaluated by the City or; a City approved Landscape Architect or certified Arborist to assess protection measures. No trees will be removed until they have been tagged, numbered and a written release for the tree has been issued by the City.
- J. Tree which are designated to be removed, shall be excavated and removed 30" down to remove the tree trunk, roots, and backfill with fill material and compact as required in this section, unless specified otherwise on the Drawings.
- K. Grub all construction areas to a depth of at least 0.50 feet, necessary to remove all existing tree stumps, roots, buried logs and other objectionable material, unless noted otherwise on the Plans. In embankment areas where the grading

plane is 2 feet or more above original ground, cut off trees, stumps, and roots not more than 1 foot above original ground, except, remove trees, stumps, and roots completely where work includes any of the following:

1. Structure construction
2. Pile construction
3. Subdrainage trench excavation
4. Removal of unsuitable material
5. Cutting into slopes of original hillsides, old or new fill
6. Utility line construction

3.3 EXCAVATION

- A. Work under this section shall consist of performing all operations necessary to excavate earth and rock, regardless of character and subsurface conditions, from the roadway prism or adjacent thereto, to excavate all materials, of whatever nature, necessary for the construction of foundations for structures and other facilities; to excavate drainage and irrigation ditches; to excavate drainage channels; to excavate selected material and import material for use as specified; to construct embankments including the placing of selected fill or import fill material in connection therewith as specified; to place backfill for structures, and other facilities; to backfill trenches and depressions resulting from the removal of obstructions; to backfill holes, pits and other depressions; to remove and replace unsuitable material; to excavate and grade road approaches, driveways, sidewalks, curb ramps, curb and gutters, plazas, parking lots, and connections; to construct protection dikes; to remove unstable material, slide material which has come into the graded area, and material which has slipped from embankments; all as shown on the plans and as specified in these Specifications and the Technical Specifications and as directed by the Project Manager; and furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work that may be required to construct and maintain the project facilities, except excavation, trenching and backfilling for pipe, culverts, utility systems, and other subsurface pipes. Excavation, trenching and backfilling for pipe, culverts, utility systems, and other subsurface pipes is specified in [Section 31 23 16 – Utility Trenching](#) of the City Standard Specifications.
- B. Excavate subsoil and topsoil from areas designated. Strip topsoil to full depth of topsoil in designated areas.
- C. Stockpile excavated material meeting requirements for subsoil fill materials and topsoil materials approved by the Project Manager.
- D. If practicable and unless processing of material is required, haul selected material directly from the excavation to its final position in the roadway prism and compact it in place.
- E. Excavate to the described or authorized grade. If the Contractor over excavates, backfill with an authorized material and compact it at the Contractor's own expense.
- F. Do not excavate wet subsoil unless directed by the Project Manager.

- G. The temporary slope of cut surfaces shall be no steeper than is safe for the intended use, and shall not be more than one-unit vertical in two units horizontal (50-percent slope) unless approved by the Project Manager or appurtenant geotechnical report.
- H. Archaeological Resources: Contractor shall conform to Section 14, "Environmental Stewardship", of the State Standard Specifications. If archaeological resources are discovered within or near construction limits, do not disturb the resources and immediately:
 - 1. Stop all work within a 60-foot radius of the discovery
 - 2. Secure the area
 - 3. Notify the Project Manager.
- I. City will investigate the discovery. Do not move archaeological resources or take them from the job site. Do not resume work within the radius of discovery until authorized.
- J. Environmentally Sensitive Areas (ESA): If an ESA is shown on the Drawings, the boundaries are approximate. Do not enter an ESA unless authorized. If an ESA is breached, immediately:
 - 1. Stop all the work within 60 feet of the ESA boundary
 - 2. Secure the area
 - 3. Notify the Project Manager

If an ESA is damaged, the Project Manager determines the necessary remediation and the party to perform the work. The City deducts the cost for this work from the Contractor bid price.

- K. Notify the Project Manager when buried man-made objects are encountered in an excavation as part of the excavation work and wait for direction from Project Manager unless shown on the plans for removal. All surplus material shall be disposed offsite.
- L. Remove excess excavated materials, subsoil and topsoil not intended for reuse, from site.
- M. Remove excavated materials not meeting requirements for subsoil materials and topsoil materials from site.
- N. When hauling is done over highways or City streets, and when directed by the Project Manager the loads shall be trimmed and all material removed from shelf areas of vehicles in order to eliminate spilling of material. If directed by the Project Manager, the loads shall be watered down or covered after trimming to eliminate dust.
- O. Excavation shall include the satisfactory removal and disposition of all materials not classified as rock excavation.
- P. Earth and rock, regardless of character and subsurface conditions, shall be excavated to the lines and grades as established by the plans.

- Q. All existing materials that are designated to be salvaged shall be removed, cleaned and hauled to the City Corporation Yard, unloaded and stockpiled, by the Contractor unless otherwise directed by the Project Manager.
- R. Existing pipes to be abandoned shall be filled with slurry, minimum of thirty (30) feet from either ends of the pipe and capped with concrete at the ends.
- S. Existing structures, pavement slabs, and structural sections to be abandoned shall be demolished to an elevation three (3) feet below finished grade, unless specified otherwise on the Drawings. The bottom (if any remains) shall be broken thoroughly to prevent entrapment of water and all voids backfilled with suitable backfill.
- T. Operations shall be conducted in such a manner that existing street, facilities, utilities, railroad tracks and other non-street facilities which are to remain in place will not be damaged.
- U. The Contractor, at his expense, shall furnish and install-sheet piling, cribbing, bulkheads, shores or whatever means may be necessary to adequately support material carrying such facilities, or to support the facilities themselves, and shall maintain such supports until they are no longer needed. Temporary pavements, facilities, utilities and installations shall also be protected until they are no longer required. When temporary supports and other protective means are no longer required, they shall become the property of the Contractor and shall be removed and disposed of from the job site
- V. Prior to placing import fill material, all areas to receive fill shall be scarified and compacted. Unless otherwise stated in the appurtenant Geotechnical report, the area shall be scarified to a minimum of eight (8) inches, material shall be moisture conditioned by wetting or drying to optimum moisture content, and compacted.

3.4 ROCK EXCAVATION

- A. Rock excavation shall include excavating, grading, and disposing of materials classified as rock and shall include the satisfactory removal and disposition of rock 1/2 cubic yard or more in volume.
- B. No blasting is allowed.

3.5 GRADING

- A. Grading shall consist of placing fill materials on site to contours and elevations with select fill or import fill materials.
- B. Place fill material in continuous layers of maximum lifts of 8 inches (0.67 feet) and compact in accordance with schedule shown in this section, unless otherwise shown on the appurtenant Geotechnical Report.
- C. Maintain optimum moisture content of fill materials to attain required compaction

- D. Construct slopes to the lines and grades shown on the Drawings.
- E. Slope grade away from the building minimum 2% slope for a minimum distance of 10 feet, unless noted otherwise.
- F. Make grade changes gradual. Blend slopes into level areas.
- G. Round the tops of excavation slopes and ends of excavation.
- H. Maintain completed slopes. Repair any slopes damaged by erosion.
- I. Repair or replace items indicated to remain that are damaged by excavation or filling.
- J. Identify any site low points which need positive drainage and make adjustments with approval from Project Manager prior to pouring concrete.
- K. Protection of existing slopes using erosion control measures as required in [Section 01 57 23 – Storm Water Pollution Prevention](#).

3.6 TOLERANCES

- A. [Section 01 45 00 – Quality Control](#): Tolerances.
- B. Immediately before placing subsequent layers of material, prepare the grading plane such that the grading plane:
 - 1. Does not vary more than 0.05 foot above or below the grade established by the Engineer where Hot Mix Asphalt (HMA) or aggregate base are to be placed.
 - 2. Does not extend above the grade established by the Engineer where concrete base or pavement is to be placed.
 - 3. Beneath structural approach slabs or the thickened portion of sleeper slabs do not extend above the grade established by the Engineer.
 - 4. At any point is within 0.05 foot above the grade established by the Engineer if the material to be placed on the grading plane is paid by the cubic yard.

3.7 COMPACTION

- A. Relative compaction specifications apply to material whether in an excavation or an embankment.
- B. The moisture content of material to be compacted to at least 95 percent must be such that the specified relative compaction is attained, unless specified otherwise in the appurtenant Geotechnical Report.
- C. Compact earthwork to a relative compaction of at least 95 percent for at least a depth of:
 - 1. 0.5 foot below the grading plane for the width between the outer edges of shoulders

2. 2.5 feet below the finished grade for the width of the traveled way including any parking lots or other vehicular areas; to extend plus two (2) feet on each side.

- D. All fill material shall be compacted to at least 90 percent of maximum density as determined by ASTM D1557, Modified Proctor, beyond the depth specified above in 3.7.C, unless otherwise shown in the appurtenant Geotechnical Report.

3.8 STOCKPILING

- A. Stockpile materials on site at locations indicated on the plans or as designated by Project Manager.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Prevent intermixing of soil types or contamination.
- E. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.
- F. Stockpile unsuitable or hazardous materials on impervious material and cover to prevent erosion and leaching, until disposed of. Dispose unsuitable or hazardous material within 48 hours of removal.

3.9 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.
- B. Leave unused materials in neat, compact stockpile.
- C. When borrow area is indicated, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

3.10 PROTECTION

- A. Prevent displacement or loose soil from falling into excavation; maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- C. Protect structures, utilities, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth operations.

END OF SECTION 31 05 13

SECTION 31 23 16 – UTILITY TRENCHING**PART 1 – GENERAL**

1.1 SUMMARY

A. Section Includes:

1. The work of this Section includes all saw cutting, utility trenching, earthwork and removal of surface material as required for construction of the utility trenches. Such earthwork shall include, but may not necessarily be limited to, the loosening, removing, loading, transporting, depositing, and compacting in its final location of all materials wet and dry, as required for the purposes of completing the work, which shall include, but not necessarily be limited to, the furnishing, placing, and removing of sheeting, shoring and bracing necessary to safely support the sides of all excavations; all pumping, ditching, draining and other required measures for the removal or exclusion of water from the excavation; the supporting of structures above and below the ground; all backfilling around structures and all backfilling of trenches and pits; restoration of surface, pavement markings, the disposal of excess excavated materials; borrow of materials to make up deficiencies for fills; and all other incidental earthwork.
2. All utility lines not owned by the City shall be designed and constructed in accordance with the rules and regulations of serving utilities. All utilities shall be installed prior to placement of the wearing surface of the street. It shall be the responsibility of the Contractor to conform to these provisions.
3. All broken concrete, pavement, base and other material and unsuitable and surplus excavated material shall be removed, hauled off the site and disposed of by the Contractor at a location obtained by the Contractor and approved by the Project Manager all at no additional cost to the City; said costs and fees shall be considered as included in the prices bid.
4. All materials regardless of character and subsurface conditions shall be excavated to the depths indicated or specified. During excavation, suitable trench material that will be used as backfill shall be piled in an orderly manner a sufficient distance from the banks of the trench to avoid overloading and to prevent slides or cave-ins, or shall be separately stockpiled. All excavated materials not required or unsuitable for backfill shall be disposed of outside the Right-of-Way as specified in Section 5-1.20B(4) "Contractor–Property Owner Agreement" of the State Standard Specifications
5. All hazardous materials shall be handled in accordance with all regulatory agency requirements and as specified in Section 14-11.03, "Hazardous

Waste Management”, of the State Standard Specifications. Contractor-generated hazardous waste shall be disposed of outside the Right-of-Way as specified in Section 14-11.06B, “Contractor-Generated Contaminated Soil”, of the State Standard Specifications. Within 5 business days of transporting hazardous waste, submit documentation of proper disposal from the receiving landfill.

6. Where there is not a specific bid item for Hazardous Waste Management, full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in handling of the hazardous waste shall be considered included in the price paid for various items of work and no separate compensation will be allowed therefor.
7. All surface openings shall be saw cut using a power-driven saw with a diamond blade to provide a smooth joint for both concrete and bituminous street and sidewalk surfaces. All the trenches shall be “T” cut trenches as per City Standard details.
8. Impact pavement breakers (drop hammers, stampers, jack hammers) are not permissible.
9. The requirements of Section 7-1.02K(6) and 7-1.02L(2) of State Standard Specifications concerning Trench Safety and Antitrust Claims shall be complied with in addition to the requirements of Article 6 and Section 1503 of the State of California Construction Safety Orders.
10. Grading shall be done as may be necessary to prevent surface water from flowing into trenches or other excavations. Unless otherwise indicated, excavation shall be by open cut except that short sections of a trench may be tunneled if the pipe, cable, or duct can be safely and properly installed, backfilled with Controlled Low Strength Materials not tamped in such tunnel sections.

B. Related Sections:

1. [Section 01 33 00 - Submittal Procedures](#)
2. [Section 02 41 00 - Demolition](#)
3. [Section 31 05 13 – Clearing & Grubbing, Excavation, and Earthwork](#)
4. [Section 32 11 23 - Aggregate Base Courses](#)
5. [Section 32 12 16 - Asphalt Paving](#)
6. [Section 32 13 13 - Concrete Surface Improvements](#)
7. [Section 33 05 13 - Manholes and Structures](#)
8. [Section 33 11 13 - Water Distribution Piping](#)
9. [Section 33 12 13 – Water Service Connections](#)
10. [Section 33 31 13 - Sanitary Sewer Piping](#)
11. [Section 33 41 13 - Storm Drainage Piping](#)

C. California Codes:

1. Titles 17 and 22 California Code of Regulations - Chapter 16 – California Waterworks Standards
2. Water Main Separation Criteria: Chapter 16 - California Waterworks Standards Article 6 - §64572

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT (For City CIP Projects only)

- A. Full compensation for "Utility Trenching" shall be considered as included in the contract prices paid for bid items of work involved and no additional compensation will be allowed therefor.

1.3 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:

1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³).
2. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³).
4. ASTM D1633 - Standard Test Methods for Compressive Strength of Molded Soil-Cement Cylinders.
5. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
6. ASTM D2419 - Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
7. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
8. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
9. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
10. ASTM D3776 - Standard Test Methods for Mass Per Unit Area (Weight) of Fabric.
11. ASTM D3786 - Standard Test Method for Bursting Strength of Textile Fabrics -Diaphragm Bursting Strength Tester Method
12. ASTM D4253 - Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
13. ASTM D4254 - Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
14. ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
15. ASTM D4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity
16. ASTM D4632 - Standard Test Method for Grab Breaking Load and

Elongation of Geotextiles

17. ASTM D4751 - Standard Test Method for Determining Apparent Opening Size of a Geotextile
18. Cal/OSHA - Division of Occupational Safety and Health (DOSH) Administration

- C. State Codes;
 - a. California Labor Code
 - b. Construction Safety Orders of the State of California
- D. State of California (Caltrans) - State Standard Specifications:
 - a. Section 25 - Aggregate Subbases
 - b. Section 26 - Aggregate Bases

1.4 DEFINITIONS

- A. Utility: Any buried pipe, duct, conduit, or cable.
- B. Utility Structure: Maintenance holes, inlets, catch basins or vaults

1.5 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. Excavation Protection Plan: Contractor's attention is directed to the provisions in Section 6705 of the California Labor Code. Prior to beginning any trench or structure excavation five (5) feet or more in depth, the Contractor shall submit to the Project Manager for review for compliance with Section 6705 of the Contractor's detailed excavation protection plan showing the design of all shoring, bracing, sloping of the sides of excavation, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trenches or structure excavations.
- C. Product Data: Contractor shall submit data for various types of backfill, trenching and shoring plans, and geotextile fabric. Contractor shall submit laboratory results indicating all soils and backfill material are not hazardous.
- D. Samples: Contractor shall submit fill samples, in air-tight containers for each type of fill to testing laboratory.
- E. Materials Source: Contractor shall submit name of imported fill materials suppliers.
- F. Manufacturer's Certificate: Certificates of Compliance shall be provided for all products and materials proposed to be used under this Section.
- G. Contractor shall submit a Safety Certification

1.6 QUALITY ASSURANCE

- A. Capital Improvement Projects (CIP):
1. All soil and backfill testing shall be done by a testing laboratory of the City's choice at the City's expense except as otherwise specified in Paragraph 1.6 B. below. The Contractor shall notify the Project Manager at least 48 hours prior to performing any utility excavation and before beginning of backfill materials.
 2. Where soil material is required to be compacted to a percentage of maximum density the maximum density at optimum moisture content will be determined in accordance with ASTM D 1557. Where cohesionless, free draining soil material is required to be densified to a percentage of relative density the calculation of relative density will be determined in accordance with ASTM D 4253 and D 4254. Field density in-place tests will be performed in accordance with ASTM D 2922, or by such other means acceptable to the Project Manager.
 3. In case the first test and one re-test of the fill or backfill show non-compliance with the requirements, the Contractor shall accomplish such remedy as may be required to insure compliance. Subsequent re-testing after the first re-test to show compliance shall be at the Contractor's expense.
- B. All Other Projects including but not limited to permit projects, utility company projects, development and redevelopment projects:
1. All soil and backfill testing shall be by the Permittee/Developer/Utility Company's Geotechnical Engineer of Record and shall submit all testing information to the City.
 2. Maintain one copy of the Construction Documents and City Standard Details and Specifications on site.

1.7 QUALIFICATIONS

- A. If the Contractor's excavation protection plan varies from the shoring system standards established in the Construction Safety Orders of the State of California, such alternative system plan shall be prepared, stamped and signed by a Civil or Structural Engineer licensed in the State of California at the Contractor's expense.

1.8 FIELD MEASUREMENTS

- A. Contractor shall verify field measurements prior to fabrication.

1.9 COORDINATION

- A. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.

PART 2 - PRODUCTS

2.1 SUITABLE FILL MATERIALS

- A. Suitable backfill shall be a selected or processed clean, fine earth, rock, or sand, free from objectionable materials, vegetation, or other deleterious substances.
- B. All import material from a source outside the project limits for use as backfill shall be clean soil, not hazardous, free from organic material, trash, debris, rubbish, broken Portland cement concrete, bituminous materials or other objectionable materials. Whenever the Contractor elects to use imported material for backfill, it shall be delivered not less than 10 days prior to the intended use and a sample of the material shall be submitted to the Project Manager for review. The sample shall have a minimum dry weight of 100 pounds and shall be clearly identified as to source, including street address and community of origin. The Project Manager will determine the suitability, the minimum relative compaction to be attained, and the placement method. If the backfill material is found not suitable, the Contractor shall remove material from the site and dispose of at no additional cost to the City.
- C. Should the imported material not be substantially the same as the approved sample, it shall not be used for backfill and shall be removed from the job site at the Contractor's expense.
- D. The densification method for imported material authorized by the Project Manager will be dependent upon its composition, the composition of the in-place soil at the point of placement, once the relative compaction to be obtained.
- E. The following are the types of backfill materials:
 - 1. **Sand** shall be a material with 100 percent passing a 3/8" sieve, at least 90 percent passing a No. 4 sieve, and a sand equivalent value not less than 30.
 - 2. **Class 2 Aggregate Base** shall be crushed rock aggregate base material meeting the requirements of Section 26, "Aggregate Bases", for 3/4" maximum aggregate gradation, of the State Standard Specifications. Recycled Aggregate Base is an acceptable backfill material.
 - 3. **Controlled Low Strength Materials (CLSM)** shall be fluid workable mixture of cement, pozzolan, aggregate and water mixed in accordance with ASTM C94. Cement shall be Type II Cement and comply with ASTM C150. Pozzolan shall be added to improve the flowability and shall be Type F in accordance with the requirements of ASTM C618. Water must be free of oil, salts, and other impurities that adversely affect the backfill. Aggregate must consist of well graded mixture of crushed rock, soil, or sand with a maximum aggregate size of 1/2-inch. 100percent of the aggregate shall pass the 3/4" sieve and not more than 30-percent retained on the 3/8" sieve and not more than 12 percent shall pass the No. 200 sieve. Air entraining admixtures shall be added to improve the workability and shall in accordance with the requirements of ASTM C260. Density of CLSM shall be between 120 pounds per cubic feet to 135 pounds per cubic feet. Minimum 28-day compressive strength for CLSM shall be between 50psi

minimum to 100psi for depths 20 feet or less in height of cover. For depths greater than 10 feet in height, CLSM mix shall have a minimum 28-day compressive strength of 100 psi.

4. **Native** material shall be material obtained from on-site excavations, provided the materials are not classified as unsuitable. Native materials shall be free of stones, lumps, rubbish, debris, organic material, broken concrete or bituminous surfacing over 4 inches in diameter, objectionable material, vegetation, and deleterious substances.
5. **Class 2 Permeable Material** shall be hard, durable, crushed stone, or gravel, and free from slaking or decomposition under action of alternate wetting or drying, uniformly graded, and shall meet the requirements of Section 68-2.02F for Class 2 "Permeable Material", of the State Standard Specifications.
6. **Topsoil** shall be material which has been obtained at the site or may be imported and shall meet the requirements of [Section 32 90 00 -Landscape Work](#). Removal of topsoil shall be done after the area has been stripped of vegetation and debris as specified.

2.2 UNSUITABLE BACKFILL MATERIALS

- A. Any material determined to be hazardous is defined as unsuitable material.
- B. Unsuitable soils for backfill material shall include soft, spongy, unstable or other similar soils which, when classified under ASTM D 2487, fall in the classifications of Pt, OH, or OL. Types CH and MH soils will be permitted in unimproved areas only where required compaction and stability can be demonstrated. In addition, any soil which cannot be compacted sufficiently to achieve the percentage of maximum density specified for the intended use, shall be classified as unsuitable material.
- C. Washed, smooth rock (pea gravel) is classified as unsuitable material.

2.3 FILTER FABRIC

- A. Filter Fabric shall be permeable, non-woven synthetic fabric meeting the requirements of Section 96-1.02B," Filter Fabric" of the State Standard Specifications. Filter fabric shall have minimum Grab breaking load in each direction of 157 pounds, a minimum puncture strength of 310 pounds, apparent opening size between 40 and 70.

2.4 TEMPORARY STEEL PLATES

- A. When approved by the Project Manager, the Contractor may use steel plate bridging in-lieu of backfill and temporary asphalt where the roadway surface is to be opened to traffic. All steel plates shall be without deformation. Inspectors shall determine the trueness of steel plates by using a straight edge and shall reject

any plate that is permanently deformed.

- B. Trench plates shall be coated with Antiskid type surface meeting State Standard Specifications of a nominal Coefficient of friction of 0.35 in accordance with California Test Method 342 (Appendix H).
- C. The following table shows the advisory minimal thickness of steel plate bridging required for a given trench width (A-36 grade steel, designed for HS20-44 truck loading per Caltrans Bridge Design Specifications Manual).

Trench Width	Minimum Steel Plate Thickness (inches)
10 inches	1/2 inch
1 feet 11 inches	3/4 inch
2 feet 7 inches	7/8 inch
3 feet 5 inches	1 inch
4 feet 3 inches	1-3/4 inch

NOTE: For trench width spans greater than 4 feet 3 inches, a structural design shall be prepared, signed, and stamped by a California Registered Civil Engineer.

- D. A Rough Road signs (W8-8) with black lettering on an orange background shall be used in advance of steel plate bridging.

PART 3 - EXECUTION

3.1 DEFINITIONS - PIPE ZONE, BEDDING, TRENCH & FINAL ZONE

- A. **Pipe Zone:** Pipe Zone is defined as the vertical trench cross-section between the trench subgrade, which is 0.4 times the outside diameter of the pipe in inches below the bottom surface of the pipe or 4" minimum whichever is greater, and 12 inches above the top surface of the pipe.
- B. **Bedding:** Bedding is defined as that portion of the Pipe Zone between the trench subgrade, which is 0.4 times the outside diameter of the pipe in inches below the bottom surface of the pipe or 4" minimum whichever is greater and a level line from the bottom of the pipe.
- C. **Trench Zone:** The Trench Zone is defined as the vertical trench cross-section between top of Pipe Zone and 36" below finish paved surface. In unpaved areas, the Trench Zone shall be the vertical cross-section between the top of Pipe Zone and 24 inches below finished unpaved or landscape surface.
- D. **Final Zone:** The Final Zone is defined as the upper 36 inches of vertical cross-section below the finished paved surface. In unpaved or landscaped areas, the Final Zone is the upper 24 inches of vertical cross-section below the finished surface.
- E. **Pavement Section:** The Pavement Section is defined as the engineered layers

of pavement and base conforming to the hot mix asphalt pavement or concrete pavement and aggregate base thickness as shown on the Plans.

- F. **Backfill:** Backfill is considered to be the material used to fill the portion of a trench between the pipe Bedding and the roadway subgrade or finish surface in non-roadway areas
- G. **Trench Plugs:** Trench plugs are temporary barriers placed within an open trench excavation in order to minimize the volume and velocity of trench water flow at the base of slopes and to reduce erosion in the trench, preventing the trench from becoming a subsurface drainage path. These trench plugs may consist of unexcavated portions of the trench, compacted subsoil, sandbags, or some functional equivalent.

3.2 PIPE ZONE BACKFILL MATERIALS

- A. Bedding as defined in this section shall be Sand or Class 2 Aggregate Base.
- B. Pipe Zone backfill, excluding bedding as defined in this section shall be
 1. Sand for plastic pipe
 2. Sand or Class 2 Aggregate Base for ductile iron pipe, vitrified clay pipe and reinforced concrete pipe.
- C. For dry utility and/or joint trench, Pipe Zone backfill shall conform to latest Pacific Gas and Electric Company (PG&E) Greenbook's Engineering Material Specification No. 4123 - Backfill Sand or meeting the utility owner's specifications.
- D. Trench plugs shall be provided at minimum intervals of 200 feet where pipelines are installed on grades exceeding 4 percent, and where backfill materials have gradation less than 10 percent passing a No. 4 sieve.
- E. Unless otherwise specified Bedding and backfill around sub-drainage systems shall be minimum of 12 inches of Class 2 Permeable Material as specified in Section 68-2.02F(3) of the State Standard Specifications.

3.3 TRENCH ZONE BACKFILL MATERIALS

- A. Trench Zone backfill as defined in this section shall be Class 2 Aggregate Base in paved areas.
- B. Native backfill material shall be used in unpaved or landscape areas.

3.4 FINAL ZONE BACKFILL MATERIALS

- A. Final Zone backfill as defined in this section shall be
 1. Native backfill in unpaved areas
 2. Native backfill with 6 inches thick minimum Top Soil material in landscape areas.
 3. Class 2 Aggregate Base in paved areas below the Pavement Section.

3.5 TRENCH WIDTH & LENGTH

A. Minimum Trench width shall be as follows:

Utility Pipe Outside Diameter (O.D.) (inches)	Minimum Trench Width (inches)
For Pipe Sizes under 12 inches	Pipe O.D. + 12 inches
For Pipe Sizes between 12 inches to 48 inches	Pipe O.D. + 24 inches
For Pipe Sizes above 48 inches	Pipe O.D. + 48 inches

For Dry Utilities (electrical, telephone, cable, street light and traffic signal conduits), the trench width shall be 18" minimum.

B. Maximum Length of Open Trench: Except by permission of the Project Manager, the maximum length of open trench where prefabricated pipe is used shall be the distance necessary to accommodate the amount of pipe installed in a single day and shall not exceed 300 feet. The distance is the collective length at any location, including open excavation, pipe laying and appurtenant construction and backfill which has not been temporarily re-surfaced.

C. Except by permission of the Project Manager, the maximum length of open trench in any one location where concrete structures are cast in place will be that which is necessary to permit uninterrupted progress.

3.6 PREPARATION

A. Call Local Utility Line Information service at USA North 811 not less than three working days before performing Work.

1. Request underground utilities to be located and marked within and surrounding construction areas.

B. Contractor's Licensed Land Surveyor shall provide all construction surveying and staking prior to beginning any trenching and excavation.

C. Protect bench marks, street monuments, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

D. Contractor shall maintain and protect above and below grade utilities unless otherwise noted.

E. Establish temporary traffic control per Contractor's approved traffic control plans when trenching is performed in public right-of-way. Relocate controls as required during progress of Work.

3.7 SHEETING AND SHORING

A. Sheet, shore, and brace excavations more than 5 feet deep to prevent dangerto persons, structures and adjacent properties and to prevent caving, erosion, and

loss of surrounding subsoil.

- B. All sheeting, shoring and bracing shall conform to Cal/OSHA.
- C. Support trenches more than 5 feet deep excavated through unstable, loose, or soft material. Provide sheeting, shoring, bracing, or other protection to maintain stability of excavation.
- D. Design sheeting and shoring to be removed at completion of excavation work.
- E. Repair damage caused by failure of the sheeting, shoring, or bracing and for settlement of filled excavations or adjacent soil.
- F. Repair damage to new and existing Work from settlement, water or earth pressure or other causes resulting from inadequate sheeting, shoring, or bracing.
- G. **Access to Trenches** - A stairway, ladder, ramp or other safe means of egress shall be located in trench excavations that are 4 feet or more in depth so as to require no more than 25 feet of lateral travel for the employees, the Contractor, and any other personnel.
- H. **Bracing Excavations** - The manner of bracing excavations shall be as set forth in the rules, orders and regulations of the Division of Industrial Safety of the State at California.

3.8 TEMPORARY ACCESSIBLE PEDESTRIAN BRIDGES

- A. Temporary Accessible Pedestrian bridges of approved construction not less than four feet in width in compliance with ADA, and provided with hand rails and supports of dressed lumber, shall be installed over trenches at all crosswalk intersections, and at such other points where traffic conditions make it advisable. Substantially constructed bridges, adequate for handling all vehicular traffic, shall be installed over any trench or other excavation in a street intersection, whenever such excavation is in excess of half the width of the street crossing. Adequate bridges shall be provided to make possible the safe and full use of all driveways or roadways used to move vehicles from the public street onto private property.
- B. All bridges required to be installed shall be maintained in place as long as the condition of the work requires their use for the safety and convenience of the public. Removal or relocation of these temporary bridges shall be at the Contractor's own discretion and risk.

3.9 TRENCHING AND EXCAVATION

- A. All excavations for utilities, pipelines and Minor Structures shall be open cut trenches, unless otherwise shown.
- B. Do not advance open trench more than 200 feet ahead of installed pipe.
- C. Cut trenches to widths per Standard Specifications or as indicated on the

Drawings and sufficiently wide to enable installation and allow inspection. Remove water or materials that interfere with Work.

- D. Excavate trenches to depth per Standard Specifications or as indicated on Drawings. Provide uniform and continuous bearing and support for bedding material and utility pipes.
- E. Do not interfere with 45-degree bearing splay of foundations.
- F. When Project conditions permit, slope side walls of excavation per Cal/OSHA. When side walls cannot be sloped, provide sheeting and shoring to protect excavation as specified in this section.
- G. Excavation and other work under or adjacent to existing pipe lines, cables, conduit runs or structures of any kind, shall be prosecuted in such a manner as not to interfere with the safe operation and use of such installations. Should any damage be incurred to existing facilities during the Contractor's operations, the Contractor shall immediately notify the proper owners or authorities, and shall arrange for the immediate repair of same at the Contractor's own expense.
- H. Excavations for appurtenant structures, such as but not limited to maintenance holes, transition structures, junction structures, vaults, valve boxes, catch basins, thrust blocks, and boring pits shall, for the purpose of shoring and bracing, be deemed to be in the category of trench excavation.
- I. Excavation shall include the removal of all water and materials of any nature which interfere with the construction work. Removal of ground water to a level below the structure sub-grade will be necessary unless specified otherwise. The water removed during excavation shall not be directed to storm drain system. The contractor shall apply to Delta Diablo for a Discharge Permit to dispose the water encountered during excavations into the sanitary sewer system.
- J. Should the Contractor elect to tunnel or jack any portion, he shall first obtain approval from the Project Manager. Payment for such work will be made as though the originally specified method of construction has been used.
- K. Trenching, tunneling, boring and jacking shall comply with the applicable provisions of the State Standard Specifications, these specifications and the plans. All work shall comply with the applicable Federal, State and local laws, regulations, codes and ordinances, and in addition, shall meet the respective utility agencies requirements for joint trench construction for installation of conduits, including, but not limited to, safety, depth, size, type, connection and other regulations and shall be considered as included in the various contract items of work and no additional compensation shall be made therefor.
- L. Pipe will be carefully inspected in the field before and after laying. If any cause for rejection is discovered in a pipe after it has been laid, it shall be subject to rejection. Any corrective work shall be approved by the Project Manager and shall be at no cost to the City.
- M. When connections are to be made to any existing pipe, conduit, or other

appurtenances, the actual elevation or position of which cannot be determined without excavation, the Contractor shall excavate for, and expose, the existing improvement before laying any pipe or conduit. The Project Manager shall be given the opportunity to inspect the existing pipe or conduit before connection is made.

- N. Gravity flow pipe shall be laid downstream to upstream with the socket or collar ends of the pipe upgrade unless authorized by the Project Manager.
- O. Concrete pipe with elliptical reinforcement shall be laid with the minor axis of the reinforcement cage in a vertical position.
- P. Any adjustments in line or grade of not more than 0.1 feet up or down which may be necessary to accomplish the intent of the plans shall be considered as included in the various contract items of work and no additional compensation will be made therefor.
- Q. Locations of existing underground utilities and structures, insofar as they are known from information furnished by the respective utility companies and agencies, have been shown on the plans. The City assumes no responsibility for the accuracy or completeness of said data, which is offered solely for the convenience of the Contractor it shall be the Contractor's responsibility to verify the location of these obstructions, and to locate any other underground utilities or structures, which might interfere with the Contractor's operations.
- R. If soft spongy, unstable or other similar material is encountered upon which the bedding material or pipe is to be placed, this unsuitable material shall be removed to a depth ordered by the Project Manager and replaced with bedding material suitably densified. Additional bedding so ordered, over the amount required by the plans or specifications, will be paid for as provided in the Proposal or the Technical Specifications. If the necessity for such additional bedding material has been caused by an act or failure to act on the part of the Contractor, or is required for the control of ground water, the Contractor shall bear the expense of the additional excavation and bedding.
- S. Where pipe culverts are to be installed in new embankment, it shall first be constructed to the required height as shown on the plans, and for a distance each side of the culvert location of not less than five (5) times the diameter of the culvert, after which the trench shall be excavated with sides as nearly vertical as soil conditions will permit and culvert installed
- T. For excavations in landscape areas, all damaged irrigation systems, including irrigation piping and electrical wiring shall be repaired and restored to the original condition on the same day they are damaged. All landscape surface areas shall be restored to its original condition unless specified otherwise.
- U. No tree roots over 1.5 inches in diameter shall be cut without the authorization from the Project Manager or City's Arborist. If existing roots over 1 inch in diameter are cut during the course of work, the cut faces shall be thoroughly coated with emulsified asphalt made especially for use on cut or damaged plant tissues. All exposed roots shall be covered with wet burlap to prevent them from

- V. Trim excavation. Hand trim for bell and spigot pipe joints. Remove loose matter.
- W. Correct over excavated areas with compacted backfill as specified for authorized excavation as directed by Project Manager.
- X. Remove excess subsoil not intended for reuse, from site. The legal disposal of excess materials shall be the responsibility of the Contractor.
- Y. Use of explosives and blasting material will not be permitted.
- Z. Stockpile excavated material in area designated on site as shown on the Contractor's approved Staging Plans.
- AA. In areas of high vehicular or pedestrian volumes, the Project Manager may order the immediate removal of excavated material and that sidewalks and gutters be kept clean at all times.
- BB. The Contractor may transport or backhaul material to be used as backfill material from any portion of a project to any other portion or line of the same project, or from any project being constructed under one contract to any other project being constructed under that same contract. Such transported material shall be clean soil, free from organic material, trash, debris, rubbish, or other objectionable substances except that broken Portland cement concrete or bituminous type paving allowable for the type of backfill specified may be permitted

3.10 OVER-EXCAVATION

- A. When ordered by the Project Manager, whether or not indicated in the project plans and specifications, trenches shall be over-excavated beyond the depths shown and such over-excavation shall be to the depths ordered the Project Manager. Backfill for over excavation backfill shall be Class 2 Permeable materials. For wet trenches, Contractor shall install a filter fabric on top and below the permeable materials.

3.11 PIPE LAYING

- A. Lay pipes to lines and grades indicated on Drawings, with uniform bearing under the full length of the barrel of the pipe. Project Manager reserves right to make changes in lines, grades, and depths of utilities when changes are required for Project conditions.
- B. Pipe sections shall be laid and joined in such a manner that the offset of the inside of the pipe at any joint will be held to a minimum at the invert. The maximum offset at the invert of pipe shall be 1 percent of the inside diameter of the pipe or 3/8 inch, whichever is smaller.
- C. After the joints have been made, the pipe shall not be disturbed in any manner.

- D. At the close of work each day, or whenever the work ceases for any reason, the end of the pipe shall be securely closed unless otherwise permitted by the Project Manager.
- E. All pipe shall be installed in accordance with the manufacturer's recommendations.
- F. The interior of the pipe shall be clean and free from foreign materials before sections of the pipe are connected. The open ends of the pipe shall be sealed with watertight plugs or other approved means at times when pipe laying is not in progress. Under no conditions shall ground water be allowed to enter the pipe.
- G. Dropping or bumping of pipe will not be permitted. Care shall be exercised by the Contractor to prevent damage to the pipe during handling. There shall be no distortion or deflection of the pipe which might induce damage to the pipe, pipe lining, pipe coating or joints.
- H. Pipe will be carefully inspected in the field before and after laying. In no event shall rejected pipe be installed. Any pipe failing to pass inspection after laying shall be subject to rejection. Any corrective work shall be approved by the Project Manager and shall be at no cost to the City.
- I. The Contractor shall provide a minimum of twelve (12) inches vertical clearance between the pipe and proposed or existing facilities and improvements or per the Utility owner's requirements. A minimum of twelve inches (12 inches) vertical clearance between the pipe and sanitary sewers, gas or petroleum lines and telephone cables shall be provided. Clearance for electrical conduits shall be as provided in the applicable General Safety Orders or utility regulations. Sanitary sewer and water lines shall be 10 feet horizontally clear and not in the same trench and in conformance with Water Main Separation Criteria: Chapter 16 - California Waterworks Standards Article 6 - §64572, unless specifically shown or directed by the Project Manager.
- J. Every precaution shall be taken against floating the pipe. In case of such floating, the Contractor shall replace the pipe to its proper location at his own expense, and replace any damaged pipe which may have resulted.

3.12 PLACING AND SPREADING OF BACKFILL MATERIALS

- A. Regardless of compaction method, backfill shall be evenly spread in horizontal layers so that when compacted each layer shall not exceed eight (8) inches in thickness. During spreading, each layer shall be thoroughly mixed as necessary to promote uniformity of material and uniformity of moisture throughout backfill materials. Material placed in excess of eight (8) inches in thickness shall be removed and re-compacted with the next lift.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
- C. Water shall be added before or during spreading until the proper moisture content is achieved where the backfill material moisture content is below the optimum

- D. Where the backfill material moisture content is too high to permit the specified degree of compaction, the material shall be dried or replaced until the moisture content is satisfactory.
- E. Unless otherwise approved by the Project Manager, all trenches within the existing roadway shall be backfilled completely and the roadway made passable to traffic at the end of each day's operation.
- F. Backfill, or fill, as the case may be, for cast-in-place structures such as, but not limited to, manholes, transition structures, junction structures, vaults, valve boxes and reinforced concrete conduits shall start at the sub-grade for the structure.
- G. Except where the pipe must remain exposed for force main leakage tests and subject to the provisions herein, the Contractor shall proceed as soon as possible with backfilling operations. Care shall be exercised so that the conduit will not be damaged or displaced. If the pipe is supported by concrete bedding placed between the trench wall and the pipe, the remainder of any bedding material shall be placed to 1 foot over the top of the conduit. The backfill above the concrete bedding shall not be placed nor sheeting pulled until the concrete has attained sufficient strength as required by the Project Manager.
- H. Trenches shall not be backfilled until all required pressure tests are performed and until the utilities systems as installed conform to the requirements specified in the several sections covering the installation of the various utilities.
- I. Voids left by the removal of sheeting, piles and similar sheeting supports shall be immediately backfilled and compacted into place to assure dense and complete filling of the voids.
- J. After the placing of backfill has been started, the Contractor shall proceed as soon as practicable with compaction.
- K. Backfill shall be mechanically compacted by means of tamping rollers, sheepsfoot rollers, pneumatic tire rollers, vibrating rollers, or other mechanical tampers. All such equipment shall be of a size and type approved by the Project Manager. Impact-type pavement breakers (stompers) will not be permitted. Sheepsfoot equipment shall be limited to outside the Pipe Zone.
- L. Permission to use specific compaction equipment shall not be construed as guaranteeing or implying that the use of such equipment will produce required results or will not result in damage to adjacent ground, existing improvements, or improvements installed under the contract. The Contractor shall make its own determination in this regard.
- M. Material for mechanically compacted, backfill shall be placed in lifts which, prior to compaction, shall not exceed the thickness specified above.
- N. Mechanically compacted backfill shall be placed in horizontal layers of thickness compatible to the material being placed and the type of equipment being used.

Each layer shall be evenly spread, moistened (or dried, if necessary), and then tamped, vibrated or rolled until the specified relative compaction has been attained.

3.13 COMPACTION OF BACKFILL MATERIALS

- A. Compaction of backfill materials shall be in accordance with ASTM D1557 for cohesive type soils and in accordance with ASTM D4253 and D4254 for cohesionless, free-draining granular type materials. The following compaction test requirements shall apply:

Location of backfill	Relative Compaction
Pipe Zone (including Bedding)	90
Trench Zone	90
Final Zone (paved areas, excluding the Pavement Section)	95
Final Zone (unpaved or landscape areas)	90
Over-excavated areas	90
Around minor structures	90
Beneath minor structures	95

- B. Compaction of Pipe Zone including Bedding material shall be by hand tamping, hand held mechanical vibrating equipment or other means approved by the Project Manager.
- C. Each layer of backfill material shall be mechanically compacted to the specified percentage of maximum density. Equipment that is consistently capable of achieving the required degree of compaction shall be used and each layer shall be compacted over its entire area while the material is at the required moisture content range. Flooding, ponding, or jetting shall not be used.
- D. Use hand operated power compaction equipment where use of heavier equipment is impractical or restricted due to weight limitations.
- E. Backfill within 3 feet of structures or walls shall be compacted with hand operated equipment. Do not use equipment weighing more than 10,000 pounds closer to walls than a horizontal distance equal to the depth of the fill at that time.

3.14 TEMPORARY RESURFACING

- A. Unless permanent pavement is placed immediately, temporary bituminous resurfacing 2 inches thick shall be placed and maintained in streets and parking lot areas and at locations determined by the Project Manager wherever excavation is made through pavement, sidewalk or driveways. Temporary asphalt shall be placed flush with the adjacent pavement grade.
- B. Hot Mix Asphalt shall be used for temporary resurfacing when permanent surfacing is not to be placed within seven (7) days.

- C. In sidewalk areas the temporary bituminous re-surfacing shall be at least 1-inch-thick, in all other areas it shall be at least 2 inches thick. At major intersections and other critical locations, a greater thickness may be ordered. Temporary resurfacing shall be placed as soon as the condition of the backfill is suitable to receive it and shall remain in place until the condition of the backfill is suitable for permanent resurfacing. Surfacing shall be maintained in a smooth and level condition. The temporary paving shall conform to the requirements of Section 39 of the State Standard Specifications and unless specified differently in the Technical Specifications, may use any of the mixes allowed in Section 39 for such temporary surfacing of trenches.
- D. The re-surfacing shall be placed, rolled, maintained, removed and disposed of by the Contractor.

3.15 PAVEMENT SECTION REPLACEMENT

- A. Unless otherwise specified on the plans or in the Technical Specifications, all existing pavement surface improvements damaged or removed as a result of the Contractor's operations shall be reconstructed by the Contractor per City of Pittsburg Standard Detail R-5, to same dimensions, except for pavement thickness, and with the same type materials used in the original work. Trench resurfacing shall match the existing pavement thickness, but no less than 3 inches.
- B. The type and thickness of the replacement pavement, base, cement treated base, and sub-base for trenches in public streets and highways shall be as shown on the plans or designated by the Project Manager.
- C. Unless otherwise specified, the following requirements shall govern:

Sub-base: Existing sub-base shall be replaced with Class 2 Aggregate Base. The thickness of sub-base replacement shall be designated by the Project Manager, and that portion of trench backfill lying within such designated limits shall be compacted in accordance with this Section and shall not be less than ninety-five (95) percent as determined by California Test Method No. 216.
- D. Surfacing of trenches in new street sections shall be as required to match the Pavement Section as shown on the project plans and specifications.

3.16 TOLERANCES

- A. [Section 01 45 00 - Quality Control](#): Tolerances.
- B. Top Surface of Backfilling under paved areas: Plus or minus 1/2 inch from required elevations.
- C. Top Surface of General Backfilling: Plus or minus 1/2 inch from required elevations.

3.17 FIELD QUALITY CONTROL

- A. [Section 01 45 00 - Quality Control](#): Field inspecting, testing, adjusting, and balancing.
- B. Perform laboratory material tests in accordance with ASTM D1557, ASTM D698, and AASHTO T180.
- C. Perform in place compaction tests in accordance with the following:
 - 1. Density Tests: ASTM D1556, ASTM D2167, or ASTM D2922.
 - 2. Moisture Tests: ASTM D3017.
- D. When tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest at the Contractor's expense.

3.18 PROTECTION OF FINISHED WORK

- A. [Section 01 77 00 - Closeout Requirements](#): Contractor shall protect all the finished work and any damage to the finished work shall be replaced at the Contractor's expense.

3.19 TEMPORARY STEEL PLATE BRIDGING

- A. When backfilling operations of an excavation in the roadway including bike lanes, sidewalks and parking strip, whether transverse or longitudinal, cannot be properly completed within a work day, steel plate bridging with a non-skid surface and shoring shall be required to preserve unobstructed traffic and pedestrian flow. In such cases, the following conditions shall apply:
 - 1. Steel plates used for bridging must extend a minimum of 12-inches beyond the edges of the trench.
 - 2. Steel plate bridging shall be installed to operate with minimum noise or movement.
 - 3. The trench shall be adequately shored to support the bridging and traffic loads.
 - 4. Temporary paving with cold asphalt concrete shall be used to feather the edges of the plates, if plate installation by Method (2) described below, is used.
 - 5. Bridging shall be secured against displacement by using adjustable cleats, shims, or other devices.
- B. The Contractor is responsible for maintenance of the steel plates, shoring, asphalt concrete ramps, and ensuring that they meet minimum specifications.
- C. All work done by the City crews for lack of maintenance of the temporary steel plates as specified above by the Contractor shall be back charged to the Contractor.
- D. Steel plate bridging shall not exceed four (4) consecutive working days in any given week and should not be left through the weekend, unless approved by the

E. Steel plate bridging and shoring shall be installed using either Method (1) or (2):

1. **Method 1** For speeds of 45 MPH or greater:

The pavement shall be cold planed to a depth equal to the thickness of the plate and to a width and length equal to the dimensions of the plate. Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of two (2) dowels pre-drilled into the corners of the plate and drilled 2-inches into the pavement. Subsequent plates are to be butted and tack welded to each other.

2. **Method 2** For speeds less than 45 MPH:

Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of two (2) dowels pre-drilled into the corners of the plate and drilled 2-in into the pavement. Subsequent plates are to be butted and tack welded to each other. Fine graded asphalt concrete shall be compacted to form ramps, maximum slope 8.5 percent with a minimum 12-inch taper to cover all edges of the steel plates. When steel plates are removed, the dowel holes in the pavement shall be backfilled with either graded fines of asphalt concrete mix, concrete slurry, epoxy or an equivalent that is satisfactory to the Project Manager.

END OF SECTION 31 23 16

SECTION 32 11 23 - AGGREGATE BASE COURSES**PART 1 – GENERAL**

1.1 SUMMARY

A. Section Includes:

1. Class 2 Aggregate Base course.

B. Related Sections:

1. [Section 31 23 16 - Utility Trenching](#): Compacted fill under base course.
2. [Section 32 12 16 - Asphalt Paving](#): Binder and finish asphalt courses.
3. [Section 32 13 13 - Concrete Surface Improvements](#): Finish concrete surface course.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Aggregate Base Course: Full compensation for “Aggregate Base Course” shall be considered as included in the contract prices paid for bid items of work involved and no additional compensation will be allowed therefor.

1.3 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications.

B. Caltrans Standard Specifications:

1. Section 26 Aggregate Base.

C. CalRecycle

1. <http://www.calrecycle.ca.gov/ConDemo/Aggregate/>

1.4 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.

B. Product Data:

1. Submit data for geotextile fabric and herbicide.

- C. Samples: Submit, in air-tight containers, 5 lbs sample of each type of aggregate fill to testing laboratory or as required by the City.

- D. Submit aggregate base gradation, R-value requirements, and sand equivalent requirements as specified in this sections.
- E. Aggregate samples must not be treated with lime, cement, or chemicals before testing for durability index.
- F. Aggregate from untreated reclaimed processed asphalt concrete, Portland cement concrete, lean concrete base or cement-treated base is not considered treated.
- G. If the aggregate gradation test results, sand equivalent test results, or both do not comply with the Contract compliance requirements, remove the aggregate base or request a payment deduction. If the payment deduction request is authorized, \$2.00/cubic yard is deducted.
- H. Materials Source: Submit name of aggregate materials suppliers.
- I. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
- J. Field survey and certify the top of aggregate base design grades as specified in [Section 01 71 23 - Construction Surveying](#).
- K. Supplier shall submit certification data that aggregate base meets the requirements per Caltrans Testing Methods.

1.5 SUSTAINABLE DESIGN SUBMITTALS

- A. Manufacturer's Certificate: Certify products meet or exceed specified sustainable design requirements.
 - 1. Materials Resources Certificates:
 - a. Certify source and origin for salvaged and reused products.
 - b. Certify recycled material content for recycled content products.
 - c. Certify source for regional materials and distance from jobsite.

1.6 QUALITY ASSURANCE

- A. Furnish each aggregate material from single source throughout the Work.
- B. Perform Work according to City Standards.

PART 2 - PRODUCTS

2.1 SUSTAINABILITY CHARACTERISTICS

- A. Materials and Resources Characteristics:
 - 1. Recycled Content Materials: Furnish materials with maximum available

2. Regional Materials: Furnish materials extracted, processed, and manufactured within 500 miles of jobsite.

2.2 AGGREGATE MATERIALS

- A. Aggregate must be clean and consist of any combination of the following:
 1. Broken Stone
 2. Crushed Gravel
 3. Natural rough-surfaced gravel
 4. Sand
 5. Processed reclaimed asphalt concrete, Portland cement concrete, lean concrete base, or cement-treated base.
- B. Quality: Aggregate base furnished for the base material shall be free from vegetable matter and other deleterious substances, and shall be of such nature that it can be compacted readily under watering and rolling to form a firm stable base.
- C. Maximum aggregate size shall be 3/4-inch maximum aggregate gradation unless specified otherwise.
- D. Class 2 Aggregate Base: ASTM D2940; graded type. Conform to Section 26 of the Caltrans Standard Specifications. Aggregate gradation for 3/4-inch maximum aggregate base must be within the percentage passing limits for the sieve sizes shown in the following table:

Aggregate Gradation		
Sieve Size	Percentage Passing	
	Operating Range	Contract compliance
2"	-	-
1-1/2"	-	-
1"	100	100
3/4"	90-100	87-100
No. 4	35-60	30-65
No. 30	10-30	5-35
No. 200	2-9	0-12

- E. The aggregate quality characteristic must comply with the requirements shown in the following table:

Aggregate Quality Characteristics		
Quality Characteristics	Requirement	
	Operating Range	Contract compliance
Resistance (R-value, min.)	-	78
Sand Equivalent (min.)	25	22
Durability Index (min.)	-	35

PART 3 - EXECUTION**3.1 EXAMINATION**

- A. Verify compacted subgrade is dry and ready to support paving and imposed loads.
 - 1. Proof roll subgrade with minimum two perpendicular passes to identify soft spots unless specified otherwise in the Project Geotechnical Report.
 - 2. Remove soft subgrade and replace with compacted fill unless specified otherwise in the Project Geotechnical Report or as ordered by the Project Manager.
- B. Immediately before spreading aggregate base, the subgrade must comply with the specified compaction and elevation tolerance for the material involved and be free from loose or extraneous materials.
- C. Contractor may use aggregate base to fill areas of the subgrade that are lower than the grade as shown on the Drawings.

3.2 PREPARATION

- A. Correct irregularities in subgrade gradient and elevation by scarifying, reshaping, and re-compacting.
- B. Do not place fill on soft, muddy, or frozen surfaces.

3.3 AGGREGATE PLACEMENT

- A. Deliver uniform thickness of aggregate base to the roadbed. Deposit aggregate base in layers or windrows.
- B. Spread and shape the aggregate base to such thickness that after watering and compacting, the completed aggregate base is within the tolerances specified below in Section 3.5.
- C. Avoid material segregation. Segregated materials shall be re-mixed until uniform.
- D. Aggregate base must be free from pockets of coarse or fine material.
- E. If the aggregate base thickness shown is 0.50 foot or less, spread and compact the aggregate base in one layer. If the thickness shown is more than 0.50 foot, spread and compact the aggregate base in at least 2 approximately equal layers in thickness. The compacted thickness of any one later must not exceed 0.50 foot.
- F. At locations inaccessible to spreading equipment, spread and compact aggregate base by any means that will attain the specified requirements; by hand compaction if needed.
- G. Apply water to moisture condition the aggregate base as needed for optimum

moisture content for compaction.

- H. Compact each aggregate base layer to at least 95 percent relative compaction.
- I. If bi-axial is installed as shown on the Drawings or as directed by the City's Project Manager, compact aggregate base with either (1) a smooth-wheeled roller or (2) a rubber-tired roller. Do not use vibratory devices during compaction.
- J. Level and contour surfaces to elevations, profiles, and gradients indicated.
- K. Maintain optimum moisture content of fill materials to attain specified compaction density.
- L. Correct areas of aggregate base that do not comply with the described thickness.

3.4 TOLERANCES

- A. [Section 01 45 00 - Quality Control](#): Tolerances.
- B. Maximum Variation from Flat Surface: 1/4 inch measured with 10-foot straight edge.
- C. Maximum Variation from Thickness: 1/4-inch.
- D. Maximum Variation from Elevation: 1/4-inch.

3.5 FIELD QUALITY CONTROL

- A. [Section 01 77 00 - Closeout Requirements](#): Field inspecting, testing, adjusting, and balancing.
- B. When tests indicate Work does not meet specified requirements, correct areas of aggregate base that do not comply with the specified requirements and retest, or request a payment deduction. If a payment deduction is authorized, the deduction is calculated by multiplying:
 - 1. Deficient thickness less allowable tolerance
 - 2. Planned width
 - 3. Longitudinal distance of the deficient thickness
 - 4. \$17.00/cubic yard of the item price adjusted for cubic yards, whichever is higher

END OF SECTION 32 11 23

SECTION 32 12 16 - ASPHALT PAVING**PART 1 - GENERAL**

1.1 SUMMARY

A. Section Includes:

1. Asphalt materials.
2. Aggregate materials.
3. Type A HMA Asphalt paving
4. Tack coat
5. Asphalt Rubber Binder Seal Coat

B. Related Requirement:

1. [Section 32 11 23 - Aggregate Base Courses](#): Compacted subbase for paving.
2. [Section 33 05 13 - Manholes and Structures](#)

1.2 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials:

1. AASHTO M17 - Standard Specification for Mineral Filler for Bituminous Paving Mixtures.
2. AASHTO M29 - Standard Specification for Fine Aggregate for Bituminous Paving Mixtures.
3. AASHTO M140 - Standard Specification for Emulsified Asphalt.
4. AASHTO M208 - Standard Specification for Cationic Emulsified Asphalt.
5. AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications.
6. AASHTO M320 - Standard Specification for Performance-Graded Asphalt Binder.
7. AASHTO M324 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
8. AASHTO MP1a - Standard Specification for Performance-Graded Asphalt Binder.
9. AASHTO T283-14 – Standard Method of Test for Resistance of Compacted Asphalt Mixtures to Moisture-Induced Damage.
10. AASHTO T324 (Modified) -Hamburg Wheel-Track Testing of Compacted Hot Mix Asphalt (HMA).

B. Asphalt Institute:

1. AI MS-2 - Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types.
2. AI MS-19 - Basic Asphalt Emulsion Manual.

3. AI SP-2 - Superpave Mix Design.

- C. State Standard Specification:
1. Section 39 Asphalt Concrete.
 2. Section 92 Asphalt Binder.
 3. Section 94 Asphaltic Emulsions
 4. Section 96 Geosynthetics

1.3 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. Job Mix Formula (JMF): Except for the Hot Mix Asphalt (HMA) to be used in miscellaneous areas (median island areas not including inside shoulders, island areas, sidewalk, gutters, ditches, over side drains and aprons at end of drainage structures) and dikes, submit the proposed JMF for Type A HMA.
- C. The JMF must be submitted on the Contractor Job Mix Formula Proposal form along with:
1. Mix design documentation on Contractor's Hot Mix Asphalt Design data form dated with 12 months of submittal.
 2. Safety Data Sheets (SDS) for the following:
 - a. Asphalt Binder
 - b. Supplemental fine aggregate except fines from dust collectors
 - c. Antistrip additives.
- D. The Contractor's Hot Mix Asphalt Design Data form must show documentation on aggregate quality.
- E. Submit QC test results for Reclaimed Asphalt Pavement (RAP) gradation with the combined aggregate gradation within 2 business days of taking RAP samples during Type A HMA production.
- F. Contractor shall submit a new JMF if there are changes to any of the following:
1. Target asphalt binder percentage greater than ± 0.2 percent.
 2. Asphalt binder supplier
 3. Combined aggregate gradation
 4. Aggregate sources
 5. Liquid antistrip producer or dosage
 6. Average binder content in a new processed RAP stockpile by more than ± 2.0 percent from the average RAP binder content reported on Contractor Hot Mix Asphalt Design Data form.
 7. Average maximum specific gravity in a new processed RAP stockpile by more than ± 0.060 percent from the average maximum specific gravity value reported on Contractor's Hot Mix Asphalt Design Data form.
 8. Any material in the JMF.
- G. Submit a current asphalt concrete mix design from two separate sources (primary source and backup source) for asphalt concrete proposed to be used.
- H. Contractor shall provide delivery tickets to the City at the time of delivery of each

load of product, including asphalt concrete, tack coat, sealant, and paving reinforcement fabric. Each delivery ticket shall include or be accompanied by appropriate batch information produced by the batching plant or factory of origin and information stating the mix or model number, total yield in tons, gallons, or square feet, and time, date, and location of delivery.

- I. Any asphalt concrete rejected by the Project Manager shall be deducted from the total quantity of asphalt concrete tonnage.
- J. Reference Plan: Contractor shall have a walk through with the Project Manager for all installed underground boxes and/or iron elements, 10 days prior to any pavement repair. Contractor shall submit a reference plan (RP) to the Project Manager's review for utility facilities adjustment 3 working days prior to lowering any utility facilities.
- K. Contractor shall submit a paving plan for longitudinal joints.

1.4 QUALITY CONTROL PLAN

- A. The Contractor shall submit a Quality Control (QC) plan for HMA.
- B. The QC plan shall describe the organization and procedures for:
 - 1. Controlling HMA quality characteristics
 - 2. Taking samples, including sampling locations.
 - 3. Establishing, implementing, and maintaining QC
 - 4. Determining when corrective actions are needed.
 - 5. Implementing corrective actions.
 - 6. Using methods and materials for backfilling core locations.
- C. The QC plan must address the elements affecting HMA Quality, including
 - 1. Aggregates
 - 2. Asphalt binder
 - 3. Additives
 - 4. Productions
 - 5. Paving
- D. For CIP projects, the Contractor shall permit the City's certified testing laboratory to take samples of the aggregate and asphalt emulsion used in the project at the City's discretion. Gradation and sand equivalent tests may be run on the aggregate and residual asphalt tests on the emulsion. City will compare the test results with this Section and notify the Contractor if any test fails to meet specifications.
- E. The Contractor shall furnish all tools and equipment and employ sufficient trained personnel to operate all equipment and perform all handwork efficiently and skillfully.

1.5 AGGREGATES TESTING:

ASPHALT PAVING

- A. Contractor shall test the quality of aggregates under the test methods and frequencies shown in the following table and provide results to the City:

Aggregate Testing Frequencies

Quality Characteristic	Test Method	Minimum Testing Frequency
Gradation ^a	AASHTO T 27	1 per 750 tons and any remaining part
Sand Equivalent ^{b,c}	AASHTO T 176	
Moisture Content ^d	AASHTO T 255	
Crushed particles	AASHTO T335	1 per 10,000 tons or 2 per project whichever is greater
Los Angeles Rattler	AASHTO T96	
Flat and Elongated particles	AASHTO D4791	
Fine Aggregate angularity	AASHTO T 304 Method A	

^aIf RAP is used, test the combined aggregate gradation under California Test 384.

^bReported Value must be average of 3 tests from a single sample

^cUse of a sand reading indicator is required as shown in AASHTO T 176, Figure 1. Sections 4.7, “Manual Shaker,” 7.1.2, “Alternate Method No.2,” and 8.4.3, “Hand Method”, do not apply. Prepare the stock solution as specified in Section 4.8.1, “Stock solution with formaldehyde”, except omit the addition of formaldehyde.

^dTest at continuous mixing plants only. If RAP is used, test the RAP moisture content at continuous mixing plant and batch mixing plant.

1.6 AMBIENT CONDITIONS

- A. [Section 01 50 00 - Temporary Facilities and Controls](#): Ambient conditions control facilities for product storage and installation.
- B. Do not place HMA on wet pavement or frozen surface.
- C. Maximum lift thickness for asphalt paving shall be 4-inches unless shown otherwise on the Drawings.
- D. Spread Type A HMA at the ambient air and surface temperatures shown in the following table unless shown otherwise on the Drawings:

Lift Thickness (Feet)	Ambient air (°F)		Surface (°F)	
	Unmodified asphalt binder	Modified asphalt binder	Unmodified asphalt binder	Modified asphalt binder
< 0.15	55	50	60	55
≥ 0.15	45	45	50	50

PART 2 - PRODUCTS

2.1 ASPHALT PAVING

- A. Asphalt Concrete shall conform to Section 39, “Asphalt Concrete”, of the State Standard Specifications and the City Standard Specifications.
- B. Asphalt Concrete for surfacing shall be Hot Mix Asphalt (HMA) Type A.
- C. Asphalt Materials:
 - 1. Asphalt Binder: Asphalt Binder must comply with Section 92, “Asphalt Binders” of the State Standard Specifications.
 - a. For a leveling course, the grade of the asphalt binder for the Hot mix asphalt (HMA) must be PG 64-10 or PG 64-16.
 - b. For Miscellaneous areas, and asphalt dikes the grade of the asphalt binder for the Hot mix asphalt (HMA) must be PG 70-10. Minimum asphalt binder content must be 6.40 percent for 3/8” maximum size aggregate.
 - 2. Tack Coat: Diluted cationic emulsified asphalt per Section 94, “Asphaltic Emulsions”, of the State Standard Specification. Asphaltic emulsion shall be Grade CSS1h setting type.
 - 3. Reclaimed Asphalt Pavement (RAP): Processed material obtained by milling or full depth removal of existing asphalt paving.
- D. Reclaimed Asphalt Pavement (RAP) aggregate may be substituted for a part of virgin aggregate in a quantity not to exceed fifteen percent (15%) by weight of the aggregate blend.
 - 1. RAP shall conform to Section 39-2.02A(3)(c), “Reclaimed Asphalt Pavement”, of the State Standard Specifications.
 - 2. During Type A HMA production, sample RAP twice daily and perform QC testing for:
 - a. Aggregate gradation at least once a day under California Test 384.
 - b. Moisture content at least twice a day.
 - 3. If RAP is used, RAP quality requirements must be as shown in the following table.

Reclaimed Asphalt Pavement Quality

Quality Characteristic	Test method	Requirement
Binder Content (% within the average value reported)	AASHTO T 164	± 2.00
Specific Gravity (within the average value reported)	AASHTO T 209	± 0.06

- E. Aggregate Materials:
 - 1. Coarse Aggregate: ASTM D692; Aggregate retained on a no. 4 sieve. crushed stone or gravel.
 - 2. Fine Aggregate: ASTM D1073, AASHTO M29; Aggregate passing a no. 4

sieve. Natural sand or sand manufactured from stone or gravel.

3. Mineral Filler: finely ground mineral particles, free of foreign matter consisting of rock dust, slag dust, hydrated lime, hydraulic cement, or any combination of these and complying with AASHTO M17. Mineral fillers shall only be used if needed to improve the workability of the mix or gradation of the aggregate.
4. The aggregate gradation for Type A HMA must comply with the requirements shown in the following table unless specified otherwise on the Drawings:

Aggregate Gradation Requirements

Type A HMA pavement thickness shown	Gradation
Greater than 0.10 to less than 0.20 foot	1/2 inch
0.20 to less than 0.25 foot	3/4 inch
0.25 foot or greater	3/4 inch

5. The top 0.20-foot layer of asphalt pavement on the roadway shall have an aggregate gradation of 1/2" inch maximum.
6. Aggregate gradation must be within the Target Value (TV) limits for the specified sieve size shown in the following tables:

Aggregate Gradation for Type A HMA (percentage passing)

1 inch

Sieve Size	Target value limit	Allowable tolerance
1"	100	-
3/4"	88-93	TV ± 5
1/2"	72-85	TV ± 6
3/8"	55-70	TV ± 6
No. 4	35-52	TV ± 7
No. 8	22-40	TV ± 5
No. 30	8-24	TV ± 4
No. 50	5-18	TV ± 4
No. 200	3-7	TV ± 2.0

3/4 inch

Sieve Size	Target value limit	Allowable tolerance
1"	100	-
3/4"	90-98	TV ± 5
1/2"	70-90	TV ± 6
No. 4	42-58	TV ± 5
No. 8	29-43	TV ± 5
No. 30	10-23	TV ± 4
No. 200	2-7	TV ± 2.0

1/2 inch

Sieve Size	Target value limit	Allowable tolerance
3/4"	100	-
1/2"	95-98	TV ± 5

3/8"	72-95	TV ± 5
No. 4	52-69	TV ± 5
No. 8	35-55	TV ± 5
No. 30	15-30	TV ± 4
No. 200	2-8	TV ± 2.0

3/8 inch

Sieve Size	Target value limit	Allowable tolerance
3/4"	100	-
1/2"	95-98	TV ± 5
3/8"	72-95	TV ± 5
No. 4	52-69	TV ± 5
No. 8	35-55	TV ± 5
No. 30	15-30	TV ± 4
No. 200	2-8	TV ± 2.0

7. Before the additional of asphalt binder, the aggregates must comply with the quality requirements shown in the following table:

Quality characteristics	Test Method	Requirement
Aggregate Gradation ^a	AASHTO T27	JMF ± Tolerance
Percent of crushed particles Coarse aggregate (min, %) One-fractured face	AASHTO T 335	95
Two-fractured face		90
Fine aggregate (min, %) Passing No. 4 sieve and retained on No. 8 sieve.) One-fractured face		70
Los Angeles Rattler (max, %) Loss at 100 Rev.	AASHTO T96	12
Loss at 500 Rev.		40
Sand equivalent (min.) ^{b, c}	AASHTO T176	47
Flat and elongated particles (max, % by weight at 5:1)	ASTM D4791	10
Fine aggregate angularity (min, %) ^d	AASHTO T304, Method A	45
<p>^aThe Project Manager determines combined aggregate gradations containing RAP under California Test 384.</p> <p>^bReported value must be the average of 3 tests from a single sample.</p> <p>^cUse of a sand reading indicator is required as shown in AASHTO T176, Figure 1. Section 4.7, "Manual Shaker", 7.1.2, "Alternate Method No.2." and 8.4.3, "Hand Method," do not apply. Prepare the stock solution as specified in section 4.8.1, "Stock solution with formaldehyde," except omit the addition of formaldehyde.</p> <p>^dThe Project Manager waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.</p>		

2.2 TYPE A HMA PRODUCTION

- A. Contractor shall test the quality characteristics of Type A HMA under the test methods and frequencies shown in the following table and provide results to the City:

Type A HMA Production Testing Frequencies

Quality Characteristic	Test method	Minimum testing frequency
Asphalt Binder	AASHT T 308, Method A	1 per 750 tons and any remaining part
HMA Moisture Content	AASHTO T 329	1 per 2,500 tons but not less than 1 per paving day
Air Void Content	AASHTO T 269	1 per 4,000 tons or 2 every 5 paving days whichever is greater
Voids in mineral aggregate	SP-2 Asphalt Mixture Volumetrics	1 per 10,000 tons or 2 per project whichever is greater
Dust proportion	SP-2 Asphalt Mixture Volumetrics	
Density of core	California Test 375	2 per paving day
Nuclear gauge density	California Test 375	3 per 250 tons or 3 per paving day, whichever is greater
Hamburg wheel track	AASHTO T 324 (Modified)	1 per 10,000 tons or 1 per project whichever is greater.
Moisture susceptibility	AASHTO T 283	

2.3 TYPE A HMA ACCEPTANCE

- A. In place Type A HMA quality requirements shall be as shown in the following table:

Type A HMA Acceptance In Place

Quality Characteristic	Test method	Requirement
Asphalt Binder content (%)	AASHTO T 308 Method A	JMF – 0.3, +0.50
HMA moisture content (max, %)	AASHTO T 329	1.00
Voids in mineral aggregate on laboratory-produced HMA (min, %) ^d Gradation: No. 4 3/8-inch 1/2-inch	SP-2 Asphaltic Mixture Volumetrics	16.5-19.5 15.5-18.5 14.5-17.5

3/4-inch 1-inch with NMA = 1-inch with NMA = 3/4-inch		13.5-16.5 13.5-16.5 14.5-17.5
Voids in mineral aggregate on plant-produced HMA (min, %) ^a Gradation: No. 4 3/8-inch 1/2-inch 3/4-inch 1-inch with NMA = 1-inch with NMA = 3/4-inch	SP-2 Asphaltic Mixture Volumetrics ^c	15.5-18.5 14.5-17.5 13.5-16.5 12.5-15.5 12.5-15.5 13.5-16.5
Dust proportion	SP-2 Asphaltic Mixture Volumetrics	0.6-1.3 ^g
Density of core (% of max theoretical density) ^{e,f}	California Test 375	91.0-97.0
Hamburg wheel track (min number of passes at 0.5-inch rut depth) Binder grade: PG 58 PG 64 PG 70 PG 76 or higher	AASHTO T 324 (Modified)	10,000 15,000 20,000 25,000
Hamburg wheel track (min number of passes at inflection point) Binder grade: PG 58 PG 64 PG 70 PG 76 or higher	AASHTO T 324 (Modified)	10,000 10,000 12,500 15,000
Moisture susceptibility (min, psi, dry strength)	AASHTO T 283	100
Moisture susceptibility (min, psi, wet strength)	AASHTO T 283	70
^a Prepare 3 briquettes. Report the average of 3 tests, ^b For CIP projects, the City's Testing Laboratory determines the bulk specific gravity of each lab-compacted briquette under AASHTO T 275, Method A, and theoretical maximum specific gravity under AASHTO T 209, Method A. ^c Determine the bulk specific gravity under AASHTO T 275, Method A. ^d For CIP projects, the City's Testing Laboratory determines the laboratory-prepared Type A HMA value for only mix design verification.		

^eFor CIP projects, the City's Testing Laboratory determines percent of theoretical maximum density under California Test 375 except for CIP Projects, City's Testing Laboratory uses:

1. AASHTO T 275 to determine in-place density of each density core.
2. AASHTO T 209, method A to determine theoretical maximum density instead of calculating test maximum density.

^fFor CIP projects, the City's Testing Laboratory determines theoretical maximum density under AASHTO T 209, Method A, at the frequency specified in California Test 375, part 5, section D.

^gFor lime-treated aggregates, the dust proportion requirement is 0.6-1.5

2.4 SOURCE QUALITY CONTROL

- A. [Section 01 45 00 - Quality Control](#): Testing, inspection and analysis requirements.
- B. Test samples in accordance with AI MS-2.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. [Section 01 70 00 - Execution](#): Requirements for installation examination.
- B. Verify utilities indicated under paving are installed with excavations and trenches backfilled and compacted.
- C. Verify compacted aggregate base is dry and ready to support paving and imposed loads as specified in the project Geotechnical Report or as directed by the Project Manager.
 1. Proof roll subbase with minimum two perpendicular passes to identify soft spots.
 2. Remove soft subbase and replace with compacted fill.
- D. Verify with a licensed land surveyor that the gradients and elevations of base are correct.
- E. Verify drainage grates and frames, and manhole frames are installed in correct position and elevation.

3.2 CONSTRUCTION

- A. Contractor may deposit HMA in a windrow and load it in the paver if:
 1. Paver is equipped with a hopper that automatically feeds the screed.
 2. Loading equipment can pick up the windrowed material and deposit it in the paver hopper without contaminating or damaging HMA and subgrade base material.
 3. Activities for depositing, pickup loading and paving are continuous.
 4. HMA temperature in the windrow does not fall below 260-degree F.

- B. HMA placed in a windrow on the roadway surface must not extend more than 250 feet in front of the loading equipment or material transfer vehicle.
- C. HMA handled, spread, or windrowed must not stain the finished surface of any improvement, including pavement.
- D. Do not use petroleum products such as kerosene or diesel fuel to release HMA from trucks, spreaders, or compactors.
- E. HMA must be free of:
 - 1. Segregation
 - 2. Coarse or fine aggregate pockets
 - 3. Hardened lumps
- F. Complete finish rolling activities before the pavement surface temperature is
 - 1. Below 150 degrees F for HMA with unmodified binder
 - 2. Below 140 degrees F for HMA with modified binder

3.3 SPREADING AND COMPACTING EQUIPMENT

- A. Paving equipment for spreading must be:
 - 1. Self-propelled
 - 2. Mechanical
 - 3. Equipped with a screed or strike-off assembly that can distribute HMA the full width of a traffic lane.
 - 4. Equipped with a full-width compacting device.
 - 5. Equipped with automatic screed controls and sensing devices that control the thickness, longitudinal grade, and transverse screed slope.
- B. Install and maintain grade and slope reference.
- C. The screed must be heated and produce a uniform HMA surface texture without tearing, shoving, or gouging.
- D. The paver must not leave marks such as ridges and indentations unless you can eliminate them by rolling.
- E. Rollers must be equipped with a system that prevents HMA from sticking to the wheels. You may use a parting agent that does not damage the HMA or impede the bonding of layers.
- F. In areas inaccessible to spreading and compacting equipment:
 - 1. Spread the HMA by any means to obtain the specified lines, grades and cross sections.
 - 2. Use a pneumatic tamper, plate compactor, or equivalent to achieve thorough compaction.

3.4 MATERIAL TRANSFER VEHICLE:

- A. The material transfer vehicle must have sufficient capacity to prevent stopping

the paver and must be capable of:

1. Either receiving HMA directly from trucks or using a windrow pickup head to load it from a windrow deposited on the roadway surface.
2. Remixing the HMA with augers before transferring into the paver's receiving hopper or feed system.
3. Transferring HMA directly into the paver's receiving hopper or feed system.

3.5 METHOD COMPACTION EQUIPMENT:

A. For method compaction, each paver spreading HMA must be followed by 3 rollers:

1. One vibratory roller specified designed to compact HMA. The roller must be capable of at least 2,500 vibrations per minute and must be equipped with amplitude and frequency controls. The roller's gross static weight must be at least 7.5 tons.
2. One oscillating-type pneumatic-tired roller at least 4 feet wide. Pneumatic tires must be of equal size, diameter, type, and ply. The tires must be inflated to 60 psi minimum and maintained so that the air pressure does not vary more than 5 psi.
3. One steel-tired, 2-axle tandem roller. The roller's gross static weight must be at least 7.5 tons.

3.6 SURAFCE PREPARATION:

- A. Before placing HMA, remove loose paving particles, dirt, and other extraneous material by any means including flushing and sweeping.
- B. Prepare subgrade to receive HMA under the sections for the material involved. Subgrade must be free of loose and extraneous material.

3.7 TACK COAT:

- A. Apply tack coat in accordance with Section 39-2.01C(3)(f) of the State Standard Specifications.
- B. Apply tack coat:
 1. To existing pavement including planed surfaces.
 2. Between HMA layers
 3. To vertical surfaces of:
 - a. Curbs
 - b. Gutters
 - c. Construction joints.
- C. Coat surfaces of manholes and catch basins.
- D. Equipment for the application of tack coat must comply with Section 37-1.03B, "Equipment" of the State Standard Specifications.

- E. Before placing HMA, apply tack coat in one (1) application at the minimum residual rate shown in the following table for the condition of the underlying surface:

Tack Coat Application Rates for HMA

HMA Over:	Minimum residual rates (gal/sq. yd) CSS1/CSS1h asphaltic emulsion
New HMA (between layers)	0.02
Concrete Pavement and existing asphalt concrete surfacing	0.03
Planed pavement	0.05

- F. If a stress absorbing membrane interlayer as specified in Section 37-2.05, "Stress Absorbing Membrane Interlayers", of the State Standard Specification is applied, the tack application rates for new HMA apply.
- G. Notify the Project Manager if you dilute asphaltic emulsion with water. The weight ratio of added water to asphaltic emulsion must not exceed 1 to 1.
- H. Apply tack coat to vertical surfaces with a residual rate that will thoroughly coat the vertical face without running off.
- I. Immediately in advance of placing HMA, apply additional tack coat to damaged areas or where loose or extraneous material is removed.
- J. Close areas to traffic receiving tack coat. Do not allow the tracking of tack coat onto pavement surfaces beyond the job site.
- K. If an asphalt binder is used for tack coat, the asphalt binder temperature must be from 285 to 350-degree F when applied.

3.8 LONGITUDINAL JOINTS

- A. Longitudinal joints in the top layer must match lane lines. Alternate the longitudinal joint offsets in the lower layers at least 0.5 foot from each side of the lane line.
- B. A vertical longitudinal joint of more than 0.15 foot is not allowed at any time between adjacent open lanes to traffic.
- C. For an HMA thickness of 0.15 foot or less, the distance between the ends of the adjacent surfaced lanes at the end of each day's work must not be greater than can be completed in the following day of normal paving.
- D. For an HMA thickness greater than 0.15 foot, you must place HMA on adjacent travel way lanes or shoulder such that at the end of each work shift the distance between the ends of HMA layers on adjacent lanes is from 5 to 10 feet. Place additional HMA along the transverse edge at each lane's end and along the exposed longitudinal edges between adjacent lanes. Hand rake and compact the additional HMA to form temporary conforms. Place Kraft paper or other

authorized release agent under the conform tapers to facilitate the taper removal when paving activities resume.

- E. If placing HMA against the edge of existing pavement, saw cut or grind the pavement straight and vertical the joint to the full depth and remove extraneous material.

3.9 MISCELLANEOUS AREAS AND DIKES

- A. Asphalt concrete for dikes shall be Type A, 3/8" maximum size aggregate.
- B. Prepare the areas to receive HMA for miscellaneous areas and dikes, including excavation, placing tack coat, and backfill as needed.
- C. Spread the HMA in miscellaneous areas in 1 layer and compact to the specified lines and grades.
- D. The finished surface must be:
 - 1. Textured uniformly
 - 2. Compacted firmly
 - 3. Without depressions, humps, and irregularities.

3.10 COMPACTION

- A. Rolling must leave the completed surface compacted and smooth without tearing, cracking, or shoving.
- B. If a vibratory roller is used as a finish roller, turn the vibrator off.
- C. If the surface to be paved is both in sunlight and shade, pavement surface temperatures are taken in the shade.
- D. Relative compaction will be determined by California Test 375.

3.11 PAVEMENT CRACK SEALING

- A. See [Section 32 12 17 – Asphalt Paving Rehabilitation](#) for Pavement Crack Sealing Specifications.

3.12 ASPHALT PAVING TOLERANCES

- A. [Section 01 45 00 - Quality Control](#): Tolerances.
- B. Flatness: Maximum variation of 1/8 inch measured with 10-foot straight edge.
- C. Scheduled Compacted Thickness: Within 1/4 inch.

3.13 FIELD QUALITY CONTROL

- A. [Section 01 45 00 – Quality Control](#): Requirements for testing, adjusting, and balancing.
- B. Asphalt Paving Mix Temperature: Measure temperature at time of placement.

3.14 PROTECTION

- A. [Section 01 77 00 - Closeout Requirements](#): Requirements for protecting finished Work.
- B. Immediately after placement, protect paving from mechanical injury for until surface temperature is less than 140 degrees F.

END OF SECTION 32 12 16

SECTION 32 13 13 - CONCRETE SURFACE IMPROVEMENTS**PART 1 - GENERAL**

1.1 SUMMARY

A. Section Includes:

1. Aggregate base course.
2. Concrete Surface Improvements for:
 - a. Concrete sidewalks
 - b. Concrete driveways
 - c. Concrete curb ramps
 - d. Concrete curbs and gutters
 - e. Concrete retaining curbs
 - f. Concrete median curbs
 - g. Concrete median nose surfacing
 - h. Concrete valley gutters
 - i. Concrete bus turnouts
 - j. Concrete survey monuments
 - k. Concrete ditches
3. Forms for Concrete
4. Concrete reinforcement (reinforcing bars, welded wire fabric and accessories).
5. Portland Cement Concrete placement
6. Concrete Joints - Expansion, Weakened plane and Score joints
7. Curing compounds

B. Related Requirements:

1. [Section 09 90 00 - Painting and Coating](#): Pavement markings.
2. [Section 31 05 13 - Clearing & Grubbing, Excavation, and Earthwork](#)
3. [Section 32 11 23 - Aggregate Base Courses](#)
4. [Section 32 12 16 - Asphalt Paving](#)
5. [Section 33 05 13 - Manholes and Structures](#)

1.2 REFERENCE STANDARDS

A. State of California (Caltrans) Standards:

- | | | |
|----|------------|---------------------|
| 1. | Section 19 | Earthwork |
| 2. | Section 26 | Aggregate Base |
| 3. | Section 51 | Concrete Structures |
| 4. | Section 52 | Reinforcement |

5. Section 73 Concrete Curbs and Sidewalks
6. Section 90 Concrete

B. American Association of State Highway and Transportation Officials:

1. AASHTO M295 - Standard Specification for Coal Fly Ash or Calcined Natural Pozzolan for Use in Concrete.
2. AASHTO M302 – Standard Specification for Ground Blast-Furnace Slag for Use in Concrete and Mortars
3. AASHTO T160 - Standard Method of Test for Length Change of Hardened Hydraulic Cement Mortar and Concrete

C. American Concrete Institute:

1. ACI 117 - Specifications for Tolerances for Concrete Construction and Materials.
2. ACI 301 - Specification for Structural Concrete
3. ACI 304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete.
4. ACI 308.1 - Specification for Curing Concrete.
5. ACI 347 – Guide to Formwork for Concrete

D. American Forest & Paper Association:

1. AF&PA - National Design Specification (NDS) for Wood Construction.

E. APA - The Engineered Wood Association:

1. APA/EWA PS 1 - Voluntary Product Standard - Structural Plywood.

F. ASTM International:

1. ASTM A185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
2. ASTM A497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.
3. ASTM A615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
4. ASTM A775 - Standard Specification for Epoxy-Coated Steel Reinforcing Bars.
5. ASTM A1064 - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
6. ASTM C31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
7. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
8. ASTM C94 - Standard Specification for Ready-Mixed Concrete.
9. ASTM C143 - Standard Test Method for Slump of Hydraulic Cement Concrete.
10. ASTM C150 - Standard Specification for Portland Cement.

11. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete.
12. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
13. ASTM C173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
14. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
15. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
16. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
17. ASTM C494 - Standard Specification for Chemical Admixtures for Concrete.
18. ASTM C595 - Standard Specification for Blended Hydraulic Cements.

19. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
20. ASTM C979 - Standard Specification for Pigments for Integrally Colored Concrete.
21. ASTM C989 - Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
22. ASTM C1017 - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
23. ASTM C1064 - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
24. ASTM D209 - Standard Specification for Lampblack Pigment
25. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).

G. Concrete Reinforcing Steel Institute:

1. CRSI 10-MSP – Manual of Standard Practice
2. CRSI 10PLACE – Placing Reinforcing Bars

H. West Coast Lumber Inspection Bureau:

1. WCLIB - Standard No. 17 Grading Rules for West Coast Lumber.

1.3 SUBMITTALS

A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.

B. Product Data:

1. Submit data on concrete materials, joint filler, joint sealants, admixtures, curing compounds.
2. Submit certified copies of mill test report of reinforcement materials analysis. Indicate bending and cutting schedules and supporting and spacing devices.

3. Submit manufacturer's information on curing compounds. Submit detailed instructions on installation requirements, including storage and handling procedures.
4. Shop drawings indicate formwork, shoring and reshoring.

C. Design Data:

1. Submit concrete mix design for each concrete strength. Submit separate mix designs when admixtures are required for the following:
 - a. Hot and cold weather concrete work.
2. Identify mix ingredients and proportions, including admixtures.
3. Chloride can contribute to corrosion of metals embedded in concrete. Admixture manufacturers shall identify chloride content of admixtures and whether or not chloride was added during manufacture.

D. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Provide additional protection according to manufacturer instructions.

E. Source Quality Control Submittals: Indicate results of factory tests and inspections.

F. Certifications:

1. At the time of delivery provide certificates of compliance signed by both the Contractor and Supplier to verify the following:
 - a. Materials supplied comply with the specification in all respects.
 - b. Proportioning and mixing is in compliance with a design mix which has been field tested in accordance with the herein requirements and produces the required compressive strength under like conditions.
 - c. Statement of type and amount of admixtures.
 - d. All Certificates shall include the Material and Supplier's mix design number.
 - e. Volume of concrete. At the time of delivery provide certified delivery ticket stating volume of concrete delivered and time of mixing, or time of load-out in case of transit mixers.

1.4 QUALITY ASSURANCE

- A. Perform Work according to ACI 301.

- B. Obtain cementitious materials from same source throughout unless approved by the City.
- C. Concrete finish shall be consistent with adjacent concrete unless specified otherwise on the Drawings.
- D. For wood products furnished for Work of this Section, comply with AF&PA.

1.5 MOCKUP

- A. [Section 01 45 00 - Quality Control](#): Requirements for mockup.
- B. Construct mockup, 5 feet x 5 feet, including paving, expansion joints, weakened plane joints, score joints, surface texture, and base material for decorative colored concrete work.
- C. Locate where directed by the Project Manager.
- D. Remove mockup when directed by Project Manager.

1.6 AMBIENT CONDITIONS

- A. [Section 01 50 00 - Temporary Facilities and Controls](#): Ambient conditions control facilities for product storage and installation.
- B. Do not place concrete when surface is wet or frozen.
- C. Do not place concrete when base surface temperature is less than 45 degrees F, nor when conditions indicate that the temperature may fall less than 45 degrees F. within 24 hours, except with the written permission of the City Engineer. Salt chemicals, or other foreign materials shall not be mixed with the concrete for the purpose of preventing freezing. Concrete shall be effectively protected from freezing or frost for period of 5 days after placing.
- D. Concrete for structures shall not be mixed or placed while the ambient temperature is above 110 degrees F. unless adequate means are employed to cool the aggregate and water and satisfactory provisions have been made for protecting the work.

PART 2 - PRODUCTS

2.1 AGGREGATE BASE COURSE

- A. Aggregate Base: 3/4" maximum - Class 2 Aggregate Base as specified in Section 32 11 23 - Aggregate Base Courses.

2.2 CONCRETE SURFACE IMPROVEMENTS

A. Form Materials:

1. Form Materials: Conform to ACI 301 and shall be new.
2. Plywood:
 - a. Species: Douglas fir.
 - b. Grade: Solid one side
 - c. Edges: Clean and true.
3. Plywood Forms:
 - a. Application: Exposed finish concrete.
 - b. Description:
 - 1) Comply with APA/EWA PS 1.
 - 2) Panels: Full size, 4 by 8 feet.
 - 3) Label each panel with grade trademark of APA/EWA.
 - c. Plywood for Surfaces to Receive Membrane Waterproofing:
 - 1) Minimum Thickness: 5/8 inch.
 - 2) Grade: APA/EWA "B-B Plyform Structural I Exterior."
4. Formwork shall be designed for the loads and lateral pressure outlined in Section 102 of ACI 347 and other loads indicated and shall be designed to have sufficient strength to carry the dead weight of the concrete as a liquid, without appreciable deflection. If any such deflection occurs, it shall be sufficient cause for rejection of the work.
5. Where necessary to maintain the tolerances indicated, the formwork shall be cambered to compensate for anticipated deflections due to the weight and pressure of the fresh concrete and due to construction loads.
6. Forms shall be smooth, mortar-tight, true to the required lines and grades and of sufficient strength to resist springing out of shape during the placing of concrete.
7. Surfaces of forms shall be free from irregularities, dents, snags, rust, and other material which would discolor or transfer to the concrete.

B. Reinforcement:

1. Deformed Reinforcing: Steel: ASTM A615, 60 ksi yield grade, deformed billet bars, uncoated finish.
2. Welded Deformed Wire Fabric: ASTM A497; in [flat sheets] [coiled rolls]; [unfinished] [epoxy coated finish].
3. Dowels: ASTM A615; 60 ksi yield strength, plain steel bars; cut to length indicated on Drawings, square ends with burrs removed; unfinished. One end of the dowel shall include a sleeve over the dowel.
4. Tie Wire: ASTM A1064, Minimum 16 gage, black annealed type.
5. Chairs, Bolsters, Bar Supports, and Spacers:
 - a. Size and Shape: To strengthen and support reinforcement during concrete placement conditions.
6. Splicing: Splice reinforcing where indicated on Drawings. The length of lapped splices shall be as follows:

- a. Reinforcing bars No. 8, or smaller, shall be lapped at least 45 bar diameters of the smaller bar joined, except when otherwise shown on the Drawings.
 - b. Reinforcing bars No. 9, 10 and 11 shall be lapped at least 60 bar diameters of the smaller bars joined, except when otherwise shown on the Drawings.
 - c. If not indicated on Drawings, locate reinforcement splices at point of minimum stress. Obtain approval of splice locations from the City.
7. Reinforcing bars shall be free of mortar, oil, dirt, excessive mill scale and scabby rust and other coatings of any character that would destroy or reduce the bond. All bending shall be done cold, to the shapes shown on the Drawings.
 8. Place, support, and secure reinforcement against displacement by using precast mortar blocks or ferrous metal chairs, spacers, metal hangers, supporting wires, and other approved devices of sufficient strength to resist crushing under applied loads. Supports and ties shall be such as to permit walking on reinforcing without undue displacement.
 9. Do not deviate from required position beyond specified tolerances.
 10. Accommodate placement of formed openings.
 11. Spacings:
 - a. Space reinforcement bars with minimum clear spacing as shown on the Drawings.
 - b. If bars are indicated in multiple layers, place upper bars directly above the lower bars, unless specified otherwise on the Drawings.
 12. Maintain minimum concrete cover around reinforcement according to ACI 318 code and as follows:
 - a. Footings and Concrete formed against earth: 3 inches
 - b. Concrete Exposed to Earth or Weather: 2 inches
 13. Splice reinforcing where indicated on Drawings. The length of lapped splices shall be as follows:
 - a. A. Reinforcing bars No. 8, or smaller, shall be lapped at least 45 bar diameters of the smaller bar joined, except when otherwise shown on the Drawings.
 - b. Reinforcing bars No. 9, 10 and 11 shall be lapped at least 60 bar diameters of the smaller bars joined, except when otherwise shown on the Drawings.
 14. All reinforcing shall be securely tied in place prior to pouring concrete.
 15. Placing of dowels or other reinforcing in the wet concrete is not permitted.
- C. Joint Filler: ASTM D1751; Premolded expansion joint filler 1/4-inch thick.
- D. Joint seal materials must be either silicone joint sealant, asphalt rubber joint sealant, or preformed compression joint seal. Silicone or asphalt rubber joint sealant must not bond or react with the backer rod.
- a. Silicone Joint Sealant. Silicone joint sealant must be on the Authorized Material List for silicone joint sealant.
 - b. Asphalt Rubber Joint Sealant. Asphalt rubber joint sealant must:
 - 1) Be asphalt binder mixed with not less than 10 percent ground rubber by weight. Ground rubber must be vulcanized or a

combination of vulcanized and devulcanized materials that pass a no. 8 sieve.

- 2) Comply with ASTM D6690 for Type II.
- 3) Be capable of melting at a temperature below 400 degrees F and applied to cracks and joints.
- 4) Be delivered in containers complying with ASTM D6690.

E. Concrete Materials:

1. Cement: Cement shall conform to Section 90, "Concrete" of the State Standard Specifications.
2. Fine and Coarse Aggregates: Conform to the requirements of Section 90-1.02C, "Aggregates" of the State Standard Specifications. Size of aggregate for Portland cement concrete mix to be used for Survey monuments shall be 1/2-inch maximum.
3. Water: Conform to Section 90-1.02D, "Water" of the State Standard Specifications.
4. Air Entrainment: Air Entrainment admixtures shall meet the requirements of Section 90-1.02E(3), "Air-Entraining Admixtures" of the State Standard Specifications.
5. Chemical Admixture: Chemical admixtures shall meet the requirements of Section 90-1.02E(2), "Chemical admixtures" of the State Standard Specifications.
6. Supplementary Cementitious Materials - Fly Ash: Conform to the requirements of Section 90-1.02B(3), "Supplementary Cementitious Materials" of the State Standard Specifications.
7. Supplementary Cementitious Materials - Slag: Conform to the requirements of Section 90-1.02B(3), "Supplementary Cementitious Materials" of the State Standard Specifications.
8. Color Pigment: ASTM C979; mineral oxides, alkali and fade resistant. The dosage must not exceed 10 percent by weight of cementitious material in the concrete mix design.
 - a. Lampblack: Conform to ASTM D209, and shall be of approved quality mixed at a rate of one pound per cubic yard of concrete.
 - b. Color: No added color unless specified otherwise on the Drawings, except lampblack.

2.3 CONCRETE MIX

A. Concrete Mix:

1. Concrete shall conform to Section 90, "Concrete", of the State Standard

Specifications.

2. The concrete shall contain not less than 564 pounds of cementitious material per cubic yard.
3. Maximum slump for concrete is 4”.
4. Provide concrete to the following criteria:

Item	Min. 28-day Compressive Strength (psi)
Sidewalks	4,000
Driveways	4,000
Curb Ramps	4,000
Curb and Gutters	4,000
Median Curbs	4,000
Median Nose Surfacing	4,000
Concrete Ditches	4,000
Valley Gutters	5,000
Bus Turnouts	5,000
Survey Monuments	5,000

2.4 CONCRETE CURING COMPOUND

- A. Curing Compound: ASTM C309, Type 1D, Class A and shall conform to Section 90-1.03B (3) “Curing Compound Method”, of the State Standard Specifications.

2.5 SOURCE QUALITY CONTROL

- A. [Section 01 45 00 - Quality Control](#): Testing and Inspection Services.
- B. Submit proposed mix design of each class of concrete to City for review prior to commencement of Work.

- C. Concrete Slump shall conform to Section 90-1.02G (6) “Quantity of Water and Penetration or Slump”, of the State Standard Specifications
- D. Tests on cement, aggregates, and mixes will be performed to ensure conformance with specified requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. [Section 01 70 00 - Execution](#) and [Section 01 77 00 - Closeout Requirements](#): Requirements for installation examination.
- B. Verify compacted subgrade and base is dry and ready to support paving and imposed loads.
 - 1. Proof roll subgrade with two perpendicular passes to identify soft spots.
 - 2. Remove soft subgrade and replace with compacted fill as specified in [Section 31 05 13 – Clearing & Grubbing, Excavation, and Earthwork](#).
- C. Verify gradients and elevations of base are correct.

3.2 PREPARATION

- A. [Section 01 70 00 - Execution](#) and [Section 01 77 00 - Closeout Requirements](#): Requirements for installation preparation.
- B. Moisten subgrade to minimize absorption of water from fresh concrete.
- C. Notify City minimum 24 hours prior to commencement of concrete operations.

3.3 INSTALLATION

- A. Subgrade Preparation:
 - 1. Remove soft or spongy basement material to a depth of six (6) inches below the subgrade elevations for sidewalks, driveways, curb ramps, curbs, gutter depressions, median nose island paving, valley gutters, bus turnouts, and other miscellaneous concrete pads. Backfill the subgrade with earth, sand, gravel or suitable backfill materials to produce a stable foundation.
 - 2. The subgrade, including any base material, shall be thoroughly compacted by an approved mechanical device to not less than ninety-five percent (95%) relative compaction as determined by Test Method No. Calif. 216 or 231 before placing the concrete at bus turnouts, driveways and valley gutters.
 - 3. The subgrade, including any base material, shall be thoroughly compacted by an approved mechanical device to not less than ninety percent (90%) relative compaction as determined by Test Method No. Calif. 216 or 231 before placing the concrete at curb and gutters, sidewalk, median nose

B. Sawcutting Existing Concrete:

1. Where a portion of existing concrete surface improvements is to be removed and replaced, the section to be removed shall be sawcut with an approved concrete saw to a minimum depth of 2-1/2 inches. For sidewalks, curbs, gutters, concrete pads, curb ramps, and driveways the limit of the saw cut shall be at a minimum the first score line beyond the limits of the area to be replaced or as directed by the City.
2. The Contractor shall furnish and install a 6"-thick deep-lift asphalt concrete (Patch Pave) adjacent to concrete curb and gutter, valley gutter. The cost to install the 6"-thick deep-lift asphalt concrete (Patch Pave) shall be considered in the prices paid under "Install Asphalt Concrete", and no additional compensation will be allowed therefor.

C. Base Course:

1. Aggregate Base Course: Install as specified in [Section 32 11 23 - Aggregate Base Courses](#).

D. Forms:

1. No forms shall be placed prior to approval of the aggregate base and subgrade by the City.
2. Place and secure forms and screeds to correct location, dimension, profile, and gradient.
3. All dirt, chips, soil, dust, nails, and other foreign matter shall be completely removed from forms before any concrete is deposited therein.
4. Form boards having joints opened by shrinkage of the wood shall be swelled by wetting until closed, before concrete is placed.
5. The design and construction of forms and form supports shall be subject to approval, but responsibility for their adequacy shall rest with the Contractor.
6. Forms shall be carefully set to alignment and grade and shall conform to the required dimensions. Forms shall be held rigidly in place by stakes. Clamps, spreaders and braces shall be used where required to insure rigidity in the forms.
7. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
8. When grades are less than 0.4 percent, the Contractor shall set grade stakes at a minimum of 25 foot intervals.
9. Where shown on the Drawings, specified in the Technical Specifications or permitted by the City, side forms for footings may be omitted and concrete may be poured against the firm earth.

E. Coating:

1. Before concrete is placed, the contact surfaces for forms shall be coated with an approved non-staining form coating compound.
2. Forms previously used shall be thoroughly cleaned of all dirt, mortar, and foreign matter before being re-used.
3. When forms are coated to prevent bond with concrete, coating shall be done prior to placing of the reinforcing steel.
4. Excess coating material shall not be allowed to stand in puddles in the forms

nor allowed to come in contact with concrete against which fresh concrete will be placed

F. Reinforcement:

1. Place reinforcing as indicated on Drawings.
2. Interrupt reinforcing at weakened plane and expansion joints as shown on the Drawings.
3. Place dowels where required to achieve concrete paving and curb alignment as detailed.

G. Ties:

1. Approved form clamps or bolts shall be used to fasten forms.
2. The use of ties consisting of twisted wire loops to hold forms in position during the placing of concrete will not be permitted.
3. Bolts and form clamps shall be positive in action and shall be of sufficient strength and number to prevent spreading of the forms.
4. They shall be of such type that when the forms are removed all metal shall be at least one (1) inch from any surface.
5. Spreader cones and ties shall not exceed one (1) inch in diameter. These shall be of the type which do not have to be completely withdrawn as holes through the wall will not be permitted

H. Joints

1. Place weakened plane joints at D/4 (1" deep and 1/8" wide with rounded edges of 1/8" radius for a 4" thick concrete sidewalk) at maximum of 10 foot intervals, unless shown otherwise on the Drawings. Align curb, gutter, and sidewalk joints.
2. Place expansion joints (full depth of concrete section and 1/2" wide) at maximum of 40 foot intervals, at begin and end of curve, all changes in horizontal alignment, back of sidewalk at driveways, at corners of tree wells and corners of utility vaults, unless shown otherwise on the Drawings. Align curb, gutter, and sidewalk joints.
3. Place joint filler between concrete paving components and building or other appurtenances. Recess top of filler 1/4 inch for sealant installation.
4. Seal all expansion joints as shown on the Drawings.
5. The joint opening shall be thoroughly cleaned before the sealing material is placed.
6. Sealing material shall not be spilled on exposed surfaces of the concrete. Any excess material on exposed surfaces of the concrete shall be removed immediately and concrete surfaces cleaned.
7. Provide scored joints transversely (1/4" deep and 1/8" wide with rounded edges of 1/8" radius for a 4" thick concrete sidewalk) at maximum of 5 foot intervals, unless shown otherwise on the Drawings and between sidewalk and back of curbs at an optimum time after finishing. Provide additional score lines longitudinally at mid-point on sidewalks 8 feet and over in width.
8. Provide keyed joints as indicated.
9. For sidewalk replacement projects, match adjacent scoring and joint pattern.

I. Inspections prior to Placing Concrete:

1. All excavations, false-work, forms, reinforcement, joints made prior to pouring, electrical and mechanical inserts, etc., shall be inspected and approved before concrete is placed, and if found unsatisfactory the work shall not proceed until all defects have been remedied. Approval will in no way relieve the Contractor of his obligations to produce the finished concrete required by the Drawings and the Specifications

J. Placing Concrete:

1. Place concrete according to Section 73, "Concrete Curbs and Sidewalks" of the State Standard Specifications.
2. All concrete shall be placed while fresh and before it has taken an initial set.
3. Re-tempering partially hardened concrete with additional water or vibrating will not be permitted.
4. Runways or other means must be provided to convey the concrete to the place of deposit in order not to disturb forms or reinforcement. Runways shall not be blocked up on reinforcement and wheel barrows shall not be run directly over reinforcement.
5. Immediately before placing reinforcement or pouring concrete on the ground, the surface of the ground shall be brought to a true, even plane, and compacted to a solid bearing by rolling or tamping. The subgrade surface shall then be dampened to prevent absorption of water from the concrete. Too much water shall not be used and no pools shall form on the area to receive concrete.
6. Concrete shall be effectively protected from freezing or frost for period of 5 days after placing.
7. The concrete shall be deposited as nearly as possible in its final position and the use of vibrators for extensive shifting of the mass of fresh concrete will not be permitted.
8. Fresh concrete shall not be permitted to fall from a height greater than 4 feet without the use of adjustable pipes or "elephant trunks."
9. Concrete shall be placed with square ends and level tops. Concrete shall be deposited continuously or in layers of such thickness that no concrete will be deposited on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness within the section.
10. The Contractor shall stamp an appropriate two (2) inch symbol S, W or C in the top of curb at all locations where sanitary sewer, water or conduit crosses under curbs.
11. All exposed edges shall be tooled with a one-half inch (1/2") radius tool.
12. If a section cannot be placed continuously, keyed construction joints shall be located at points as indicated or as approved. Placing shall be carried out at such a rate that the concrete which is being integrated with fresh concrete is still plastic.
13. Concrete placement shall be stopped at construction joints before rainfall starts or is sufficient to cause damage to the work.
14. Poured work shall be covered and protected.
15. Concrete, after being deposited, shall be consolidated until all voids are filled and free mortar appears on the surface.
16. Consolidate the concrete by means of high frequency internal vibrators of type, size, and number as approved by the City. The number of vibrators employed shall be ample to consolidate the incoming concrete to a proper

degree within 15 minutes after it is deposited in forms. Vibrators shall not be attached to nor held against the forms or the reinforcing steel. The location, manner, and duration of the application of the vibrators shall be such as to secure maximum consolidation of the concrete without causing segregation of mortar and coarse aggregate and without causing water or cement paste to flush to the surface. The thickness of the layers shall be not greater than can be satisfactorily consolidated with the vibrators. The vibrators shall vertically penetrate a few inches into the previous lift (which should not be rigid) at regular intervals. The use of approved external vibrators for consolidating concrete will be permitted when the concrete is inaccessible for adequate consolidation, provided the forms are constructed sufficiently rigid to resist displacements and damage from external vibration.

17. The forms on the face of curbs shall not be removed while the concrete is sufficiently plastic to slump.

K. Finishing:

1. After the concrete has been placed and consolidated, the surface of the concrete shall receive a preliminary finish. The preliminary finish shall consist of carefully striking of the surface of the concrete with a template, strike board, or approved compacting type screed, operated on and between supports or headers, until a uniform surface is obtained.
2. Horizontal surfaces shall receive a broom finish unless otherwise shown on the Drawings. Make the broom finish perpendicular to the path of travel on surfaces used by Pedestrians.
3. Miscellaneous concrete footings shall be sloped to provide drainage away from the post/pipe.
4. Imperfect or Damaged Work: The Contractor shall repair and clean all concrete damaged or discolored during construction.
5. Finishing Unformed Surfaces: Following completion of the preliminary finish, a final finish of the type indicated shall be provided.

L. Curing and Protection

1. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
2. Curing concrete shall conform to Section 90-1.03B – “Curing Concrete”, of the State Standard Specifications.
3. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
4. Membrane-Curing Compound: Apply curing compound in two coats with second coat applied at right angles to first over the entire exposed faces of the concrete.
5. Do not permit traffic over unprotected surfaces.

3.4 TOLERANCES

- A. [Section 01 45 00 – Quality Control](#): Tolerances.
- B. Maximum Variation from True Position: 1/4 inch.

- C. The finished surface must not vary more than 0.02 foot from a 10-foot straightedge except at grade changes.

3.5 FIELD QUALITY CONTROL

- A. [Section 01 77 00 - Closeout Requirements](#): Requirements for testing, adjusting, and balancing.
- B. Perform field inspection and testing according to State Standard Specifications.
- C. Inspect reinforcing placement for size, spacing, location, support.
- D. For development projects, Developer's or Contractor's testing firm will take cylinders and perform slump and air entrainment tests according to ACI 301. For City projects, the City's testing team will perform testing.
- E. Clean any discolored concrete by abrasive blast cleaning or other authorized method.
- F. Strength Test Samples:
 - 1. Sampling Procedures: ASTM C172.
 - 2. Cylinder Molding and Curing Procedures: ASTM C31, cylinder specimens, standard cure/field cured.
 - 3. The frequency of sampling will be determined by the City.
 - 4. Sample concrete and make at a minimum of one set of three cylinders (each cylinder must be six (6) inches in diameter by 12 inches depth) for every 100 cubic yards less of each class of concrete placed each day and for every 5,000 square feet of surface area paving.
 - 5. Make one additional cylinder during cold weather concrete and placement, and field cure.
- G. Field Testing:
 - 1. Slump Test Method: ASTM C143.
 - 2. Air Content Test Method: ASTM C173 or ASTM C231.
 - 3. Temperature Test Method: ASTM C1064.
 - 4. Density: ASTM C138
 - 5. Measure slump and temperature for each compressive strength concrete sample.
 - 6. Measure air content in air entrained concrete for each compressive strength concrete sample.
- H. Cylinder Compressive Strength Testing:
 - 1. Test Method: ASTM C39.
 - 2. Test Acceptance: Average compressive strength of three consecutive compressive strength test shall be equal to or greater than minimum specified compressive strength specified in this Section. No single strength test should fall below the specified compressive strength by more than 500 psi.
 - 3. Test one cylinder at 7 days.
 - 4. Test two cylinders at 28 days.

5. Retain one cylinder for testing when requested by City.
 6. Dispose remaining cylinders when testing is not required.
- I. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.
 - J. The finished surface shall be true and straight, and shall be of uniform width, free from humps, sags, or other irregularities.
 - K. Where curb and gutter, valley gutter and bus turnout gutter grades are less than one percent (1%), the Contractor shall water test the gutters for low spots. Any depressions shall be corrected prior to asphalt concrete paving.

3.6 PROTECTION

- A. [Section 01 77 00 - Closeout Requirements](#): Requirements for protecting finished Work.
- B. Immediately after placement, protect paving from premature drying, excessive hot or cold temperatures, and mechanical injury.
- C. Do not permit pedestrian or vehicular traffic over paving for 7 days minimum after finishing until 75 percent design strength of concrete has been achieved, unless approved by the City.
- D. Vandalism: Contractor shall be responsible for protection of newly poured concrete against vandalism. Any damage to the newly poured concrete shall be the responsibility of the Contractor and shall be replaced at the Contractor's expense.

END OF SECTION 32 13 13

SECTION 32 17 00 - PAVEMENT DELINEATION**PART 1 - GENERAL**

1.1 SUMMARY

- A. Work under this section shall consist of all traffic striping, markings and all other directional information or pavement delineation on the surfaces of streets, detour roads, parking lots, median strips and curbing in accordance with the plans, Technical Specifications and as specified herein, in conformance with the applicable provisions of the Department of Transportation Standard Specifications, California Manual on Uniform Traffic Control Devices (CA MUTCD), and California Vehicle Code.
- B. Related Sections:
 - 1. [Section 01 33 00 – Submittal Procedures](#)
 - 2. [Section 01 60 00 - Product Requirements](#)
 - 3. [Section 01 77 00 - Closeout Requirements](#)
 - 4. [Section 01 78 00 - Closeout Submittals](#)

1.2 REFERENCES

- A. Department of Transportation (Caltrans Standard Specifications)
- B. California Manual on Uniform Traffic Control Devices (CA MUTCD)
- C. California Vehicle Code (CVC)

1.3 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Submittal procedures.
- B. Certificates of Compliance: Certificates of Compliance shall be provided for all products and materials proposed to be used under this Section.
- C. Product Data: Provide manufacturers specification and literature for materials furnished.

1.4 CLOSEOUT SUBMITTALS

- A. [Section 01 78 00 - Closeout Submittals](#): Requirements for submittals.

1.5 QUALITY ASSURANCE

- A. Perform work in accordance with the plans, Technical Specifications and as specified herein, in conformance with the applicable provisions of the Caltrans

1.6 QUALIFICATIONS

- A. Pavement markings installer shall have experience in the type of work required and a reputation for producing satisfactory work on time.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. [Section 01 60 00 - Product Requirements](#): Product transportation, storage, handling, and protection requirements.
- B. Accept materials on site in original factory packaging, labeled with manufacturer's identification.
- C. Protect from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original packaging.
- D. Do not deliver items to project before time of installation. Limit shipment of bulk and multiple-use materials to quantities needed for immediate installation.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. [Section 01 60 00 - Product Requirements](#): Environmental conditions affecting products on site.
- B. Install pavement markers only when ambient temperature and humidity conditions acceptable per manufacturer's specifications.
- C. Testing and removal of yellow traffic stripe and pavement markings with hazardous waste residue shall be in conformance with Department of Transportation Standard Specification 14-11.12, "Removal of Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue".

1.9 MAINTENANCE/EXTRA MATERIALS

- A. [Section 01 77 00 - Closeout Requirements](#): Extra materials and maintenance products.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Unless otherwise specified in the Technical Specifications or contract plans, all pavement striping and markings (except temporary) shall be thermoplastic.

2.2 THERMOPLASTIC

- A. Thermoplastic for traffic stripes and pavement markings shall conform to Section PAVEMENT DELINEATION

84-2, "Traffic Stripes and Pavement Markings", of the Caltrans Standard Specifications.

- B. The thermoplastic material shall conform to Caltrans Specification PTH-02SPRAY, PTH-02HYDRO or PTH-02ALKYD. Glass beads to be applied to the surface of the molten thermoplastic material shall conform to the requirements of Caltrans Standard Specification.
- C. Concrete surfaces shall be treated before thermoplastic stripes and markings are installed, per Section 84-2, "Traffic Stripes and Pavement Markings", of the Caltrans Standard Specification.

2.3 PAINT

- A. Paint for traffic stripes and pavements markings shall conform to Section 84-2, "Traffic Stripes and Pavement Markings", of the Caltrans Standard Specifications and the following:
 - 1. Waterborne Traffic Line (White, Yellow, Black): Caltrans Standard Specification PTWB-01
 - 2. Acetone-Based (White, Yellow, Black): Specification PT-150VOC(A)
 - 3. Waterborne Traffic Line for disabled persons' parking, and other curb markings (blue, red, green): Federal Specification No. TT-P-1952D
- B. Glass beads shall conform to Caltrans Standard Specification.

2.4 PAVEMENT MARKERS

- A. Pavement markers shall conform to Section 81-3, "Pavement Markers," of the Caltrans Standard Specifications, as specified herein, and in the Technical Specifications.
- B. Fire Hydrant markers shall be two-way, reflective blue markers.

2.5 TEMPORARY PAVEMENT DELINEATION

- A. Temporary Pavement Delineation shall conform to Section 12-6, "Temporary Pavement Delineation," and Section 84-2, "Traffic Stripes and Pavement Markings", of the Caltrans Standard Specifications.

2.6 ADHESIVE

- A. Adhesive for Pavement Markers shall be the hot melt bituminous type conforming to Section 81-3, "Pavement Markers," of the Caltrans Standard Specifications.

PART 3 - EXECUTION

3.1 LAYOUT, ALIGNMENT, AND SPOTTINGS

- A. All layout, spotting and tracking required shall be performed by and at the expense of the Contractor and approved by the City, prior to placement of pavement striping or markings.
- B. When no previously applied figures, markings, or traffic striping are available to serve as a guide, suitable layouts shall be spotted in advance of the permanent paint application by any means satisfactory to the City.
- C. The Contractor shall mark or otherwise delineate the traffic lanes in the new roadway or portion of roadway, or detour before opening it to traffic.
- D. The Contractor shall provide an experienced technician to supervise the location, alignment, layout, dimensions, and application of the delineation or marking.
- E. The Contractor shall furnish all equipment, materials, labor and supervision necessary for installing pavement striping and markings in accordance with the contract plans for temporary detours required for the safe control of traffic through and/or around the project.
- F. Standard word markings, letters, numerals, and symbols shall be as shown, on the plans. In the absence of such information, all stencils and templates shall be identical with those used by the City. The Contractor shall obtain stencils for all required legends.

3.2 TEMPORARY PAVEMENT MARKINGS

- A. Should the Contractor elect to alter the existing traffic stripes and markings, or to divert the flow of traffic on construction projects for his own convenience and there are no special pavement markings or lane delineations shown on the plans or in the Technical Specifications, he shall, at no expense to the City, provide the necessary temporary striping in accordance with the CA MUTCD, unless otherwise directed by the City. Removal of such striping shall be at the Contractor's expense. The Contractor shall remove all existing or temporary detour striping or markings that may confuse the public. When temporary detour striping or markings are no longer required, they shall be removed prior to applying the new traffic stripes or markings.
- B. Temporary Traffic Stripe or Marking Tape shall be removed "clean" prior to installation of permanent pavement delineation.

3.3 REMOVAL OF EXISTING MARKINGS

- A. Existing striping and pavement markings that will be in conflict with the finish traffic circulation shall be removed as directed by the City in accordance with Section 84-9 of the Caltrans Standard Specifications.
- B. The Contractor shall conduct his work so as not to damage existing pavement and public improvements to remain. Any resultant damage determined to be

excessive by the City shall be repaired in kind by the Contractor at its sole expense.

- C. Damage to the pavement resulting from removal of pavement markers shall be considered as any depression more than 1/4-inch (6.35mm) deep and shall be repaired by the Contractor by filling the depression with hot melt bituminous adhesive to the satisfaction of the City.
- D. Where blast cleaning is used for the removal of traffic stripes and pavement markings or objectionable material, the residue including dust shall be removed immediately after contact between the sand and the surface being treated. Such removal shall be by a vacuum attachment operating concurrently with the blast cleaning operation.
- E. Where removal of traffic stripes and pavement markings is done by grinding or sandblasting methods, the effected pavement surface shall be completely covered by applying asphaltic emulsion conforming to Section 94 of Caltrans Standard Specifications.
- F. All reference markings made by the Contractor shall be done with spray chalk.
- G. All temporary traffic stripes and pavement markings shall be removed by the Contractor on the same day as placement of the permanent striping and markings.

3.4 PAVEMENT MARKER INSTALLATION

- A. Placement of pavement markers shall conform to Section 81-3, "Pavement Markers," of the Caltrans Standard Specifications, as specified herein, and in the Technical Specifications.
- B. Fire hydrant markers shall be two-way blue retroreflective pavement markers and installed at all fire hydrant locations, as directed by the City.

3.5 PAVEMENT MARKINGS INSTALLATION

- A. Placement of all traffic stripes and pavement markings shall be in conformance with Section 84, "Markings" of the Caltrans Standard Specifications, referenced Plans of the Caltrans Standard Plans, with color required as shown on the Drawings and as specified herein.
- B. Any overlap, dripping, or tracking of fresh thermoplastic or paint onto unmarked surfacing shall be removed to the satisfaction of the City.
- C. Thermoplastic and paint shall be placed as close as possible to existing utility structure and monument frames and covers without covering them.
- D. The Contractor shall protect all fresh thermoplastic and paint and shall repair or replace all damage to traffic stripes and pavement markings caused by his failure to do so at its own expense.

- E. All traffic stripes and pavement markings, new or existing, within or adjacent to the work limits which become defaced or damaged during the Contractor's operations shall be replaced by the Contractor at its expense concurrently with other traffic marking operations in the immediate area. The City shall be the sole judge as to which stripes or legends are defaced or damaged.
- F. Curb painting shall be applied as shown on the plans and as directed by the City. Curb painting shall include the application of two coats of traffic paint with glass beads incorporated in the second coat. Top and face of curb shall be painted. Color of curb markings shall conform to ASTM D6628.
- G. All traffic stripes and pavement markings shall be placed at application rates in conformance with Section 84-2, "Traffic Stripes and Pavement Markings", of the Caltrans Standard Specifications.

3.6 GLASS BEAD APPLICATION

- A. All traffic stripes, except the black separation line, shall be beaded.
- B. Glass beads shall be applied directly and uniformly to the set traffic line with a bead dispenser machine placed the proper distance behind the paint spray nozzle, unless pre-mix is approved.
- C. Glass beads shall be applied to pavement markings and crosswalks by a special paint spray gun developed for this purpose.
- D. Glass beads shall be applied at application rates in conformance with Section 84-2, "Traffic Stripes and Pavement Markings", of the Caltrans Standard Specifications.:

3.7 CLEANING

- A. [Section 01 77 00 - Closeout Requirements](#): Final cleaning.
- B. Clean finishes and touch up damage.

3.8 PROTECTION OF FINISHED WORK

- A. [Section 01 77 00 - Closeout Requirements](#): Protecting finished work.

END OF SECTION 32 17 00

SECTION 32 17 26 - DETECTABLE WARNING SURFACING**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes: Detectable warning surfacing and accessories at curb ramps, median opening islands, and at other locations as shown on the drawings.
- B. Related Requirements:
 - 1. [Section 01 50 00 - Temporary Facilities and Controls](#): Short-term traffic control as required by this Section.
 - 2. [Section 32 12 16 - Asphalt Paving](#): Coordination with paving systems for equipment specified in this Section.
 - 3. [Section 32 13 13 - Concrete Surface Improvements](#): Coordination with paving systems for equipment specified in this Section.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Full compensation for "Detectable Warning Surfacing" shall be considered as included in the contract prices paid for bid items of work involved and no additional compensation will be allowed therefor.

1.3 REFERENCE STANDARDS

- A. American Association of State and Highway Transportation Officials:
 - 1. AASHTO HB-17 - Standard Specifications for Highway Bridges.
- B. ASTM International:
 - 1. ASTM C1371 - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.
 - 2. ASTM C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
 - 3. ASTM D570 - Standard Test Method for Water Absorption of Plastics.
 - 4. ASTM D638 - Standard Test Method for Tensile Properties of Plastics.
 - 5. ASTM D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
 - 6. ASTM D1044 - Standard Test Method for Resistance of Transparent Plastics to Surface Abrasion.
 - 7. ASTM D2240 - Standard Test Method for Rubber Property - Durometer Hardness.
 - 8. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

9. ASTM E303 - Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
10. ASTM E408 - Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.
11. ASTM E903 - Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.
12. ASTM E1918 - Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field.
13. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

C. U.S. Architectural and Transportation Barriers Compliance Board (Access Board):

1. Americans with Disabilities Act (ADA) - Accessibility Guidelines for Buildings and Facilities.

D. California Code of Regulations (CCR): Provide only approved DSAAC detectable warning products as provided in the California Code of Regulations (CCR) Title 24, Chapter 2, Section 202 definition of "Detectable Warning". Section 11B-247 and 11B-705 "Detectable Warnings And Detectable Directional Texture"

E. Caltrans Standard Specifications

1. Section 73 – Concrete Curbs and Sidewalks.

F. California Building Code (CBC).

1.4 COORDINATION

A. Coordinate Work of this Section with Work of other Sections.

1.5 SUBMITTALS

A. [Section 01 33 00 - Submittal Procedures](#) specifies requirements for submittals.

B. Product Data: Submit manufacturer's information including characteristics, dimensions, domes, and special shapes.

C. Manufacturer's Certificate: Certify that product meets or exceeds specified requirements.

D. Manufacturer's Instructions: Submit detailed instructions on installation requirements, including storage, cleaning and handling procedures.

E. Submit maintenance recommendations.

F. Source Quality-Control Submittals: Indicate results of factory tests and inspections.

G. Manufacturer Reports:

1. Certify that equipment has been installed according to manufacturer's instructions.
2. Indicate activities on Site, adverse findings, and recommendations.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. [Section 01 60 00 - Product Requirements](#): Requirements for transporting, handling, storing, and protecting products.
- B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
- C. Store and protect materials according to manufacturer's instructions. Finished surfaces shall be protected by sturdy wrappings.

1.7 WARRANTY

- A. [Section 01 78 00 - Closeout Submittals](#): Requirements for warranties.
- B. Furnish five (5) year manufacturer's warranty for detectable warning surfacing.

PART 2 - PRODUCTS

2.1 DETECTABLE WARNING SURFACING

- A. Manufacturer List:
 1. Armor-Tile Tactile Systems by Engineered Plastics, Inc.
 2. ADA Solutions
 3. Or approved equal
- B. Description:
 1. ADA-compliant detectable warning surfaces for visually impaired pedestrians.
 2. Suitable for installation on both asphalt and concrete.
- C. Design and Performance Criteria:
 1. Loading: Single-wheel HS20-44, according to AASHTO HB-17.
 2. Resistant to impacts, wear, freeze-thaw, UV exposure, and stains.
 3. Fire Spread: Less than 25 when tested according to ASTM E84.
 4. Slip Resistance: 0.80, according to ASTM E303.
 5. Taber Abrasion: 150 mgs, according to ASTM D1044.
 6. Durometer Hardness: 90, according to ASTM D2240, Type A.
 7. Water Absorption:
 - a. Comply with ASTM D570.
 - b. Maximum: 0.05 percent.

8. Minimum Strengths:
 - a. Compressive: 28,000 psi according to ASTM D695.
 - b. Flexural: 25,000 psi, according to ASTM D790.
 - c. Tensile: 11,000 psi, according to ASTM D638.
9. Slip Resistance:
 - a. Static coefficient of friction (Dry): 1.03.
 - b. Static coefficient of friction (Wet): 0.83.
 - c. Wheelchair Safety: Furnish minimum 40, 90-degree raised 0.045-inch points per sq. in.
 - d. Spacing: Center to center spacing of 2.30-inches minimum to 2.40-inches maximum, and base-to-base spacing of 0.65-inches minimum, measured between the most adjacent domes on a square grid.

Exception: Where installed in a radial pattern, truncated domes shall have a center-to-center spacing of 1.60-inches minimum to 2.40-inches maximum.
 - e. Size: Base bottom diameter of 0.90-inches minimum and 0.92-inches maximum, top diameter of 0.45-inches minimum and 0.47-inches maximum, and a height of 0.2-inches.

D. Cast-in-Place-Type:

1. Epoxy polymer, glass-reinforced, thermoset composite
2. Length and Width: As shown on the Drawings.
3. Depth: 1-3/8 inches.
4. Face Thickness: 3/16 inch
5. Color: Yellow, FS33538 of Federal Standard 595C. Color shall be homogeneous throughout the detectable warning surface.
6. Detectable Warning surfaces shall provide a 70 percent minimum visual contrast with adjacent walking surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. [Section 01 70 00 - Execution](#): Requirements for installation examination.
- B. Verify that substrate is level or to correct grade, is smooth, is capable of supporting detectable warning surface units and imposed loads, and is otherwise ready to receive Work of this Section.

3.2 PREPARATION

- A. Maintenance and Protection of Traffic:

1. Provide short-term traffic control as specified in [Section 01 50 00 - Temporary Facilities and Controls](#).
2. Prevent interference with operations.
3. Maintain access to existing business and other properties requiring access.

B. Surface Preparation:

1. Clean and dry paved surface prior to installing detectable warning surface modules.
2. Blow or sweep surface free of dirt, debris, oil, grease, or gasoline.
3. Cleaning materials used on site shall have code acceptable low VOC solvent content and low flammability.

C. Existing Work:

1. Remove existing detectable warning surface modules by methods that will cause least damage to pavement surface.
2. Repair pavement or surface damage caused by removal operations.

3.3 INSTALLATION

- A. Install detectable warning surfacing according to manufacturer's instructions. Contractor shall use whole pieces before using any cut pieces of domes.
- B. The concrete shall be poured and finished, true and smooth to the required dimensions and slope prior to Cast-in-Place Detectable Warning Surfacing.
- C. Cast-in-Place Detectable Warning Surfacing shall be tamped or vibrated into the fresh concrete to ensure that there are no voids or air pockets, and the field level of the Cast-in-Place Detectable Warning Surfacing is flush to the adjacent concrete surface or as the Drawings indicate to permit proper water drainage and eliminate tripping hazards between adjacent finishes.

3.4 FIELD QUALITY CONTROL

- A. [Section 01 77 00 - Closeout Requirements](#): Requirements for testing, adjusting, and balancing.
- B. Inspect for correct location, extent of coverage, and final grade.

3.5 CLEANING

- A. Clean detectable warning surfacing according to manufacturer's instructions.

3.6 PROTECTION

- A. During and after the detectable warning surfacing installation and the concrete curing stage, it is imperative that there are no walking, leaning or external forces placed on the detectable warning surfacing to rock the detectable warning

surfacing, causing a void between the underside of the detectable warning surfacing and the concrete.

- B. Protect detectable warning surfacing from vehicular and pedestrian traffic on newly installed detectable warning surface modules for period of time as instructed by manufacturer.
- C. Remove Protective Plastic Sheeting from detectable warning surfacing within 24 hours of installation of the detectable warning surfacing. Particularly under hot weather conditions (80 degrees or higher), plastic sheeting will adhere strongly (resulting in difficult removal of same) to detectable warning surfacing when not removed quickly.
- D. While detectable dome installation is susceptible to vandalism, Contractor shall have someone present on-site to ensure that the detectable dome installation isn't damaged.

END OF SECTION 32 17 26

SECTION 33 01 30 – TESTING FOR SANITARY SEWER, STORM DRAINAGE - PIPING AND MANHOLES

PART 1 - GENERAL

1.1 SUMMARY

- A. The CONTRACTOR shall provide all materials, equipment and labor to perform and complete pipeline flushing and testing, and Closed Circuit Television Inspection (CCTV) complete, for sanitary sewer and storm drain system piping, as specified herein.
- B. The CONTRACTOR shall be responsible for conveying test water from the source to the point of usage and also for proper disposal, as required, of water used in the testing operations. All costs associated with supply and disposal of test water shall be at the Contractor's expense.
- C. Section Includes:
 - 1. Testing of Gravity Sewer Piping and Storm Drainage Piping:
 - a. Low pressure air testing.
 - 2. Deflection testing of plastic sewer piping and storm drainage piping.
 - 3. Testing of Manholes:
 - a. Vacuum testing.
 - 4. Closed Circuit Television Inspection (CCTV)
- D. Related Requirements:
 - 1. [Section 01 33 00 – Submittal Procedures](#)
 - 2. [Section 01 70 00 - Execution](#)
 - 3. [Section 01 77 00 - Closeout Requirements](#)
 - 4. [Section 33 31 13 - Sanitary Sewer Piping](#)
 - 5. [Section 33 41 13 - Storm Drainage Piping](#)

1.2 REFERENCE STANDARDS

- A. ASTM International:
 - 1. ASTM C 828 - Standard Test Method for Low-Pressure Air Test of Vitrified Clay Pipe Lines.
 - 2. ASTM C1244 - Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill.

3. ASTM D2122 - Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings. (For Determining Dimension of PVC pipes).

1.3 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. Contractor shall submit following items a minimum of 3 working days prior to start of testing:
 1. Testing procedures.
 2. List of test equipment.
 3. Testing sequence schedule.
 4. Provisions for disposal of flushing and test water.
 5. Certification of test gage calibration certified by laboratory at the Contractor's expense prior to the leakage test.
 6. Deflection mandrel drawings and calculations.
- C. Test and Evaluation Reports: Contractor shall submit results of manhole and piping tests.
- D. The Contractor shall provide all inspection data and files on a portable external hard drive or CD or DVD and shall become the property of the City once submitted. All mpg video files and individual report PDF's contained on the hard drive shall be named as follows: upstream manhole ID-downstream manhole ID-Date Time Stamp; (i.e.MH22-MH23 MM-DD-YYYY-HH:MM:SS.mpg)
- E. The Contractor shall utilize Pipeline Assessment and Certification Program (PACP) certified inspectors for the CCTV work at all times and PACP latest Version. coding methods shall be employed for all CCTV inspections conducted. Evidence of PACP certification of the Operator shall be provided to the City prior to the commencement of any work

PART 2 - PRODUCTS

2.1 MATERIAL REQUIREMENTS

- A. All testing equipment and materials including but not limited to materials and equipment specified below shall be provided by the Contractor. No materials shall be used which would be injurious to pipeline system or structure or future function.
- B. All test gages shall be laboratory-calibrated test gages and shall be recalibrated by a certified laboratory at the Contractor's expense prior to the leakage test. A timeline for the last testing of the calibration gage shall be submitted prior to use.

2.2 VACUUM TESTING

- A. Contractor shall furnish all equipment:
 - 1. Vacuum pump.
 - 2. Vacuum line.
 - 3. Vacuum Tester Base:
 - a. Compression band seal.
 - b. Outlet port.
 - 4. Shutoff valve.
 - 5. Stopwatch.
 - 6. Plugs.
 - 7. Vacuum Gage: Calibrated to 0.1 in. Hg.

2.3 AIR TESTING

- A. Contractor shall furnish all equipment:
 - 1. Air compressor.
 - 2. Air supply line.
 - 3. Shutoff valves.
 - 4. Pressure regulator.
 - 5. Pressure relief valve.
 - 6. Stopwatch.
 - 7. Plugs.
 - 8. Pressure Gage: Calibrated to 0.1 psi.

2.4 DEFLECTION TESTING

- A. Contractor shall furnish all equipment:
 - 1. "Go, no go" mandrels of various sizes with diameter not less than 95 percent of the average inside diameter of pipe, as determined by ASTM standard to which pipe is manufactured.
 - 2. Pull/retrieval ropes.

2.5 CCTV INSPECTION

- A. For Capital Improvement Projects (CIP) and new development projects, the CCTV inspections shall be completed by the City. The Project Developer shall pay the City for the CCTV inspection services and fees. The developer will only be responsible to conduct the CCTV inspections if the City is unable to perform the work.

- B. Television inspection equipment shall have an accurate footage counter that will display on the monitor and record the camera distance from the centerline of the starting manhole.
- C. The camera shall be of the remotely operated pan and tilt type and shall have full HD resolution (1920x1080 pixels) camera capable of zooming. The rotating camera and light head configuration shall have the capability of panning 360° with pan and tilt capability of providing a full view of the pipe to ensure complete inspection of the mainline pipe and service laterals. A disk to determine the depth of water shall be installed to the CCTV camera.
- D. The camera, television monitor, and other components shall be color. To ensure peak picture quality throughout all conditions encountered, the color camera shall be equipped with the necessary circuitry to allow for the remote adjustment of the optical focus iris from the power control unit at the viewing station. A variable intensity control of the camera lights shall also be located at the viewing station
- E. Lighting and camera quality shall be suitable to allow a clear, in focus picture for the entire inside periphery of the pipe.
- F. Camera quality shall be suitable to provide a full 360° view of the pipe during the inspection pipelines extending at least ten (10) feet in front of the camera.
- G. The travel speed of the camera shall be variable but uniform and shall not exceed 30 feet per minute. Any means of propelling the camera through the sewer line which would produce non-uniform or jerky movement of the camera, will not be acceptable.
- H. The television system shall be capable of performing line segment inspection in increments of 400 feet with one setup.
- I. Service laterals shall be inspected utilizing a CCTV inspection push camera system, capable of inspecting up to one hundred (100) feet of pipe.
- J. Water shall be flowing in pipe continuously during CCTV recording.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that manholes and piping are ready for testing.
- B. Verify that trenches are backfilled.

3.2 PREPARATION

- A. [Section 01 70 00 - Execution](#): Requirements for preparation.

B. Lamping:

1. Lamp gravity piping after flushing and cleaning.
2. Perform lamping operation by shining light at one end of each pipe section between manholes.
3. Observe light at other end.
4. Pipe not installed with uniform line and grade will be rejected.
5. Remove and reinstall rejected pipe sections.
6. Re-clean and lamp until pipe section is installed to uniform line and grade.

C. Plugs:

1. Plug outlets, wye branches, and laterals.
2. Brace plugs to resist test pressures.

3.3 FIELD QUALITY CONTROL

- A. [Section 01 45 00 – Quality Control](#): Requirements for testing, adjusting, and balancing.
- B. All sanitary sewer and storm drain lines shall be cleaned and flushed prior to testing using a high-pressure sewer jet with vacuum equipment or other methods acceptable to the Project Manager.
- C. Contractor will be solely responsible for conveying test water from the source point to the point of usage as part of Contractor's expense and will be solely responsible for the proper disposal of all water used in the flushing and testing process. Disposal of all water shall be in accordance with appropriate regulatory agency requirements. All flushing and testing operations shall be performed in the presence of the Project Manager. During flushing of the sanitary sewer and storm drain lines, the manholes at the low end of the new line shall be plugged and incoming water pumped to a drain point approved by the Project Manager. Before the plug can be removed, all sand, silt, gravel and other foreign material shall be completely removed from the manhole.

3.4 LOW-PRESSURE AIR TESTING FOR STORM DRAINAGE AND SANITARY SEWER PIPING

- A. The Contractor shall furnish all materials, equipment and labor for making an air test. Air test equipment shall be approved by the Project Manager. The Contractor may conduct an initial air test of the sewer main line after densification of the backfill but prior to installation of the laterals. Such tests will be considered to be for the Contractor's convenience and need not to be performed in the presence of the Project Manager.
 1. Test each reach of gravity sewer piping between manholes by plugging and bracing all openings in the main sewer line and the end of all laterals.
 2. Prior to any air pressure testing, all pipe plugs shall be checked with a soap solution to detect any air leakage. If any leaks are found, the air pressure

shall be released, the leaks eliminated and the test procedure started over again.

3. The final leakage test of the sewer main line and laterals shall be conducted in the presence of the Project Manager.
4. Introduce air pressure within the line slowly to approximately 4 psig using a compressed air supply.
5. Determine ground water elevation above spring line of piping.
6. For every foot of ground water above spring line of piping, increase starting air test pressure by 0.43 psi.
7. Do not increase pressure above 10 psig.
8. Allow pressure to stabilize for at least five minutes before the actual test begins.
9. Adjust pressure to 3.5 psig or to increased test pressure as determined above when ground water is present.
10. Minimum Testing Duration in Minutes:

Pipe Size (inches)	Distance between openings					
	50 ft	100 ft	150 ft	200 ft	250 ft	300 ft
3	0.10	0.20	0.30	0.40	0.50	0.60
4	0.15	0.30	0.45	0.60	0.75	0.90
6	0.35	0.70	1.05	1.40	1.75	2.10
8	0.60	1.20	1.80	2.40	3.00	3.60
10	0.75	1.50	2.25	3.00	3.75	4.50
12	0.90	1.80	2.70	3.60	4.50	5.40
15	1.05	2.10	3.15	4.20	5.25	6.30
18	1.20	2.40	3.60	4.80	6.00	7.20
21	1.50	3.00	4.50	6.00	7.50	9.00
24	1.80	3.60	5.40	7.20	9.00	10.80
27	2.10	4.20	6.30	8.40	10.50	12.60
30	2.40	4.80	7.20	9.60	12.00	14.40
33	2.70	5.40	8.10	10.80	13.50	16.20
36	3.00	6.00	9.00	12.00	15.00	18.00

11. Record drop in pressure during testing period.
12. If air pressure drops more than 1.0 psi during testing period, piping has failed.
13. If 1.0 psi air pressure drop has not occurred during testing period, piping is acceptable; discontinue testing.
14. If piping fails, test reach of piping in incremental stages until leaks are isolated, repair leaks, and retest entire reach between manholes.
15. After completion of the test, the air pressure shall be released slowly and the test plugs shall not be removed until the air pressure is no longer measurable.
16. At the Contractor's option, joints may be air tested individually, joint by joint, with the use of specialized equipment. The Contractor shall submit its joint testing procedure for the Project Manager's review prior to testing. Prior to each test, the pipe at the joint shall be wetted with water.

3.5 DEFLECTION TESTING OF PLASTIC STORM DRAINAGE AND SANITARY SEWER PIPING

- A. See below for Deflection Testing requirements.
1. Contractor shall perform vertical ring deflection testing on PVC non-pressure piping after backfilling and initial paving has been in place and prior to last lift of paving.
 2. Allowable maximum deflection for installed plastic sewer pipes shall not exceed the limits on the Central San Standard Specifications for Design and Construction.
 3. Perform deflection testing using properly sized "go, no go" mandrel.
 4. Furnish mandrel with diameter not less than 95 percent of the average inside diameter of pipe, as determined by ASTM standard to which pipe is manufactured; measure pipe diameter in compliance with ASTM D2122.
 5. Perform testing without mechanical pulling devices.
 6. All PVC non-pressure piping shall be tested by passing the mandrel from the nearest downstream structure to the nearest upstream structure.
 7. Contractor shall locate, excavate, replace, and retest piping that exceeds allowable deflection.

3.6 MANHOLE TESTING

- A. All manholes shall be vacuum tested for leakage after installation in the presence of the Project Manager. Prior to vacuum testing all manholes shall be visually inspected for leaks. All leaks, cracks and lift holes shall be repaired by the Contractor, prior to vacuum testing, to the satisfaction of the Project Manager. All repairs shall be made with non-shrink grout. Any alternative repair methods shall be approved by the Project Manager.
1. If air testing, test prior to backfilling in order to easily locate the leaks.
 2. Repair both outside and inside of joint to ensure permanent seal.
 3. Test manholes with manhole frame set in place.
 4. Vacuum Testing:
 - a. Comply with ASTM C1244.
 - b. Plug pipe openings; securely brace plugs and pipe to sufficiently hold against vacuum pressure during testing, and removed following successful completion of the testing.
 - c. Inflate compression band to create seal between vacuum base and structure.
 - d. Connect vacuum pump to outlet port with valve open, then draw vacuum to ten (10) inches of Mercury (Hg). Stabilize the vacuum at ten (10) inches of Mercury (Hg).
 - e. Close valve and shut off the vacuum pump.
 - f. Manhole Test Duration in Seconds:
 - 1) Diameter 4 Feet: 60.
 - 2) Diameter 5 Feet: 75.
 - 3) Diameter 6 Feet: 90.
 - g. Record vacuum drop during test period.

- h. If vacuum drop is greater than one (1) inches of Mercury (Hg) during testing period, repair and retest manhole.
- i. If vacuum drop of one (1) inches of Mercury (Hg) does not occur during test period; manhole is acceptable; discontinue testing.
- j. If vacuum test fails to meet one (1) inches of Mercury (Hg) drop in specified time after repair, repair and retest manhole.
- k. Manholes repairs and retesting shall proceed until a passing test is completed.

3.7 CCTV INSPECTION

A. See below for CCTV requirements before final lift of paving:

1. All sanitary sewer systems shall be CCTV inspected. In addition, all storm drain systems are subject to CCTV inspection. In all paved areas the CCTV inspection must be coordinated by the Contractor to allow sufficient time for the CCTV inspection to be performed after backfill, initial paving and prior to the final lift of asphalt paving being placed. The City's approved CCTV testing company will perform the CCTV inspections. The Contractor shall repair all problems revealed by the CCTV inspection. The Contractor shall coordinate with the Project Manager to arrange for a compatible time to conduct the inspection.
2. The Contractor shall contact the Project Manager for a list of approved CCTV testing companies. The Contractor shall submit the sanitary sewer video (CD/DVD disk) to the City for review. No unrecorded gaps shall be left in the recording of a segment between the inspections. All recording of a single segment shall not extend over more than one CD/DVD disk.
3. CD/DVD shall visually display, at a minimum, CCTV Contractor's name, project name, date of inspection, pipe segment number, manhole numbers as shown on the Drawings or lateral lot numbers. The distance between manholes shall be verified by measuring tape. If the counter distance and the taping distance differ by more than 2 feet per 100 feet, the run shall be re-televised by the CCTV Contractor at the Contractor's expense.
4. Any of, but not limited to the following observations from CCTV inspections will require correction:
 - a. Low spot 0.0625 x diameter of pipe or greater (e.g., 0.5" for an 8" pipe).
 - b. Joint separations (3/4" or greater opening between pipe sections).
 - c. Cocked joints present in straight runs or on the inside of pipe curves.
 - d. Chips in pipe ends.
 - e. Cracked or damaged pipe.
 - f. Offset joints.
 - g. Infiltration.
 - h. Debris or other foreign objects.
 - i. Other obvious deficiencies.
5. CD/DVD disk, USB flash drive, or portable external hard drive shall become the property of the City.

END OF SECTION 33 01 30

SECTION 33 05 13 - MANHOLES AND STRUCTURES**PART 1 - GENERAL**

1.1 SUMMARY

A. Section Includes:

1. Cast-in-place concrete manholes and structures with transition to cover frame, covers, anchorage, and accessories.
2. Modular precast concrete manholes and structures with tongue-and-groove joints and transition to cover frame, covers, anchorage, and accessories.
3. Bedding and cover materials.

B. Related Requirements:

1. [Section 03 30 00 – Utility Cast-in-Place Concrete](#): Concrete Forming and Accessories, Erection and bracing of forms.
2. [Section 03 30 00 – Utility Cast-in-Place Concrete](#): Concrete Reinforcing: Execution requirements for reinforcing steel as required by this Section.
3. [Section 03 30 00 – Utility Cast-in-Place Concrete](#): Concrete type for manhole and structure foundation slab construction.
4. [Section 31 05 13 – Clearing & Grubbing, Excavation, and Earthwork](#): Backfill.
5. [Section 31 23 16 – Utility Trenching](#): Excavating for manholes, structures, and foundation slabs.
6. [Section 33 01 30 – Testing for Sanitary Sewer, Storm Drainage – Piping and Manholes](#): Testing requirements for manholes.
7. [Section 33 05 17 – Precast Concrete Valve Vaults and Meter Boxes](#): Execution requirements for utility structures affected by this Section.
8. [Section 33 31 13 – Sanitary Sewer Piping](#): Piping connections to manholes.
9. [Section 33 41 13 – Storm Drainage Piping](#): Piping connections to manholes and structures.

1.2 REFERENCE STANDARDS

A. American Association of State Highway Transportation Officials:

1. AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications.
2. AASHTO M306 - Standard Specification for Drainage, Sewer, Utility, and Related Castings.

B. American Concrete Institute:

1. ACI 530/530.1 - Building Code Requirements and Specification for Masonry Structures.

C. ASTM International:

1. ASTM A48 - Standard Specification for Gray Iron Castings.
2. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
3. ASTM C361 - Standard Specification for Reinforced Concrete Low-Head Pressure Pipe.
4. ASTM C478 - Standard Specification for Precast Reinforced Concrete Manhole Sections.
5. ASTM C497 - Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile.
6. ASTM C913 - Standard Specification for Precast Concrete Water and Wastewater Structures.
7. ASTM C923 - Standard Specification for Resilient Connectors between Reinforced Concrete Manhole Structures, Pipes, and Laterals.

1.3 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. Product Data: Submit data for manhole covers, component construction, features, configuration, and dimensions.
- C. Shop Drawings:
 1. Indicate structure locations and elevations.
 2. Indicate sizes and elevations of piping, conduit, and penetrations.
- D. Manufacturer's Certificate: Certify that products meet or exceed the Specifications.
- E. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.
- F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

1.4 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three (3) years' documented experience.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. [Section 01 60 00 - Product Requirements](#): Requirements for transporting, handling, storing, and protecting products.
- B. Inspection: Accept materials on Site in manufacturer's original packaging and

- C. Comply with precast concrete manufacturer's instructions and ASTM C913 for unloading, storing, and moving precast manholes and drainage structures.
- D. Storage:
 - 1. Store precast concrete manholes and drainage structures to prevent damage to Owner's property or other public or private property.
 - 2. Repair property damaged from materials storage.

PART 2 - PRODUCTS

2.1 MANHOLES AND STRUCTURES

- A. Manufacturers:
 - 1. Oldcastle Precast, Inc.
 - 2. Jensen Precast
 - 3. Cook Concrete Products, Inc.
 - 4. US Concrete Precast Group
 - 5. Forterra
 - 6. Or approved equal
- B. Manhole and Structure Sections:
 - 1. Description: Reinforced precast concrete conforming to ASTM C478 with gaskets conforming to ASTM C923.
 - 2. Joints for Precast Manholes and Structures:
 - a. Conforming to ASTM C913.
 - b. Maximum Leakage: 0.025 gal. per hour per foot of joint at 3 feet of head.
- C. Manhole and Structure Sections: Reinforced cast-in-place concrete as specified in [Section 03 30 00 – Utility Cast-in-Place Concrete](#).
- D. Mortar and Grout:
 - 1. Type S with minimum 28-day compressive strength of 2,100 psi.
- E. Reinforcement: Formed steel: Welded wire and reinforcing rebar per ASTM A615 Grade 60.
- F. Shaft Construction and Eccentric Cone Top Section:
 - 1. Pipe Sections: Reinforced precast concrete, unless specified otherwise.
 - 2. Joints:
 - a. Watertight Joints
 - b. Dry.

3. Sleeved to receive pipe.
- G. Shape: Cylindrical for Manholes and Square or Rectangular for inlet structures
- H. Clear Inside Dimensions: Diameter of Minimum 48 inches for manholes unless specified otherwise on the Drawings.
- I. Design Depth: As indicated on Drawings.
- J. Clear Cover Opening: Diameter of Minimum 26 inches unless specified otherwise on the Drawings.
- K. Pipe Entry: Furnish openings as indicated on Drawings.
- L. Structure Joint Gaskets:
 1. ASTM C361.
 2. Material: Rubber.
- M. Steps: No steps are to be installed in any structures.
- N. All storm drain inlet structures require a fish decal with the wording, "No Dumping, Drains to Delta", or as approved by the Project Manager.
- O. The exterior surfaces of all Precast Concrete Structure sections shall be waterproofed.
 1. Tremco, TREMproof 250GC
 2. Or approved equal.

2.2 FRAMES, GRATES AND COVERS

- A. Manufacturers:
 1. D&L Foundry and Supply
 2. Neenah Enterprises, inc.
 3. EJ
 4. Or approved equal.
- B. Description:
 1. Construction: ASTM A48, Class 35B, AASHTO M306, cast iron.
 2. Lid:
 - a. Machined flat bearing surface.
 - b. Lockable on all unpaved areas and Boltable for all grates.
 - c. One Pick/Lift hole
 3. Grate: Grates shall be boltable and covers in unpaved areas shall be lockable.
 4. Cover Design: Closed, Open checkerboard grille ASTM grid pattern and waterproof.

5. Frame and covers shall be non-rocking.
6. Wheel Load Rating: H-20.
7. Sealing gasket.
8. Cover: Molded with identifying name and logo: Storm Drain or Sanitary Sewer, City of Pittsburg.
9. Grate: Galvanized and Bicycle safe
10. All castings shall be thoroughly cleaned and subject to a hammer inspection after which they shall be twice dipped with an asphalt or coal tar coating applied at a temperature of not less than 290° F, nor more than 310° F.

2.3 RISER RINGS

A. Riser Rings:

1. 4 Inches to 6 Inches Thick:
 - a. Material: Precast concrete.
 - b. Comply with ASTM C478.
2. Less than 4 Inches Thick:
 - a. Material: Cast iron.
 - b. Comply with AASHTO M306.

B. Accessories:

1. Joint Sealant: Comply with ASTM C990.

2.4 RUBBER SEAL WRAPS:

1. Rubber Seal Wraps shall be
 - a. Wraps and Band Widths: Conform to ASTM C877, Type III.
 - b. Cone/Riser Ring Joint: Minimum 3 inches of overlap.
 - c. Frame/Riser Ring Joint: 2 inches of overlap.
 - d. Additional Bands: Overlap upper band by 2 inches.

2.5 CONCRETE CRADLES

A. Concrete Cradle:

1. As specified in Section 03 30 00 – Utility Cast-in-Place Concrete.
2. Description: Minimum compressive strength of 4,000 psi, 28-day reinforced concrete, air entrained, rough troweled finish.

B. Cast-in-place Concrete Reinforcement: As specified in Section 03 30 00 – Utility Cast-in-place Concrete.

2.6 MATERIALS

MANHOLES AND STRUCTURES

A. Bedding and Backfill:

1. Install minimum 8-inches thick Class 2 Permeable material as specified in Section 31 23 16 – Utility Trenching below the manholes and structures.
2. Bedding and Backfill shall conform to Section 31 23 16 – Utility Trenching.

2.7 ACCESSORIES

A. Foundation Slab:

1. Cast-in-place concrete as specified in Section 03 30 00 – Utility Cast-in-Place Concrete.
2. Top Surface: Level.

B. Interior Manhole Coating: Coatings shall be white in color or grey in color.

1. Manufacturers:
 - a. Sewper Coat
 - b. Carboline
 - c. Or approved equal.

C. Concrete: As specified in [Section 03 30 00 – Utility Cast-in-Place Concrete](#)

D. Grout: As specified by the Manufacturer.

2.8 FINISHES

A. Steel Galvanizing:

1. ASTM A123.
2. Hot dip galvanize after fabrication.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that items provided by other Sections of Work are properly sized and located.
- B. Verify that built-in items are in proper location and are ready for roughing into Work.
- C. Verify correct size of manhole and structure excavation.

3.2 PREPARATION

- A. [Section 01 70 00 - Execution](#): Requirements for installation preparation.

- B. Mark each precast structure by indentation or waterproof paint showing date of manufacture, manufacturer, and identifying symbols and numbers as indicated on Drawings to indicate its intended use.
- C. Coordinate placement of inlet and outlet pipe or duct sleeves required by other Sections.
- D. Do not install manholes and structures where Site conditions induce loads exceeding structural capacity of manholes or structures.
- E. Inspect precast concrete manholes and structures immediately prior to placement in excavation to verify that they are internally clean and free from damage; remove and replace damaged units.

3.3 INSTALLATION

- A. Excavation and Backfill:
 - 1. Excavate for manholes and structures as specified in [Section 31 23 16 – Utility Trenching](#) and in indicated locations and depths.
 - 2. Provide twenty-four (24) inches of minimum clearance around sidewalls of manhole or structure for construction operations, granular backfill, and placement of geotextile filter fabric if required.
 - 3. If groundwater is encountered, prevent accumulation of water in excavations; place manhole or structure in dry trench. Where possibility exists of watertight manhole or structure becoming buoyant in flooded excavation, anchor manhole or structure to avoid flotation, as approved by Project Manager.
- B. Foundation Slab:
 - 1. Cast-in-place foundation slab and trowel top surface level. Precast foundation slabs are acceptable with approval from City.
 - 2. Place manhole sections plumb and level, trim to correct elevations, and anchor to foundation slab.
- C. Install manholes and structures supported at proper grade and alignment on Class 2 permeable material bedding extending twenty-four (24) inches beyond the sidewalls of manholes or structures.
- D. Backfill excavations for manholes and structures as specified in [Section 31 23 16 – Utility Trenching](#)
- E. Form and place manhole or structure cylinder plumb and level, to correct dimensions and elevations.
- F. Cut and fit for pipe, conduit and sleeves.
- G. Grout base of shaft sections to achieve slope to exit piping, trowel smooth, and contour to form continuous drainage channel as indicated on Drawings.

- H. Paint interior with two coats of interior coating at rate of 120 sq. ft. per gal. for each coat.
- I. Set cover frames and covers level to correct elevations without tipping.
- J. Precast Concrete Manholes and Structures:
 - 1. Lift precast components at lifting points designated by manufacturer.
 - 2. When lowering manholes and structures into excavations and joining pipe to units, take precautions to ensure that interior of pipeline and structure remains clean.
 - 3. Set precast structures, bearing firmly and fully on Class 2 Permeable Material bedding, compacted as specified in [Section 31 23 16 – Utility Trenching](#) or on other support system as indicated on Drawings.
 - 4. Assembly:
 - a. Assemble multi-section manholes and structures by lowering each section into excavation.
 - b. Install rubber gasket joints between precast sections according to manufacturer's recommendations.
 - c. Lower, set level, and firmly position base section before placing additional sections.
 - 5. Remove foreign materials from joint surfaces and verify sealing materials are placed properly.
 - 6. Maintain alignment between sections by using guide devices affixed to lower section.
 - 7. Joint sealing materials should be installed on site.
 - 8. Verify that installed manholes and structures meet required alignment and grade.
 - 9. Remove knockouts or cut structure to receive piping without creating openings larger than required to receive pipe; fill annular spaces with mortar.
 - 10. Cut pipe flush with interior of structure.
 - 11. Install synthetic rubber water stop gasket at all pipe entries.
 - 12. Shape inverts through manhole and structures as indicated on Drawings.
- K. Cast-in-Place Concrete Manholes and Structures:
 - 1. Unless approved in writing by the City Engineer, Cast-in-Place Concrete Manholes shall only be constructed to retrofit existing sanitary sewer mains at locations without an existing manhole in place.
 - 2. Cast-in-Place Concrete Manholes shall be installed in accordance with Central San Standard Specifications for Design and Construction.
 - 3. Prepare Class 2 Permeable Material bedding or other support system as indicated on Drawings to receive base slab as specified for precast structures.
 - 4. Erect and brace forms against movement, install reinforcing steel, place and

cure concrete as specified in [Section 03 30 00 – Utility Cast-in-Place Concrete](#).

L. Sanitary Manhole Exterior Drop Connections:

1. CLSM Encasement: Minimum 2 feet outside of manhole.
2. Form channel from pipe drop to sweep into main channel at maximum angle of 30 degrees.

M. Castings:

1. Set frames using mortar and masonry as indicated on Drawings.

3.4 FIELD QUALITY CONTROL

- A. [Section 01 77 00 - Closeout Requirements](#): Requirements for testing, adjusting, and balancing.
- B. Test cast-in-place concrete as specified in [Section 03 30 00 – Utility Cast-in-Place Concrete](#).
- C. Test concrete manhole and structure sections prior to backfill according to ASTM C497 as specified in [Section 33 01 30 - Testing for Sanitary Sewer, Storm Drainage - Piping and Manholes](#).
- D. Vertical Adjustment of Existing Manholes and Structures:
1. If required, adjust top elevation of existing manholes and structures to finished grades as indicated on Drawings.
 2. Frames, Grates, and Covers:
 - a. Install a false bottom to prevent dirt getting into the structure. Carefully remove frames, grates, and covers cleaned of mortar fragments.
 - b. Reset to required elevation according to requirements specified for installation of castings.
 3. Reinforcing Bars:
 - a. Remove concrete without damaging existing vertical reinforcing bars if removal of existing concrete wall is required.
 - b. Clean vertical bars of concrete and bend into new concrete top slab or splice to required vertical reinforcement as indicated on Drawings.
 4. Clean and apply sand-cement bonding compound on existing concrete surfaces to receive cast-in-place concrete as specified in [Section 03 30 00 – Utility Cast-in-Place Concrete](#).

3.5 REHABILITATION OF MANHOLES

- A. Contractor shall hire a certified Manhole Rehabilitation Inspector by NASSCO (National Association of Sewer Service Companies).

- B. Remove existing steps within manhole.
- C. Clean and prepare interior surface of manhole using a power wash with up to 5000 psi to remove all loose concrete to get to a good substrate.
- D. Repair any existing leaks considered as weepers using a fast setting blend of special cements and fillers that is used to stop leaks through cracks and holes on underground concrete and brick structures and remove any infiltrating roots. Manufacturer for fast setting blend of cement shall be Mainstay ML-10 or approved equal.
- E. Apply up to 3/4" of a Portland cement-based, microsilica-enhanced, high-strength structural restoration and resurfacing mortar designed to be applied at a minimum of 1/4", and up to 5" on vertical and overhead surfaces and trowel it to get a smooth finish. Manufacturers for Portland cement-based resurfacing mortar is Mainstay ML-72 or approved equal.
- F. Spray 100 mils of a 100% solids epoxy coating. Manufacturer is Mainstay DS-5, or approved equal.
- G. Finalize with at least 4" wide of a 100% solids flexible epoxy joint sealant that is applied by trowel to the joint between the chimney and the manhole frame, at a thickness of 1/4" to prevent premature cracks where the manhole frame and mortar meet. Manufacturer for this flexible epoxy joint sealant is Madewell 806, or approved equal.
- H. Create a smooth transition between the bench and the walls of the manhole to avoid debris accumulation.
- I. Seal, plug, patch and coat the manhole structure as specified in the specifications from bench up to the top of each manhole.
- J. Contractor shall provide a minimum one year guarantee of material from the manufacture company and one year on workmanship.

END OF SECTION 33 05 13

SECTION 33 05 17 - PRECAST CONCRETE VALVE VAULTS AND METER BOXES**PART 1 - GENERAL**

1.1 SUMMARY

A. Section Includes:

1. Precast concrete valve vaults.
2. Precast concrete meter boxes.

B. Related Requirements:

1. [Section 33 11 13 - Water Distribution Piping](#): Execution requirements for piping Work as required by this Section.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Full compensation for this section shall be considered as included in the contract prices paid for bid items of work involved and no additional compensation will be allowed therefor.

1.3 REFERENCE STANDARDS

A. ASTM International:

1. ASTM A48 - Standard Specification for Gray Iron Castings.
2. ASTM A185 - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
3. ASTM A536 - Standard Specification for Ductile Iron Castings.
4. ASTM A615 - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
5. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
6. ASTM C33 - Standard Specification for Concrete Aggregates.
7. ASTM C150 - Standard Specification for Portland Cement.
8. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
9. ASTM C478 - Standard Specification for Precast Reinforced Concrete Manhole Sections.
10. ASTM C497 - Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile.
11. ASTM C890 - Standard Practice for Minimum Structural Design Loading for Monolithic or Sectional Precast Concrete Water and Wastewater Structures.
12. ASTM C913 - Standard Specification for Precast Concrete Water and Wastewater Structures.

13. ASTM C990 - Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.
14. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft³ (600 kN-m/m³).
15. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³).
16. ASTM D4104 - Standard Test Method (Analytical Procedure) for Determining Transmissivity of Nonleaky Confined Aquifers by Overdamped Well Response to Instantaneous Change in Head (Slug Tests).
17. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

1.4 COORDINATION

- A. Coordinate Work with other utilities within construction area.

1.5 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. Product Data: Submit data on valve vaults and meter boxes.
- C. Shop Drawings: Indicate plan, location, and inverts of connecting piping.
- D. Manufacturer's Certificate: Certify that precast concrete valve vaults and meter boxes meet or exceed ASTM standards and specified requirements.
- E. Manufacturer Instructions: Submit special procedures for precast concrete valve vaults and meter boxes installation.
- F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- G. Qualifications Statement:
 1. Submit qualifications for manufacturer.

1.6 CLOSEOUT SUBMITTALS

- A. [Section 01 78 00 - Closeout Submittals](#): Requirements for closeout procedures.
- B. Project Record Documents: Record actual locations and inverts of buried pipe, components, and connections.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. [Section 01 60 00 - Product Requirements](#): Requirements for transporting, handling, storing, and protecting products.
- B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
- C. Transport and handle precast concrete units with equipment designed to protect units from damage.
- D. Storage:
 1. Store precast concrete valve vaults and meter boxes according to manufacturer instructions.
 2. Do not place concrete units in position to cause overstress, warping, or twisting.

PART 2 - PRODUCTS

2.1 DESIGN REQUIREMENTS

- A. Performance and Design Criteria:
 1. Watertight, Precast, Reinforced, Air-Entrained Concrete Structures:
 - a. Design to ASTM C890 A16: equivalent to AASHTO HS20 - 16-kip wheel live loading and installation conditions.
 - b. Manufactured to conform to ASTM C913.
 2. Minimum 28-Day Compressive Strength: 5,000 psi
 3. Honeycombed or re-tempered concrete is not permitted.

2.2 WATER METER BOXES

- A. Manufacturers:
 1. Christy
 - a. B9X with FL9X lid for $\frac{3}{4}$ " meter
 - b. B16 with FL16D lid for 1-inch meters.
 - c. B-36 (17 $\frac{1}{4}$ " X30") with FL36E lid for 1 $\frac{1}{2}$ " & 2" meter
 - d. R37 P36 Pit with R37-52HT lid for 3" thru 6" meters
 - e. For 4" meter and larger, install concrete water meter vaults. Submit detailed drawings.
 2. Or approved equal
- B. After payment of fees, water meter shall be furnished and installed by the city for new services.
- C. When meter box is to be located in an area subject to vehicular traffic loading, the permittee shall furnish a regular box for $\frac{3}{4}$ " & 1" meters and a H/20 traffic rated box for 1 $\frac{1}{2}$ " & 2" meters. Traffic box cover shall be FL12 box with FL12D

lid for 5/8" x 3/4" through 1-inch meters (or approved equal) and Christy B10" X 17" with B36-616 lid (or approved equal) for 1 1/2" & 2" meters.

- D. For all types of pipes, service saddle shall be Mueller H-13000 series cc tapered thread (or approved equal). Saddles for PVC pipe shall be double or wide strap design.
- E. Corporation stop shall be 1" Mueller B-25008N (or approved equal) for 3/4" & 1" meters and a 2" Mueller B-25008N (or approved equal) for 1 1/2" & 2" meters.
- F. Angle meter stop shall be Mueller B-24258N (or approved equal) for 3/4" & 1" meters and a 2" Mueller B-24276N (or approved equal) for 1 1/2" & 2" meters.
- G. Water meter shall be located in the center of water meter box.
- H. Water lateral and services to be sized per the requirements of latest version of the California plumbing code.
- I. All water service fittings shall be lead-free
- J. Where the material for service fittings is specified to be bronze, brass fittings may be used.
- K. Minimum cover over building supply (yard piping) shall not be less than that specified in the plumbing code.
- L. 1" x 3/4" brass reducer shall be used for 5/8" x 3/4" meter.
- M. The meter box for a 1 1/2" turbine meter shall be a Christy B-30E lid (or B-30-61G for traffic areas), or approved equals. The meter box for a 2 in turbine shall be a Christy B-36 box with B-36E lid (or B-36-61G for traffic areas), or approved equals.
- N. 5lb minimum anode required on all copper service lines 2" and smaller unless geotechnical report stipulates, it is not necessary. Additional weight may be required by geotechnical report. Insulating coupling required between copper water lateral and water if main is metallic.
- O. Meter boxes, extensions, and covers shall be commercial products. Boxes shall be large enough to allow easy maintenance, testing, and removal meters.

2.3 PRECAST CONCRETE VALVES

- A. Manufacturers:
 - 1. Oldcastle Precast, Inc.
 - 2. Jensen Precast
 - 3. Or approved equal
- B. Valve Vault and Covers:
 - 1. Cast Iron Castings:

- a. ASTM A48, Class 30 or better.
 - b. Free of bubbles, sand, air holes, and other imperfections.
 - c. Slip resistant coating.
 - d. ADA rated grating in pedestrian routes and pathways.
2. Christy G5 traffic valve box (or approved equal)

2.4 MATERIALS

A. Portland Cement:

1. ASTM C150, Type II.

B. Coarse Aggregates:

1. ASTM C33.
2. Graded 1 inch to No. 4 sieve.

C. Sand:

1. ASTM C33.
2. Fineness Modulus: 2.35.

D. Water:

1. Potable.
2. Clean and free of injurious amounts of acids, alkalis, salts, organic materials, and substances incompatible with concrete or steel.

E. Air-Entraining Admixtures: ASTM C260.

F. Reinforcing Steel:

1. Deformed Bars: ASTM A615, Grade 60.
2. Welded Wire Fabric: ASTM A185.

G. Joint Sealant:

1. ASTM C990.

H. Bedding and Backfill:

1. Bedding: Bedding Type, as specified in [Section 31 23 16 – Utility Trenching](#).
2. Backfill: Backfill Type, as specified in [Section 31 23 16 – Utility Trenching](#).

2.5 FABRICATION

- A. Fabricate precast reinforced concrete structures according to ASTM C913, to dimensions indicated on Drawings, and to specified design criteria.

2.6 MIXES

- A. Design concrete mix to produce required concrete strength, air-entrainment, watertight properties, and loading requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that piping connections, sizes, locations, and inverts are as indicated on Drawings.

3.2 PREPARATION

- A. [Section 01 70 00 - Execution](#): Requirements for installation preparation.
- B. Ream pipe ends and remove burrs.
- C. Remove scale and dirt from components before assembly.
- D. Establish invert elevations for each component in system.
- E. Hand trim excavation to suit valve vaults and meter boxes; remove stones, roots, and other obstructions.

3.3 INSTALLATION

- A. Bedding and Backfill:
 - 1. Excavate as specified in [Section 31 23 16 – Utility Trenching](#) for Work of this Section.
 - 2. Hand trim excavation for accurate placement of vaults and meter boxes to elevations indicated.
 - 3. Place bedding material level in one continuous layer and compacted depth and compact to percent maximum density as specified in [Section 31 23 16 – Utility Trenching](#).
 - 4. Backfill around sides of vaults and meter boxes, tamp in place, and compact to 95 percent maximum density.
 - 5. Maintain optimum moisture content of bedding material to attain required compaction density.
 - 6. Install vaults and meter boxes and related components on bedding.
- B. Connect piping.

3.4 FIELD QUALITY CONTROL

- A. [Section 01 77 00 - Closeout Requirements](#): Requirements for testing, adjusting, and balancing.
- B. Request inspection by Project Manager prior to placing aggregate cover over piping.

- C. Compaction Testing: Conform to ASTM D1557.
- D. When tests indicate Work does not meet specified requirements, remove Work, replace, and retest.

END OF SECTION 33 05 17

SECTION 33 05 26 - UTILITY IDENTIFICATION**PART 1 - GENERAL****1.1 SUMMARY**

- A. The Contractor shall provide all materials, equipment, and labor necessary to furnish, install all utility identifications systems and appurtenances as required and as specified below:
1. Pipeline marker posts.
 2. Metal utility markers.
 3. Marking flags.
 4. Plastic warning tape for placement above direct-buried utility.
 5. Trace wire for placement above direct-buried utility.
- B. Related Requirements:
1. [Section 31 23 16 – Utility Trenching](#): Backfilling considerations for installation of underground pipe markers.
 2. [Section 33 11 13 - Water Distribution Piping](#): Piping, valves, and appurtenances requiring identification marking.
 3. [Section 33 31 13 - Sanitary Sewer Piping](#): Piping, valves, and appurtenances requiring identification marking.
 4. [Section 33 41 13 - Storm Drainage Piping](#): Piping, valves, and appurtenances requiring identification marking.

1.2 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. Product Data: Submit manufacturer's catalog information for each product required.
- C. Samples: Submit one sample of pipeline marker post, utility marker, marking flag, 10 feet of warning tape, and 10 feet of trace wire.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Qualifications Statement: Submit qualifications for manufacturer.

1.3 CLOSEOUT SUBMITTALS

- A. [Section 01 78 00 - Closeout Submittals](#): Requirements for submittals.
- B. Project Record Documents: Record actual locations of tagged valves.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. [Section 01 77 00 - Closeout Requirements](#): Requirements for maintenance materials.

PART 2 - PRODUCTS

2.1 PIPELINE MARKER POSTS

A. Manufacturers:

- 1. Furnish above ground utility marker materials with visibility enhancer according to City standards.
 - a. Pro-Mark Utility Supply Inc,
 - b. Northtown Company
 - c. Bernsten
 - d. or approved equal.

B. Description:

- 1. Material: High Impact Fiberglass Reinforced Resins
- 2. Width: 4 inches +/- 0.25 inches
- 3. Length: 96 inches
- 4. Color: Orange (Telecommunications, Fiber Optic cables or conduits), Yellow (Natural Gas, Oil, Steam, Petroleum Pipelines), Blue (Water lines), Red (Electric Power Lines, cables), Green (Sewer and Drain Lines), Purple (Reclaimed Water, Irrigation), White (Proposed excavation limits) and Pink (Temporary Survey Markings, Unknown/Unidentified facilities).
- 5. Embedment: T-anchor.
- 6. Technical Data:

Description	Test Spec. or Criteria	Test Result
Tensile Strength	ASTM D638	410 kg/cm ²
Tensile Elongation	ASTM D638	35%
Tensile Modulus	ASTM D638	17,600 kg/cm ²
Flexural Strength	ASTM D790	660 kg/cm ²
Flexural Modulus	ASTM D790	19,500 kg/cm ²
IZOD Impact Strength	ASTM D256	45 kg cm/cm
Heat Deflection Temp	ASTM D648	204.8°F
Vicat Softening Temp	ASTM D1525	201.2°F
Flammability	UL94	HB Class

2.2 UTILITY MARKERS

A. Manufacturers:

- 1. Furnish materials according to City standards.
 - a. Bernsten
 - b. Rhino
 - c. or approved equal.

B. Metal:

1. Material: Bronze
2. Diameter: 2 inches.
3. Stem: 3/4 by 2 inches
4. Text: "Warning Water Pipeline Caution Call 811 Before you dig" or "Stub for Pipeline".

2.3 MARKING FLAGS

A. Manufacturers:

1. Furnish materials according to City standards.
 - a. Bernsten
 - b. Presco Products
 - c. or approved equal.

B. Description:

1. Material: Polyethylene
2. Minimum Size: 2-1/2 by 3-1/2 inches.
3. Wire Stem: 21 inches
4. Color: Yellow, Orange, Blue, Green, Red, Pink and White.
5. Text: Blue (Buried Waterline), Red (Buried Electric Line), Pink (Survey Marker), Green (Buried Sewerline), Yellow (Buried Gas line) and Orange (Buried Fiber Optic conduits).

2.4 WARNING TAPE

A. Warning Tape:

1. Warning Tape shall be installed on all pipes greater than 2 inches and the warning tape shall be place above the centerline of the pipe, spanning the full length of the pipe, and be placed at a depth of 1-foot above top of pipe.
2. Furnish materials according to National Transportation Safety Board NTSB-PSS-73-1, GSA Public Buildings Service Guide, American Gas Association 72-D-56, API RP 1109, OSHA 1926.956 (c)(1), APWA Uniform Color Code, DOT Office of Pipeline Safety USAS B31.8, and Federal Gas Safety Regulations S 192-321 (e).
3. Technical Data:

Properties	Test Method	Value
Thickness	ASTM D2103	0.005" (5 mil)
Elongation	ASTM D882-75B	80%
Colors	APWA Coded	See below
Tensile Strength	ASTM D882	35 lbs/inch (15,000 psi)
Bond Strength	Boiling Water	5 Hours w/o Peel
Adhesives	Mfg. Specs	Morton 548 or Equivalent
Bottom Later	Mfg. Specs	Virgin PE
Top Later	Mfg. Specs	Virgin PET
Foil	Mfg. Specs	0.00035 (0.35 Mil)

Flexibility	ASTM 671-76	Pliable Hand
Message Repeat	Mfg. Specs	AXL II
Inks	Mfg. Specs	Varies per Legend
Printability	ASTM D2578	45 Dynes

4. Manufacturers:
 - a. Northtown Company
 - b. Christy's
 - c. Bernsten
 - d. or approved equal.

B. Description:

1. Material: Polyethylene
2. Brightly colored, continuously printed.
3. Minimum Size: 6 inches wide by 5 mils thick.
4. Manufactured for direct burial service.
5. Lettering Size: 1 inch
6. Color: All tape is APWA color coded and permanently printed
 - a. Red – Electric, Fire
 - b. Yellow – Gas, Oil
 - c. Blue – Water, Potable Water
 - d. Green – Sewer, Storm Drain
 - e. Orange – Fiber Optic, Telephone
 - f. Purple – Recycled Water, Non-Potable Water.
7. Standard Imprints: "CAUTION WATER LINE BURIED BELOW", "CAUTION SEWER LINE BURIED BELOW", "CAUTION SANITARY SEWER BURIED BELOW", "CAUTION GAS LINE BURIED BELOW", "CAUTION HIGH VOLTAGE ELECTRIC BURIED BELOW" or other custom utility legends in large letters.

2.5 TRACE WIRE

A. Tracer Wire:

1. Tracer wire shall be used on all pressure piping (water, recycled water, irrigation water, sewer force main etc). Tracer wire shall be blue and suitable for direct burial and wet conditions.
2. Tracer wire shall be continuous and splices shall be made with two copper or brass split bolt fasteners without encapsulation in epoxy.
3. Contractor shall submit proof of continuity testing to the City in a written format.
4. Tracing wire through valve boxes shall be placed outside of riser but inside the valve box.
5. Tracer wire shall be UL listed, Standard 83, conforming to Federal Specification JC-30-B, ANSI-C 33.80 and the requirements of National Electric Code.
6. For all pressure piping systems (potable, recycled water, sewer force mains, irrigation system, and water valves), a No. 12 A.W.G. UF Insulated solid copper wire shall be attached to the pipeline.
7. The wire shall be taped to hold in place and the tape shall be 2 inches wide,

10 mil. thick. On mains the wire shall be held in place with tape spaced not more than 10 feet apart. On service laterals the wires shall be wrapped around the pipe.

8. Furnish materials according to City standards.
 - a. Northtown Company
 - b. Priority Wire and Cable, Inc.
 - c. or approved equal.
9. Description:
 - a. Wire: Unshielded 12-AWG THWN insulated copper.

2.6 RECYCLED WATER SIGNING

- A. Contractor shall provide all identification signs and stickers for irrigation controllers for recycled water systems in compliance with Delta Diablo Water District's requirements.
- B. Signs shall be measured no less than 8"x8" with white type against a purple background.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Pipeline Marker Posts, Utility Markers, and Marking Flags: As recommended by manufacturer.
- B. Warning Tape and Tracer Wire:
 1. Warning tape shall be continuous over top of pipe buried 12 inches above piping.
 2. Tracer wire shall be taped to the pipe.
 3. If multiple pipes occur in common trench, locate tape and wire above centerline of trench.
 4. Coordinate with trench Work as specified in [Section 31 23 16 – Utility Trenching](#).

END OF SECTION 33 05 26

SECTION 33 41 13 - STORM DRAINAGE PIPING**PART 1 - GENERAL**

1.1 SUMMARY

- A. This Section includes all materials, equipment, and labor necessary to furnish and install all storm drainage piping, piping accessories, drainage structures, bedding and cover materials, concrete encasement and cradles, and all appurtenant work, complete and operable, including all connections as shown on the Drawings and as specified herein.
- B. Related Requirements:
1. [Section 03 30 00 - Utility Cast-in-Place Concrete](#)
 2. [Section 03 60 00 - Grouting](#)
 3. [Section 31 05 13 - Clearing & Grubbing, Excavation, and Earthwork](#)
 4. [Section 31 23 16 - Utility Trenching](#)
 5. [Section 33 01 30 - Testing for Sanitary Sewer, Storm Drainage – Piping and Manholes](#)
 6. [Section 33 05 13 - Manholes and Structures](#)
 7. [Section 33 05 26 - Utility Identification](#)

1.2 REFERENCE STANDARDS

- A. American Association of State Highway and Transportation Officials:
1. AASHTO M170 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
 2. AASHTO M206 - Standard Specification for Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe.
 3. AASHTO M207 - Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe.
 4. AASHTO M 252 - Standard Specification for Corrugated Polyethylene Drainage Pipe 3"-10".
 5. AASHTO M 294 - Standard Specification for Corrugated Polyethylene Pipe, 12"-60".
- B. ASTM International:
1. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 2. ASTM C76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
 3. ASTM C443 - Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
 4. ASTM C506 - Standard Specification for Reinforced Concrete Arch Culvert,

- Storm Drain, and Sewer Pipe.
5. ASTM C969 - Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.
 6. ASTM C1103 - Standard Practice for Joint Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.
 7. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³).
 8. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³).
 9. ASTM D1784 – Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds.
 10. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
 11. ASTM D2412 – Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading.
 12. ASTM D2564 - Standard Specification for Solvent Cements for Polyvinyl Chloride (PVC) Plastic Piping Systems.
 13. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings.
 14. ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 15. ASTM D3212 – Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
 16. ASTM D 3350 - Standard Specification for Polyethylene Plastics Pipe and Fittings Materials
 17. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
 18. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
 19. ASTM F679 – Standard Specification for Poly Vinyl Chloride (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings.
 20. ASTM F2306 - Standard Specification for 12 to 60 in. Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications.
 21. ASTM F2648 - Standard Specification for 2 to 60 in. Annular Corrugated Profile Wall Polyethylene (PE) Pipe and Fittings for Land Drainage Applications

1.3 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Requirements for submittals.
- B. Product Data: Submit data indicating pipe, pipe accessories and gaskets
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

- D. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.

1.4 CLOSEOUT SUBMITTALS

- A. [Section 01 78 00 - Closeout Submittals](#): Requirements for submittals.
- B. Project Record Documents: Record actual locations of pipe installed and top of pipe elevations and invert of pipe at all structures.
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.
- D. As-built drawings shall be provided as part of the closeout submittals.

1.5 QUALITY ASSURANCE

- A. Perform Work according to City Standard Specification.
- B. Maintain one (1) copy of each standard affecting Work of this Section on Site.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three (3) years of documented experience.
- B. Installer: Company specializing in performing Work of this Section with minimum three (3) years of documented experience and approved by the Manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. [Section 01 60 00 - Product Requirements](#): Requirements for transporting, handling, storing, and protecting products.
- B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage. It is the responsibility of the Contractor to check quantities and note any missing or damaged items.
- C. Storage:
 - 1. Store materials according to manufacturer instructions.
 - 2. Block individual and stockpiled pipe lengths to prevent moving.
 - 3. Stack it on reasonably level ground.
 - 4. Do not place pipe or pipe materials on private property or in areas obstructing pedestrian or vehicle traffic.
 - 5. Do not place pipe flat on ground; cradle to prevent point stress.

6. Don't stack the pipes next to heat sources such as boilers, steam lines, electrical equipment or engine exhausts.
7. Gaskets should also be protected from heat, oil and grease.

D. Protection:

1. Keep UV-sensitive materials out of direct sunlight.
2. Provide additional protection according to manufacturer instructions.

PART 2 - PRODUCTS

2.1 STORM DRAINAGE PIPING

A. Reinforced Concrete Piping:

1. Pipe:

- a. Comply with ASTM C76, AASHTO M170, ASTM C506, AASHTO M206, AASHTO M207, Class III or Class V, with Wall Type "B" or Wall "C" as specified in ASTM C76, however Wall "A" will not be allowed.
- b. The minimum allowable class of RCP shall be class III for pipe cover from three (3) feet to fifteen (15) feet defined as the distance from the inside top of pipe to the top of finished grade. RCP pipe cover less than three (3) feet from finished grade shall be Class V. Pipe covers more than fifteen (15) feet deep shall require structural loading calculations.
- c. Reinforcement: Circular reinforcing bars.
- d. Inside Nominal Diameter: 12 inches through 144 inches
- e. Ends: Bell and spigot.

2. Fittings: Reinforced concrete.

3. Joints:

- a. Comply with ASTM C443.
- b. Gaskets: O-Ring Rubber compression gaskets retained in a groove on the spigot end.

4. Manufacturers:

- a. Oldcastle Precast
- b. Jensen Precast
- c. Cook Concrete Products, Inc.
- d. Or approved equal.

B. Plastic Piping:

1. Pipe:

- a. Material: PVC.
- b. Comply with ASTM D3034, ASTM F79 - SDR 35 (Pipe Stiffness of

- 46psi) and SDR 26 (Pipe Stiffness of 115 psi)
 - c. PVC SDR-35 pipe shall be used for perforated pipes only.
 - d. The perforations shall be two rows of 1/2" diameter holes or openings at the bottom of the pipe 120° apart and five (5) inches on center.
 - e. Color: Green
 - f. Inside Nominal Diameter: Four (4) inches through Fifteen (15) inches per ASTM D3034 and Eighteen (18) inches through Forty-eight (48) inches per ASTM F679.
 - g. Style: Bell and spigot with rubber-ring sealed gasket joint.
2. Fittings: PVC.
 3. Joints:
 - a. Comply with ASTM F477.
 - b. Gaskets: Elastomeric.
 4. Manufacturers:
 - a. JM Eagle
 - b. North American Pipe Corporation
 - c. Or approved equal
- C. Corrugated High Density Polyethylene Pipe (CHDPE):

1. Pipe & Fittings:
 - a. Material: Corrugated PVC pipe with smooth interior must be manufactured from PVC virgin compounds, except clean, reworked, recycled PVC materials generated from the manufacturer's pipe or fitting fabrication may be reused.
 - b. Corrugated PVC pipe and fabricated fittings shall be manufactured using High Density Polyethylene (HDPE) as defined and described in ASTM D3350 meeting the minimum requirements of cell classification of
 - 1) 424420C for 4"-10" pipe diameters and
 - 2) 435400C for 12"-60" pipe diameters, except the carbon black content should not exceed 4%.
 - c. Size:
 - 1) 4-inch through 10-inch: Comply with AASHTO M252, Type S and ASTM F2648
 - 2) 12-inch through 60-incch: Comply with AASHTO M294, Type S; ASTM F2306 and ASTM F2648
 - d. Manning's n value: 0.012
 - e. Minimum pipe stiffness when tested under ASTMD2412 shall conform to the following Table:

Nominal ID (inches)	Min. Pipe Stiffness at 5% Deflection (psi)
4	50
6	50
8	50

10	50
12	50
15	42
18	40
24	34
30	28
36	22
42	20
48	18
60	14

- f. Minimum Pipe cover: 24-inches to finish grade.
- g. Color: Black
- h. Style: Watertight Bell and spigot with rubber-ring sealed gasket joint meeting AASHTO M252, M294 or ASTM F2306. The integral joints shall be watertight according to ASTM D3212.
- i. Joints: Joint shall provide a minimum pull-apart strength of 400lbs. The bell shall be an integral part of the pipe. Joints shall remain silt-tight when subjected to a 1.5° axial misalignment.
- j. Elastomeric gaskets must comply with ASTM F477. Install joints so that the elastomeric gasket will be compressed radially between the pipe bell and spigot to form a tight seal when assembled.
- k. Wyes, tees, reducers, elbows, coupling, laterals, and other fittings must be molded or fabricated meeting the requirements of AASHTO M252, M294 or ASTM F2306.
- l. Lubricant shall be applied to the bell and gasket during installation and must comply with pipe manufacturer’s instructions.

2. Manufacturers:

- a. N-12® WT as manufactured by Advanced Drainage Systems, Inc.
- b. Prinsco Goldflo WT® Pipe
- c. Hancor, Inc. – Blue Seal® WT IB pipe
- d. Contech Eagle Corr PE™ (Dual Wall)
- e. Or approved equal

2.2 DRAINAGE STRUCTURES

- A. Description: As specified in [Section 33 05 13 - Manholes and Structures](#).

2.3 CONCRETE ENCASEMENT AND CRADLES

A. Concrete:

- 1. Description: Reinforced concrete, as specified in [Section 03 30 00 – Utility Cast-in-Place Concrete](#).
- 2. Compressive Strength: 4,000 psi at 28 days, reinforced concrete, air-entrained rough-troweled finish.

- B. Reinforcement: As specified in [Section 03 30 00 - Utility Cast-in-Place Concrete](#).

2.4 MATERIALS

- A. Bedding and Backfill:

- 1. Bedding & Backfill: Bedding and Backfill shall be as specified in [Section 31 23 16 - Utility Trenching](#)

2.5 MIXES

- A. Grout: As specified in [Section 03 60 00 – Grouting](#)

- B. Concrete Encasements and Cradles:

- 1. Class A concrete, as specified in [Section 03 30 00 – Utility Cast-in-Place Concrete](#).

2.6 ACCESSORIES

- A. Pipe Support Brackets: Galvanized structural steel coated with bituminous paint.

- B. Pipe Markers: As specified in [Section 33 05 26 - Utility Identification](#).

- C. Drainage Structures:

- 1. Catch Basins, Inlets, Manholes and other Drainage Structures: As specified in [Section 33 05 13 - Manholes and Structures](#).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that trench cut is ready to receive Work.
- B. Verify that excavations, dimensions, and elevations are as indicated on drawings.

3.2 PREPARATION

- A. [Section 01 70 00 - Execution](#): Requirements for installation preparation.
- B. Remove large stones and other hard matter that could damage piping or impede consistent backfilling or compaction.
- C. Protect and support existing sewer lines, utilities, and appurtenances.
- D. Utilities:
 - 1. Maintain profiles of utilities.
 - 2. Coordinate with other utilities to eliminate interference.
 - 3. Notify Project Manager if crossing conflicts occur.

3.3 INSTALLATION

A. Excavation and Bedding:

1. Excavate pipe trench and providing sheeting and shoring as specified in [Section 31 23 16 – Utility Trenching](#).
2. Hand trim excavation for accurate placement of piping to indicated elevations.
3. Dewater excavations to maintain dry conditions to preserve final grades at bottom of excavation.
4. Level materials, maintaining optimum moisture content of bedding material, compacting subgrade shall conform to [Section 31 23 16 – Utility Trenching](#).
5. Cradle bottom 20 percent of diameter to avoid point load.

B. Piping:

1. Install pipe, fittings, and accessories according to ASTM D2321.
2. Install pipes in prepared trenches starting at the lowest point, with the spigot ends pointing in the direction of flow.
3. Seal joints watertight.
4. Place pipe on bedding meeting bedding requirements as specified in [Section 31 23 16 – Utility Trenching](#).
5. Unless otherwise required, all pipe shall be laid straight between the changes in alignment and at uniform grade between changes in grade.
6. The rubber gasket joint shall be made by properly lubricating the rubber gasket with a suitable vegetable compound soap before it is placed in the groove at the spigot end. The gasket shall be stretched over the spigot end of the pipe and carefully seated in the groove, with care taken to equalize the stress in the gasket around the circumference of the joint. The gasket shall not be twisted, rolled, cut, crimped, or otherwise injured or forced out of position during the closure of the joint. A feeler gauge shall be used to check the position of the rubber gasket after the joint has been assembled. Where a joint placement is found to be improper, the tested pipe section shall be removed, the gasket checked for damage, a new gasket installed, if necessary, the pipe re-laid and the gasket placement rechecked.
7. Pointing and bonding mortar at pipe connections to structures shall be plastic and of such consistency that it will readily adhere to the pipe and structure.
8. Install backfill at sides and over top of pipe
9. Compact to percent maximum density as specified in [Section 31 23 16 – Utility Trenching](#).
10. Install water stop at all pipe entry into structures.
11. Backfilling and Compaction:
 - a. As specified in [Section 31 23 16 – Utility Trenching](#).
 - b. Do not displace or damage pipe while compacting.
12. Pipe Markers: As specified in [Section 33 05 26 - Utility Identification](#).

C. Drainage Structures:

1. Catch Basins, Inlets, Manholes, and Other Drainage Structures: As

specified in [Section 33 05 13 - Manholes and Structures](#).

3.4 TOLERANCES

- A. [Section 01 45 00 - Quality Control](#): Requirements for tolerances.
- B. Maximum Variation from indicated Pipe Slope: 1/8 inch in 10 feet.

3.5 FIELD QUALITY CONTROL

- A. [Section 01 45 00 - Quality Control](#): Requirements for testing, adjusting, and balancing.
- B. Request inspection by Project Manager prior to backfill in pipe zone and immediately after placing aggregate base over pipe in the pipe zone.
- C. Testing:
 - 1. If tests indicate that Work does not meet specified requirements, remove Work, replace, and retest.
 - 2. Compaction Tests:
 - a. Comply with ASTM D1557, ASTM D698, AASHTO T180, and ASTM D6938.
 - 3. Low-Pressure Air Test:
 - a. As specified in [Section 33 01 30 – Testing for Sanitary Sewer, Storm Drainage - Piping and Manholes](#).
 - 4. Deflection Tests and CCTV Inspections:
 - a. As specified in [Section 33 01 30 – Testing for Sanitary Sewer, Storm Drainage - Piping and Manholes](#)

3.6 PROTECTION

- A. [Section 01 77 00 - Closeout Requirements](#): Requirements for protecting finished Work.
- B. Protect pipe and aggregate base from damage or displacement until backfilling operation is in progress.

END OF SECTION 33 41 13

SECTION 34 41 00 - TRAFFIC SIGNALS AND LIGHTING**PART 1 - GENERAL**

1.1 SUMMARY

- A. Work under this section shall consist of furnishing and installing, modifying or removing one or more electrical systems, all as shown on the plans and as specified in these specifications and the Department of Transportation Standard Provisions. Any deviation from the contract documents shall be approved by the Project Manager.
- B. All signals and lighting materials shall conform to the applicable provisions of the standards specified in Division X "Electrical Work" of the Department of Transportation Standard Specifications and these specifications.
- C. All materials furnished and used shall be new, except materials specified to be reused.
- D. All incidental parts which are not shown on the plans, or specified herein or in the Technical Specifications, and which are necessary to complete or modify the systems, shall be furnished and installed as though such parts were shown on the Plans or specified herein. All systems shall be in satisfactory operation at the time of completion of the work. All work end materials shall conform with the appropriate utility agency standards at Contractor's cost.

1.2 REFERENCES

- A. Caltrans Standard Specifications (Department of Transportation)
- B. California Manual on Uniform Traffic Control Devices (CA MUTCD)
- C. California Vehicle Code (CVC)
- D. National Electrical Manufacturers Association (NEMA)
- E. Underwriters' Laboratories Inc. (UL)
- F. Electronic Industries Association (EIA)
- G. National Electrical Code (Code)
- H. California Administrative Code, Title 8, Subchapter 5, Electrical Safety Orders
- I. Rules for Overhead Electrical Line Construction, General Order No. 95 and Rules' For Construction of Underground Electric Supply & Communication Systems, General Order No. 128 of the Public Utilities Commission

- J. Standards of the American Society for Testing and Materials (ASTM)
- K. National Standards Institute (ANSI)

1.3 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Submittal procedures.
- B. Contractor shall submit a schedule of values for all lump sum contract items in accordance with the [Section 01 33 00 - Submittal Procedures](#)
- C. Unless otherwise authorized in writing by the Project Manager, the Contractor shall, in accordance with the [Section 01 33 00 - Submittal Procedures](#), submit to the Project Manager for approval of list of equipment and materials which the Contractor proposes to install. The list shall be complete as to name of manufacturer, size and identifying number of each item.
- D. In addition, the Contractor shall submit detailed drawings and wiring diagrams for all electrical equipment to be used. The City will not be liable for any material purchased, labor performed, or delay to the work prior to review of documents required above.
- E. A certificate of compliance with these specifications shall be submitted to the City by the manufacturer with all 5,000-volt series lighting conductors.
- F. Product Data: Provide manufacturers specification, literature, and shop drawings for all products in this Section including but not limited to the following items:
 - a. Traffic Rectangular Flashing Beacon. The wiring diagram shall include all details and dimensions of the enclosure and internal features
 - b. Poles and APS Push Buttons
 - c. Concrete mix design for foundation concrete
 - d. Solar Panel. The wiring diagram shall include all details and dimensions of the enclosure and internal features
- G. If ordered by the Project Manager, the Contractor shall submit for review sample articles of the material proposed for use. After review, said sample articles will be returned to the Contractor. Inspection or sampling of certain materials may be made at the factory or warehouse prior to delivery to the jobsite, when required by the Project Manager.
- H. The Contractor shall submit a Sign Inventory Form to be used as the official sign inventory record. The form is to be submitted by the Contractor as part of the Traffic Control Plan prior to the start of any contract field work. The Sign Inventory Form is included in this Project Manual as Appendix A to this Section. Sign Inventory Forms are required for each intersection corner that included any pole or traffic signal work. Sign Inventory Forms shall accurately reflect all existing traffic control, street name, and other City signs at the required corners including

approximately 25' along each sidewalk approaching the corner.

- I. If directed by the Project Manager, submit a scaled shop drawing or full scale mock-up for any sign that does not comply with the CA MUTCD.
- J. If directed by the Project Manager, or as one or more of the following conditions exist, a Short Circuit Coordination study/Arc Flash study shall be required.
 1. Voltage ratings above 208 VAC to 15,000 VAC
 2. Bolted Fault between 700 Amps – 106,000 Amps Short Circuit Current
 3. Arcing Fault based on circuit breaker clearing time
 4. XFMR Impedance characteristics above 125 KVA
 5. Systems of 50 & 60 Hz
 6. Both Grounded and Ungrounded systems

1.4 CLOSEOUT SUBMITTALS

- A. [Section 01 78 00 - Closeout Submittals](#): Requirements for submittals.
- B. Upon completion of the work, the Contractor shall submit one complete set of "as-built" or corrected plans showing in detail all construction changes, within 30 days of project completion

1.5 QUALITY ASSURANCE

- A. All equipment and work shall be performed in accordance with the regulations and codes as follows: NEMA, the UL, or the EIA, wherever applicable. In addition to the requirements of the plans, these specifications, and the Technical Specifications, all materials shall conform where applicable to the requirements of the Code; California Administrative Code, Title 8, Subchapter 5, Electrical Safety Orders; Rules for Overhead Electrical Line Construction, General Order No. 95 and Rules' For Construction of Underground Electric Supply & Communication Systems, General Order No. 128 of the Public Utilities Commission; ASTM; ANSI; any local ordinances which may apply; and the applicable provisions of the Caltrans Standard Specifications, CA MUTCD, and CVC.
- B. Manufacturers' warranties and guarantees furnished for materials used in the work and instruction sheets and parts lists supplied with materials shall be delivered to the City prior to acceptance of the project. The duration of the warranty or guarantee shall be the standard of the industry with minimum of one year from the date of acceptance of the work.
- C. The rectangular rapid flashing beacon (RRFB) vendor shall provide phone technical support with a response time of 2 hours or less during vendor's normal business hours. This technical support shall be at no additional cost during the life of the contract or warranty period. The technical support shall be provided by qualified personnel with extensive knowledge of the firmware and hardware characteristics of the controllers and cabinets provided in this contract. The vendor shall provide technical assistance with the programming of all controllers

- D. If necessary, the RRFB vendor shall provide field activation assistance by qualified personnel for all controllers supplied in this contract during the warranty period.
- E. The RRFB, including wiring and related hardware, shall be guaranteed against defective materials or workmanship for a 24-month period (from date of delivery). The vendor shall be responsible for reimbursing City forces for any time and material utilized to make necessary field trouble calls due to defective controllers and/or related hardware peripherals during the warranty period. Units that are identified as being defective before the warranty has expired shall be replaced within 14 calendar days. The vendor shall be responsible for all costs, including shipping, incurred by the City for all units that are installed at an intersection and fail as a result of warranty covered failure within the warranty period.
- F. Prior to delivery, the RRFB and Solar Panel assembly shall be tested by the manufacturer or authorized local distributor to ensure proper component integration and operation. All inputs and outputs shall be tested. The controller manufacturer shall provide certification that the controller has met all CALTRANS quality assurance tests. The cabinet manufacturer shall provide certification that the cabinet assembly has met all NEMA quality assurance tests.
- G. Production Quality Control tests shall be performed on each new system prior to shipment. Failure to meet this requirements shall be cause for rejection. Each system shall be visually inspected for any exterior physical damage or assembly anomalies. Any defects shall be cause for rejection.

1.6 QUALIFICATIONS

- A. The Contractor or its listed subcontractor or its key team members performing electrical work for this contract shall have a current and active class A General Engineering Contractor or C-10 Electrical Specialty license, and have satisfactorily completed projects with work that is similar in size and complexity to that of the Contract with the following minimum requirements:
 - 1. The City considers the proper classification for employees who perform all electrical work associated with the installation of underground fed traffic signals to be that of Electrician: Inside Wireman.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. [Section 01 60 00 - Product Requirements](#): Product transportation, storage, handling, and protection requirements.
- B. Protect, transport, and store all electrical items specified herein in accordance with manufacturer's instructions.
- C. Contractor shall deliver controller to the City of Pittsburg's Corporation Yard, 357

E. 12th Street, Pittsburg, CA 94565, for testing at least two weeks prior to installation at the Project Site

1.8 MAINTENANCE/EXTRA MATERIALS

- A. [Section 01 78 00 - Closeout Submittals](#): Extra materials and maintenance products.

PART 2 - PRODUCTS

2.1 ACCESSIBLE PEDESTRIAN SIGNALS

- A. Accessible pedestrian signals shall conform to Section 86-1.02T "Accessible Pedestrian Signals," of the Caltrans Standard Specifications.
- B. Accessible pedestrian signals shall be Polara Navigator, or approved equal.
- C. Accessible pedestrian signals shall be in accordance with Caltrans Standard Plan ES-5C.
- D. Accessible pedestrian signals shall be installed on the crosswalk side of the standard unless otherwise specified.
- E. Accessible pedestrian signals shall be installed near transit stations, or as directed by the City, with Braille signage.

2.2 TRAFFIC SIGNAL STANDARDS, PEDESTALS, AND POSTS

- A. Standards for traffic signals and flashing beacons, pedestals for cabinets, and posts for pedestrian push buttons shall conform to Section 56-3 of the Caltrans Standard Specifications, and with Caltrans Standard Plans ES-7A through ES-7O.
- B. Anchor bolts shall be of the type and size as shown on the plans. Anchor bolts shall conform to the specifications of ASTM A307, and shall be provided with 2 nuts and 2 washers each. Anchor bolts shall extend no less than ¼ inch and no greater than 1-¼ inch beyond the face on the nut. Anchor bolts shall not be cut.
- C. Anchor bolts, nuts, and washers shall be galvanized by the hot-dipped process conforming to ASTM A153, or cadmium plated with Type NS coating conforming to ASTM A165.
- D. All nuts shall be symmetrically formed with the hole centered and at right angles to the face, tapped to fit a corresponding thread so that nut can be run the entire length of the thread by the fingers without undue forcing, and without noticeable play or rocking.

2.3 FOUNDATIONS

- A. All concrete work related to traffic signal work shall be cast in place.
- B. Concrete for foundations shall conform to Section 90-2 of the Caltrans Standard Specifications, "Minor Concrete," and the Technical Specifications. Concrete shall contain not less than 564 pounds of cement per cubic yard, unless noted otherwise on contract drawings.
- C. The Contractor is advised that existing pole foundations vary in size and shape. They may be as deep as 9 ft and as wide as 5 ft. There may be existing conduits embedded in the foundation. If the pole removal is specified, the Contractor shall remove pole foundation to 5 ft or deeper as required to accommodate the new pole foundation and fill the cavity with slurry.
- D. In unpaved areas, a 4-inch-thick Portland cement concrete slab shall be constructed in front of each controller cabinet. The slab shall extend the full width of the cabinet foundation and extend out 3 feet from the face of said foundation.

2.4 CONDUCTOR AND WIRE

- A. Copper wire shall conform to the applicable portions of ASTM B3 and B8. Wire sizes shall be based on American Wire Gauge (AWG).
- B. Conductors for series street lighting systems shall be No. 8 AWG solid copper wire insulated with 0.110-inch thickness Polyethylene insulation. Standard S-61-402 of Insulated Power Cable City Association, and designated for operation at 5,000 volts.
- C. Where isolating transformers or ballasts are used, the secondary conductors from transformer to luminaire shall be insulated NO. 10 AWG solid copper wire. Multiple circuit conductors shall be of a size indicated on the plans. Insulation for such conductors shall be rated and UL approved for 600-volt operation, and shall be standard THHN Type. Grounding conductors shall be stranded soft drawn bare copper of the size indicated on the drawings. Insulated ground wires shall be permitted in raceways and shall be THHN Type with green insulating jacket.

2.5 RECTANGULAR RAPID FLASHING BEACON(RRFB)

- A. Each Rectangular Rapid Flashing Beacon (RRFB) shall consist of a self-contained solar engine that houses the charge controller, flash controller, on-board user interface, wireless communications, batteries, and solar panel. Each RRFB shall include either one or two light bars. The RRFB shall conform to all provisions of the MUTCD, Interim Approval IA-21 including WW+S flash pattern. The RRFB shall be pre-wired to the maximum extent possible

MECHANICAL SPECIFICATIONS

- a. The solar engine shall be constructed from aluminum with an integrated solar panel. All batteries and electronics shall be mounted in the solar engine, with no external control cabinet or battery cabinet required.
- b. The solar engine shall not exceed 15" in height from bottom of adapter

fitting to top of solar panel. The depth of the solar engine shall not exceed 4”.

- c. The overall weight of the solar engine assembly (including two batteries but not including light bars or pushbutton) shall not exceed 20 lbs. (9.1 kg).
- d. The solar engine shall be supplied with a fixed tilt angle of 45 degrees and shall be able to be oriented toward the equator with no additional mounting hardware.
- e. Access to the interior of the solar engine shall be provided by a lid that is hinged on the bottom edge and is fitted with a foam gasket. The lid shall have a lockable latch.
- f. The solar engine shall be vented to provide cooling of the battery and electronic system. The vents shall be screened to prevent ingress by insects and debris.
- g. Fasteners shall be stainless steel.

LIGHT BARS

- a. The light bars shall be current-driven LED strings without active electronics. The LEDs shall be driven by pulse-width modulated fixed current.
- b. The light bar housing shall be constructed from aluminum and shall have the approximate dimensions: 24” L x 1.5” D x 4.5” H (61.0 cm L x 3.8 cm D x 11.4 cm H).
- c. Each light bar shall conform to all provisions of the MUTCD and FHWA requirements.
- d. Each of the two modules in a light bar shall have 8 LEDs and shall be purpose-built by the manufacturer of the RRFB including the optics. The optics shall be premium, UV-resistant polycarbonate.
- e. Each end of a light bar shall include a side-emitting pedestrian confirmation light composed of a single LED. Users shall have the option of using both confirmation lights for median applications, or covering one confirmation light with an included sticker for side-of-road applications.
- f. The light bar shall be mounted to the post or pole using a separate bracket assembly to facilitate mounting two light bars back-to-back (bi-directional) and to allow the light bar(s) to rotate horizontally for aiming.
- g. The light bar bracket shall be constructed from galvanized or stainless steel and shall have both banding and bolting mounting options and shall be able to be mounted to all specified pole types.
- h. The light bar assembly shall open for access to the wiring connections for the LED modules. LED modules shall be rated to NEMA 3R.
- i. Light bar wiring harnesses shall be included.

- j. Fasteners shall be stainless steel.

MOUNTING

- a. Mounting adapter hardware for the RRFB shall be available for the following configurations:
 1. 2" - 2.5" Perforated Square Pole Mount
 2. 3/8" - 2 7/8" Diameter Round Post Mount
 3. 4" - 4.5" Diameter Round Post Mount
 4. Side-of-Pole Mount
 5. Wooden Pole
- b. Mounting configurations shall not require specialized tools.

CONFIGURATION

- a. The solar engine shall house an auto-scrolling LED on-board user interface that provides on-site configuration adjustment, system status and fault notification.
- b. The user interface shall provide a display of four (4) alphanumeric characters and three (3) control buttons to navigate and change settings and activate functions.
- c. When editing the configuration, the user interface will flash the display indicating it is ready to accept editing and will flash the display rapidly 3 times to indicate the setting change has been accepted.
- d. The flash duration shall be adjustable in-the-field from 5 to 60 seconds in one second increments, 60 to 1,200 seconds in 60-second steps, and 3,600 seconds. Default flash duration shall be 20 seconds.
- e. The flash rate shall be the wig-wag plus simultaneous (WW+S) providing 75 flashing sequences per minute. The flash rate of each individual RRFB indication, as applied over the full flashing sequence, shall not be between 5 and 30 flashes per second to avoid frequencies that might cause seizures.
- f. The system shall provide configurable nighttime intensity settings ranging from 10% to 100% of daytime intensity.
- g. The system shall be capable of enabling or disabling ambient brightness auto-adjustment. This feature allows the system to provide optimal output brightness in relation to ambient light levels while always maintaining adherence to SAE J595 Class I specifications. If enabled, the ambient brightness auto-adjustment shall adjust output to a range between 50% and 100% of daytime intensity.
- h. The user interface shall provide viewing and/or programming access for the following:

1. Activation duration (5 to 60, 60 to 1200, or 3600 seconds)
2. Digital output that is active during the flashing cycle that allows the control of external devices such as crosswalk illumination. Digital output shall be configurable for night operation only or operation day or night.
3. Radio channel (choice of 1 to 14)
4. Radio power on/off status
5. Radio equipped status
6. Daytime intensity
7. Flash pattern
8. Night intensity setting
9. Adjustment for ambient daytime brightness
10. Self-Test / BIST (Built-In Self-Test) including the detection of shorts or open circuits in the fixture outputs
11. Battery status – general description and actual battery voltage
12. Day or night status, as determined by dedicated photosensor not solar panel output
13. Solar panel voltage
14. Automatic Light Control (ALC). If this safety feature is enabled, it allows the RRFB to temporarily reduce the intensity of the light bars to maintain energy equilibrium. The user interface shall report the amount of dimming being applied in the range of 10% to 100%.
15. Daily activations averaged over 90 days
16. Pushbutton detection
17. Firmware version number

- i. Activation duration, night intensity setting and adjustment for ambient daytime brightness shall be automatically broadcast to all RRFBs in the system when changed in one RRFB.

SOLAR PANEL SYSTEM

- a. The solar engine shall include one 18V nominal solar panel rated at 15 watts with bypass diode. Nominal voltage of the RRFB shall be 12 volts. The solar panel shall be no larger than the footprint of the solar engine enclosure.
- b. Electrical connections on the back of the solar panel shall be contained with an enclosure that prevents accidental contact with either of the power leads.
- c. The solar charging system shall use maximum power point tracking (MPPT).

BATTERY SYSTEM

- a. The solar engine shall house two 7 amp-hour 12-volt nominal sealed valve-regulated AGM lead-acid maintenance-free batteries. Each battery shall be equipped with a fast-acting 7A cartridge fuse on the positive lead.

- b. The battery charging system shall be 3-stage and incorporate temperature-compensation to prevent battery overcharging in hot weather.
- c. Batteries, in conjunction with recommended RRFB performance, shall be designed for a demonstrable service life of 5 years.
- d. The operating temperature range of the battery shall be -40° to 140°F (-40° to 60°C).
- e. Batteries shall have quick connections to facilitate installation and be readily available from multiple suppliers and non-proprietary.
- f. Batteries shall be supported by rubber bumpers and be secured in place with straps.

OPERATIONAL SPECIFICATONS

- a. The RRFB shall meet the minimum photometric specifications of the Society of Automotive Engineers (SAE) standard J595 Class I dated January 2005. A photometric report by a certified third-party testing laboratory shall be provided to demonstrate compliance with J595.
- b. The color of the yellow light bar indications shall meet the specifications of SAE standard J578 (Color Specification) dated December 2006.
- c. The RRFB system shall have the capacity to meet a minimum array-to-load (ALR) of 1.2 while meeting the specified daily activations and flash duration year-round using the applicable peak sun hours insolation available at the installation location. Refer Solar Simulations for details on insolation data sources.
- d. The controller shall be able to support up to 1.4 amps combined current through the RRFB fixtures simultaneously.
- e. The system shall use a dedicated light sensor to detect night and day states and apply any optionally enabled intensity adjustments.

RADIO SYSTEM

- a. The radio system shall operate at 2.4GHz.
- b. Upon detection of a pushbutton press or touchless activation, an RRFB will broadcast an activation to all other nearby RRFBs sharing the same channel.
- c. The RRFB shall have the capability to activate other RRFBs by wireless communications within 1,000 feet (304 meters).
- d. The RRFB shall have a minimum of 14 unique channels that can be configured on-site to avoid inadvertent activation of nearby systems.

- e. The antenna shall be a low-profile “button” shape that cannot be bent or broken by vandals.

ACTIVATIONS

- a. The system shall be capable of activation by pedestrian pushbutton with voice message. The pushbutton shall be equipped with an integrated touchless activation radar module.
- b. The pedestrian pushbutton shall be ADA compliant and have these accessibility features:
 - 1. Activation area of 2” minimum across in at least one direction
 - 2. Shall be operable with a closed fist
 - 3. Shall be operated with a maximum of 3.5lbs (15.5N)
 - 4. Shall have a visual contrast with the body background of at least 70 percent
 - 5. Voice message with the MUTCD IA-21 approved message “Yellow lights are flashing”, spoken twice by default
 - 6. Visible indicator for button press confirmation
 - 7. Audible locator tone
 - 8. Tactile directional arrow
- c. The pushbutton touchless activation radar module shall contain these features:
 - 1. Touchless detection can be enabled or disabled
 - 2. Adjustable detection range, between 1 – 20”
 - 3. Adjustable minimum “wave” presence time for activation to occur, between 0 – 500ms
- d. A solar simulation shall be provided to verify the pushbutton with touchless activation and voice message load can be supported by the RRFB for reliable year-round operation. The pushbutton shall be self-contained with no external controller. The pushbutton shall have wireless Bluetooth communication for changing volume, touchless activation parameters, and other settings via companion smartphone application.
- e. All RRFBs in the system shall initiate activation simultaneously within 150ms of activation.
- f. If an additional activation occurs while the system is activated, the flash duration shall reset. For example, with the flash duration set to 20 seconds, if an additional activation occurs after the RRFB has been activated for 15 seconds the RRFB will continue for an additional 20 seconds, or 35 seconds in total.
- g. If the RRFB has ceased its flashing cycle, any subsequent activation shall activate the RRFB immediately regardless of how recently the RRFB ceased operation.

- h. Pushbutton wiring harnesses shall be included.

SOLAR SIMULATIONS

- a. Detailed solar simulations shall be provided as evidence that the RRFB is capable of the claimed performance at a specific location. Solar simulations shall be composed of three calculations: Energy Balance, Array-to-Load Ratio (ALR), and Autonomy. The manufacturer or bidder shall provide a detailed analysis of these three calculations in an "Energy Balance Report" (EBR).
- b. Monthly average sunlight (insolation), night length and temperature data for a specific, declared location shall be from recognized public sources such as the NASA Atmospheric Sciences Data Center. All sources shall be cited exactly and accessible online without cost to allow verification of the data.

ENERGY BALANCE

- a. During a normal 24-hour cycle of operation, an RRFB will take energy in from the sun and consume energy through the flashing of the light bars, radio communication, and general quiescent power draw. Energy Balance refers to the evaluation of these energy values to determine overall system sustainability and resistance to variances in sunlight and activation load.
- b. Energy Balance compares Energy-In and Energy-Out. Calculations shall be performed for the "worst month" of the year where worst month is determined by the lowest value of Energy-In divided by Energy-Out.

ENERGY-IN

- a. Energy-In is the total amount of sunlight energy in watt-hours available to the RRFB over a 24-hour period. Energy-In is available to operate the RRFB, charge the batteries, or both. Energy-In shall be determined as follows:
- b. $\text{Insolation} \times \text{panel wattage} \times \text{shading} \times \text{charging efficiency} \times \text{battery charge acceptance}$
- c. The energy from the solar panel shall be based on available solar radiation at the installation location for the panel's inclination angle. The solar radiation (insolation) values used shall be for the worst-case month of the calendar year.
- d. Shading from nearby trees, buildings, or other structures unique to a particular location are to be factored-in and the calculations shall clearly show and justify the de-rating of the solar panel energy input. A photograph showing the sun's path and obstructions it encounters shall

- e. Batteries shall be returned to full charge by sunset at the end of each day.

ENERGY-OUT

- a. Energy-Out is the total amount of energy in watt-hours consumed by the RRFB in a 24-hour period of normal operation.
- b. Energy-Out is the sum of quiescent and operating loads, measured in watt-hours, in all circuitry over 24 hours with an operating capacity of 300 20-second activations, including:
 - 1. Controller quiescent draw (daytime and between flashes).
 - 2. Wireless quiescent draw calculated over 24 hours.
 - 3. Operating load of pushbutton at rated operating capacity per activation (where applicable).
 - 4. Operating load of light bars including pedestrian indicators at rated intensity per activation. The number of light bars and their electrical load details (voltage, current and power when lit) shall be clearly indicated.
 - 5. Energy adjustments due to LED drive circuit efficiency.
 - 6. The simulations shall clearly detail the flash pattern being used and calculate the duty cycle of the pattern.
 - 7. Calculations shall assume the ratio of day to night activations is 9:1.

ALR (Array-to-Load Ratio)

- a. System Array-to-Load (ALR) ratio shall be calculated as:
- b. Daily Available Energy-In divided by daily Energy-Out, as defined above
- c. Solar simulations shall be calculated demonstrating a minimum Array-to-Load (ALR) ratio of 1.2:1 (1.2).

AUTONOMY

- a. Autonomy is the number of days that the RRFB can continue to operate normally in the absence of any solar charging. Autonomy shall be calculated as follows:
- b. (Nominal battery capacity de-rated for temperature minus battery capacity unavailable due to Low Voltage Disconnect) divided by (daily total energy consumption at the specified number and duration of activations)
- c. RRFB autonomy shall be determined based on regional requirements – at a minimum of 7 consecutive days.

- a. The RRFB solar engine and light bars shall be rated to a minimum of NEMA 3R.

PACKAGING

- a. Packaging shall consist of only recyclable corrugated cardboard and soft plastic bags.

QUALIFICATIONS

- a. The RRFB shall be FCC certified to comply with all 47 CFR FCC Part 15 Subpart B Emission requirements.
- b. The RRFB shall be manufactured in the USA and shall be Buy American compliant.
- c. Manufacturer shall provide a 5-year Limited Warranty, with the exception of the batteries which shall be covered by a 1-year warranty.
- d. The Manufacturer shall be ISO 9001 certified.
- e. Full compensation for conforming to the requirements of this section shall be considered as included in the price bid for various items of work and no additional compensation shall be allowed.

PART 3 - EXECUTION

3.1 MAINTAINING EXISTING AND TEMPORARY ELECTRICAL SYSTEMS

- A. Existing electrical systems, or temporary replacements thereof, shall be maintained in effective operation by the Contractor during the progress of the work. The Contractor shall notify the Project Manager at least two working days prior to performing work on existing systems.
- B. Contractor shall provide flagmen where necessary to handle traffic safely.
- C. The Contractor shall temporarily relocate existing City-owned equipment if the present location of equipment conflicts with an installation of this contract.
- D. The Contractor shall be completely responsible for the maintenance and continuity of operation of any temporary electrical facility installed by the Contractor.
- E. Disconnection of any existing or temporary streetlights shall not be permitted until the new equipment has been tested and properly adjusted.
- F. The cost of electrical energy for any temporary facility will be borne by the City

but the Contractor shall bear all costs of any temporary service connections.

3.2 EXCAVATION AND BACKFILL

- A. The excavations required for the installation of conduit, foundations and other equipment shall be performed in such a manner as to cause the least possible damage to the streets, sidewalks and other improvements. The trenches shall not be excavated wider than necessary for the proper installation of the electrical equipment or foundations. Excavating shall not be performed until just prior to installation of equipment. The material from the excavation, shall be shall be placed in a location to cause the least obstruction to surface drainage and vehicular and pedestrian traffic. Refer to [Section 31 23 16 – Utility Trenching](#).
- B. Where excavations are required in parkways and lawns, existing sod shall be removed and preserved by the Contractor. After backfilling, the sod shall be replaced and the entire area restored to original grade and condition or better.
- C. Where excavations are required in concrete sidewalk, cuts and joints shall conform with the applicable provisions regarding concrete.
- D. After backfilling, excavations shall be kept well filled and maintained in a smooth and well-drained condition until permanent repairs are completed.
- E. At the end of each day, and at all other times when construction operations are suspended, all equipment, material and debris shall be removed from that portion of the right of way open for vehicular and pedestrian traffic. Barricades shall be erected at all excavations not backfilled or finished to final grade. Such shall conform with OSHA requirements.
- F. All excavations, including those resulting from removal of existing equipment as specified or on the plans, shall be backfilled and the surface restored to match existing improvements in conformance with the applicable requirements concerning such work. The work in the street or highway shall be performed in such a manner that not more than one lane of traffic is restricted in either direction at any time, unless approved by the City.

3.3 FOUNDATION CONSTRUCTION

- A. All work shall conform to line elevation and grade as shown on the plans required by the utility or as established by the City.
- B. The foundations shall be constructed in a single placement of concrete of the class specified. The bottom of the foundations shall rest securely on firm, undisturbed ground. When a firm footing cannot be obtained at the depth shown on the plans, or where the foundation cannot be constructed to standard dimensions because of an obstruction, the foundation shall be installed as directed by the City.
- C. Where forms are required because of soil conditions or grade, they shall be true to line and grade, firmly braced and secured in place, and shall not be removed

until the concrete has set.

- D. Foundations shall cure for 7 days before installing any equipment.
- E. Wherever the edge of a concrete foundation extends within 18 inches of any existing concrete improvement, a concrete slab with a minimum thickness of 4 inches shall be extended to meet such improvement.
- F. The foundation cap shall be of similar color, finish and material as the adjacent sidewalk. It shall be a minimum of 4 inches thick and shall be placed after the standard is set in final position.
- G. All anchor bolts, nuts and washers, including those required for existing standards to be relocated, shall be furnished by the Contractor.

3.4 TRAFFIC SIGNAL POLE INSTALLATION

- A. Standards, poles, pedestals, and posts shall be installed in accordance with Caltrans Standard Specification 87-1.03J.
- B. Plumbing of standards shall be accomplished by adjusting the nuts and the anchor bolts before the foundation cap is placed. Shims or other similar devices for plumbing or raking will not be permitted. After plumbing the standard, anchor bolts shall be cut off 1/4 inch above the nuts and the exposed surfaces shall be repaired with cold galvanizing paint.
- C. Holes left in the shafts of existing standards due to removal of equipment, shall be repaired by either welding a suitable disc, grinding smooth, and painting as provided for repairing damaged galvanized surfaces elsewhere specified or grouting to match existing texture and color.

3.5 WIRING

- A. Wiring shall be done in conformance with all applicable Regulations and Codes and the requirements herein.
- B. Wiring shall be installed in accordance with Caltrans Standard Specification 87-1.03F "Conductors and Cable Installation".
- C. The Contractor shall investigate and conform the installation connections to any utility services, shall meet the specifications of the utility agency involved. In case of conflict, the utility specifications shall control and the Contractor shall comply in all respects at no additional cost to the City.
- D. Connectors and terminals for use with aluminum utility power service conductors shall be aluminum and shall be greased with an approved inhibitor.
- E. Where low-voltage conductors are run in standards containing high-voltage conductors, either the low-voltage or the high-voltage conductors shall be encased in flexible or rigid metallic conduit, to a point where the two types of conductors are no longer in the same raceway.

- F. Conductors shall be pulled by hand. Winches or other power-actuated pulling equipment shall not be used. Only approved lubricants may be used in placing conductors in conduit.
- G. Splices, where allowed, shall be made only in pull boxes and standard bases. Conductors shall be joined by the use of a connector approved by the City. The splice shall be capable of satisfactory operation under continuous submersion in water.
- H. Conductor insulation shall be well penciled, trimmed to conical shape, and roughened before applying splice insulation. Splice insulation shall consist of layers of vinyl chloride electrical insulating type, conforming to ASTM D2301, Type I, applied to a thickness equal to and well lapped over the original insulation.
- I. Small permanent identification bands shall be marked as specified. The bands shall be securely attached to conductors in pull boxes and near the termination of each conductor. Where circuit and phase are clearly indicated by conductor insulation, bands need not be used. Permanent identification bands shall be embossed, 6 mil oil resistant polyvinyl chloride tape with pressure-sensitive backing. Tape shall be of a type such that symbols contrast with the background color.

3.6 BONDING AND GROUNDING

- A. Metallic cable sheaths, metallic conduit, non-metallic conduit grounding wire, ballast and transformer cases, service equipment, sign switches, anchor bolts, end metal standards that form a continuous system shall be effectively grounded. Bonding and grounding jumpers shall be copper wire or copper strap of the same cross-sectional area as No. 8 AWG for all systems, except where noted herein.
- B. Grounding of metallic conduit, service equipment and neutral conductor at service points shall be accomplished as required by the applicable Code and the serving utility, except that grounding conductors shall be No. 6 AWG copper wire.
- C. For bonding purposes in all non-metallic type conduit, a bare No. 8 AWG copper wire shall be run continuously in all circuits.
- D. Bonding of standards shall be accomplished by means of a No. 8 AWG bonding wire attached from a grounding bushing to a foundation bolt or to a 3/16 inch, or larger, brass or bronze belt installed in the lower portion of the standard.
- E. Bonding of metallic conduit in non-metallic pull boxes shall be by means of copper strap or galvanized grounding bushings and bonding jumpers.
- F. The metallic conduit or bonding conductor system shall be securely grounded, at intervals not to exceed 500 feet, to one of the following:
 - 1. A 1-inch galvanized pipe driven to a depth of 8 feet and having its upper end not more than 3 inches above the conduit, or

2. A minimum 1/2-inch by 8-foot copper weld rod driven to a depth of 7 feet 9 inches. On wood poles, all equipment mounted less than 10 feet above ground surface shall be grounded.

3.7 PAINTING OF WORK FURNISHED AND INSTALLED OR WORKED ON UNDER THIS CONTRACT

- A. All electrical equipment furnished and installed by the Contractor shall not be painted unless otherwise noted on the plans or in these specifications. If electrical equipment is specified to be painted in the plans or in these specifications, the equipment shall be factory painted.
- B. All painted equipment which has been relocated shall be repainted as directed by the City. All paint used on the job site shall be provided in the original container identifying the grade, trade name, number and manufacturer, and shall conform to the requirements of specifications on painting, or as directed by the City.
- C. All paint shall be applied evenly and smoothly by skilled craftsmen by either hand brushing or approved spraying equipment, allowing no surplus to accumulate, except that no spraying shall be done at the job site. The work shall be done in a neat and workmanlike manner, and the use of brushes for the application of paint shall be required when paint spraying proves to be unsatisfactory or otherwise objectionable.
- D. The thickness of each paint coat (two required) shall be limited to that which will result in uniform drying throughout the paint film. Skips, holes, thin areas, or other deficiencies in any one coat of paint shall be corrected before the succeeding coat is applied.
- E. The final coat of paint shall present a sags or excessive brush marks, smooth surface, uniform in color, free of runs.

3.8 MAINTENANCE, RELOCATION, AND REMOVAL OF EXISTING TRAFFIC CONTROL, STREET NAME, AND OTHER CITY SIGNS

- A. Before commencing any work, the contractor shall submit completed Sign Inventory Forms as part of the Traffic Control Plan submittal.
- B. The Contractor shall temporarily relocate all traffic control, street name, and other City signs, as required for the prosecution of the work and to prevent interference with traffic signal installations, and shall satisfactorily maintain such signs in place at all times. The contractor shall similarly relocate, or remove and salvage as City property, the standards for such signs. The contractor shall salvage standards in their entirety, and remove any concrete therefrom.
- C. The temporary relocation of each STOP or other traffic regulatory sign shall be done immediately upon its removal, and to a locations as close as possible to the original position of such sign, or where directed by the City. The contractor shall

remove, and salvage as City property, existing "STOP" or other signs superseded by traffic signals installed by the contractor, immediately upon being notified by the City that such signals will remain in operation.

3.9 INSPECTION/TESTING

A. Prior to acceptance to the completed work, the Contractor shall cause the following tests to be made on all electrical circuits, in the presence of the City.

1. Each circuit shall be tested for continuity.
2. Each circuit shall be tested for unintentional ground.
3. A megger test at 500 volts DC shall be made on each circuit between the circuit and a ground. The insulation resistance shall be not less than 10-megohms on all circuits, except for inductive loop detector circuits which shall have an insulation resistance value of not less than 100 megohms.
4. A functional test shall be made in which it is demonstrated that each and every part of the system functions as specified or intended. The test may commence only with the approval and in the presence of the City. If unsatisfactory performance of the systems develops the condition shall be corrected and the test shall be repeated until satisfactory operation are obtained. Functional tests shall not start nor turn-ons be made on a Friday, or on the day preceding a legal holiday.

Any material revealed by these tests to be faulty in any part of the installation shall be replaced or corrected by the Contractor at his expense in a manner permitted by the City, and the same test shall be repeated until no fault is evident.

- B. [Section 01 77 00 - Closeout Requirements](#): Final cleaning.
- C. Clean finishes and touch up damage.

3.10 PROTECTION OF FINISHED WORK

A. [Section 01 77 00 - Closeout Requirements](#): Protecting finished work.

END OF SECTION 34 41 00

SECTION 34 41 05 - TRAFFIC SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

- A. Work under this section shall consist of any permanent traffic control sign as required on the plans or in the specifications in accordance with the provisions of Section 82 "Signs and Markers" of the Department of Transportation Standard Specifications and the California Manual on Uniform Traffic Control Devices (CA MUTCD), and the following provisions.

1.2 REFERENCES

- A. Caltrans Standard Specifications (Department of Transportation)
- B. California Manual on Uniform Traffic Control Devices (CA MUTCD)
- C. California Vehicle Code (CVC)

1.3 SUBMITTALS

- A. [Section 01 33 00 - Submittal Procedures](#): Submittal procedures.
- B. Certificates of Compliance: Certificates of Compliance shall be provided for all products and materials proposed to be used under this Section.
 - 1. Sign Panels. Submit a certificate of compliance for:
 - a. Aluminum sheeting
 - b. Retroreflective sheeting - Vendors shall present proof that the type of reflective sheeting they intend to use in the manufacture of the signs has been used on highway signs located on California highways for a period of at least two (2) years and has proven entirely satisfactory.
 - c. Screened-process colors
 - d. Nonreflective, opaque, black film
 - e. Protective-overlay film
- C. Product Data: Provide manufacturers specification and literature for materials furnished.

- D. If directed by Project Manager, submit a scaled shop drawing or full-scale mock-up for any sign that does not comply with the MUTCD.
- E. Upon request, submit test samples of sign panels and materials at various stages of production. Sign panel samples must be at least 12 by 12 inches in size and include background material and legend.
- F. Upon request, within 15 days before starting sign fabrication, submit at least 3 copies of your quality control plan for sign panels. Allow 10 days for the Department's review. Do not start fabricating sign panels until the City accepts the quality control plan. The quality control plan must include:
 - 1. Identification of the person responsible for sign quality control
 - 2. Basis of acceptance for incoming raw materials at the fabrication plant
 - 3. Type, method, and frequency of quality control testing at the fabrication plant
 - 4. Types and brand names of retroreflective sheeting
 - 5. List of the retroreflective sheeting manufacturer's approved process colors, protective overlay film, and black nonreflective film, including the manufacturer's name and product name for each item
 - 6. Retroreflective sheeting manufacturer's installation and splicing instructions
 - 7. Recommended cleaning procedure for each product
 - 8. Method of packaging, transporting, and storing signs
- G. Do not submit a quality control plan for construction area signs

1.4 CLOSEOUT SUBMITTALS

- A. [Section 01 78 00 - Closeout Submittals](#): Requirements for submittals.

1.5 QUALITY ASSURANCE

- A. Perform work in accordance with the plans, Technical Specifications and as specified herein, in conformance with the applicable provisions of the Caltrans Standard Specifications, CA MUTCD, and CVC.

1.6 QUALIFICATIONS

- A. Sign manufacturer shall have experience in the type of work required and a reputation for producing satisfactory work on time.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. [Section 01 60 00 - Product Requirements](#): Product transportation, storage, handling, and protection requirements.
- B. Protect, transport, and store sign panels fabricated with screened-process colors under the retroreflective sheeting manufacturer's instructions.
- C. Transport sign panels so that the face of the panels are protected from damage and weather. Ship the panels on pallets, in crates, or in tier racks. Ship the panels vertically on edge. Do not stack the panels horizontally. Place padding and protective materials between the panels as necessary. Keep the panels dry during transit.
- D. Store sign panels in a dry environment at all times. Store the panels vertically on edge whether indoors or outdoors. Do not store the panels directly on the ground. Do not let the panels get wet during storage. In areas of high heat and humidity, store the panels in enclosed, climate-controlled trailers or containers. Store the panels indoors whenever the storage duration will exceed 30 days.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. [Section 01 60 00 - Product Requirements](#): Environmental conditions affecting products on site.

1.9 MAINTENANCE/EXTRA MATERIALS

- A. [Section 01 77 00 - Closeout Requirements](#): Extra materials and maintenance products.

PART 2 - PRODUCTS

2.1 ALUMINUM SHEETING

- A. The base metal of permanent traffic control signs shall be new sheet aluminum of alloys conforming to Caltrans Standard Specifications Section 82 "Signs and Markers". material shall be subject to inspection prior to month of installation.
- B. Aluminum sheeting for road signs shall be stamped or "etched" on the back of sign with date, month/year numerically (XX/XXXX), of installation. Except on back to back sheeted signs.
- C. The alloy and temper of aluminum sheeting must comply with ASTM B209 for the designation specified.
- D. Aluminum sheeting must be pretreated for corrosion resistance under ASTM B449. The surface of the aluminum sheeting must be cleaned, deoxidized, and coated with a light, tightly adherent chromate conversion coating free of powdery residue. The conversion coating must be Class 2 with a weight from 10 milligrams

per square foot to 35 milligrams per square foot and an average weight of 25 milligrams per square foot. After the cleaning and coating process, protect the aluminum sheeting from exposure to grease, oils, dust, and contaminants.

- E. Metal panels shall be cut to size and shape and shall be free of buckles, warp, dents, cockles, burrs, sharp edges and any other defects resulting from fabrication.
- F. The base plate for standard route markers must be die cut.

2.2 RETROREFLECTIVE SHEETING

- A. Retroreflective sheeting shall be 3M Diamond Grade or equal unless otherwise indicated on the plans. Sheeting shall meet Table 2A-3, "Minimum Maintained Retroreflectivity Levels", of the CA MUTCD
- B. The surface of the reflective sheeting shall be of a flexible, transparent plastic material and shall be smooth. The backing medium shall be of synthetic sheet resin or other suitable non-cellulosic material. The bonding adhesive shall have no staining effect and shall be mildew resistant. The sheeting shall permit cutting and color processing at temperatures of 60 to 100° F. and relative humidities of twenty (20) to eighty (80) percent. The sheeting shall be heat resistant, and permit force curing of unapplied sheeting at temperatures up to 150°F., and up to 200°F. on applied sheeting. The sheeting surface shall be solvent resistant to gasoline, naphtha, mineral spirits, turpentine and methanol.
- C. Retroreflective sheeting used for background and legend must comply with ASTM D4956 and must be on the Authorized Material List for signing and delineation materials.
- D. Type II, III, IV, VIII, IX, and XI retroreflective sheeting must have Class 1, 3, or 4 adhesive backing except Type II retroreflective sheeting may have Class 2 adhesive backing. The adhesive backing must be pressure sensitive and fungus resistant.

2.3 PROCESS COLORS AND FILM

- A. The type of material used for screened-process colors, nonreflective, opaque, black film, and protective-overlay film must be the type recommended by the retroreflective sheeting manufacturer.
- B. The fabricator must perform all patterns, layouts, and set-ups necessary for the screening process.
- C. The completed surface of the applied screened-process color must be flat and smooth.
- D. Colored retroreflective sheeting must be used for the background. Reverse-screened-process color on white retroreflective sheeting for signs with green, red, blue, and brown backgrounds may be substituted for the background color.

- E. The coefficient of retroreflection for reverse-screened-process colors used on white retroreflective sheeting must be not less than 70 percent of the coefficient of retroreflection specified in ASTM D4956 for the corresponding colored retroreflective sheeting.
- F. The legend must be black, screened-process color or nonreflective, opaque, black film.
- G. Screened-process colors and nonreflective, opaque, black film must have equivalent outdoor weatherability characteristics as the retroreflective sheeting specified in ASTM D4956. Nonreflective, opaque, black film must be vinyl or acrylic material.
- H. Cured, screened-process colors must be able to withstand removal when tested by applying the 3M Company's Scotch brand cellophane tape no. 600 or equivalent tape over the color and removing it with a single, quick motion at a 90 degree angle normal to the surface of the sign's face.

2.4 ROADSIDE SIGN POSTS

- A. Except as shown on the plans, all traffic signs shall be mounted on two (2) inches inside diameter, galvanized steel pipe at a mounting height meeting Caltrans Standard Specification and traffic code standards and as shown on the plans.
- B. Road signs placed within landscaped medians may be installed on wood posts.
- C. Mountings for roadside signs to be installed on barriers or railings must be fabricated from (1) welded or seamless steel pipe under ASTM A53/A53M, Grade B, and (2) structural steel complying with ASTM A36/A36M.
- D. Bolted connections and concrete anchorage devices must comply with Section 82-3, "Roadside Signs", of the Caltrans Standard Specifications.
- E. All metal parts for mounting roadside signs must be galvanized after fabrication.
- F. Temporary road signs may be placed on wooden posts.

2.5 ROADSIDE SIGN FASTENING HARDWARE

- A. Frame assemblies for multiple sign installations must be fabricated from structural steel complying with ASTM A36/A36M or aluminum alloy as shown. Frames fabricated from structural steel must be hot-dip galvanized after fabrication.
- B. Back braces for signs must be commercial quality, mild steel, and hot-dip galvanized after fabrication.
- C. Straps and saddle brackets for mounting sign panels on electroliers, sign structure posts, and traffic signal standards must be stainless steel under ASTM A167, Type 302 or 304. Where shown, theft-proof bolts must be stainless steel

with a chromium content of at least 16 percent and a nickel content of at least 8 percent.

- D. Except for theft-proof bolts, the lag screws, bolts, metal washers, and nuts must be commercial quality steel and hot-dip galvanized after fabrication. Fiber washers must be commercial quality.
- E. The exposed portion of the mounting hardware on the sign face, including rivets used to attach sheeting to framing members, must have a factory, or field- applied finish that matches closely the color of the background and legend where it is placed.

PART 3 - EXECUTION

3.1 REMOVAL AND RELOCATION OF EXISTING SIGNS

- A. Traffic control signs are to be removed or relocated as shown on the plans.
- B. Remove foundations to a minimum of six (6) inches below the ground line, and backfill.
- C. Existing mountings may be used; however, the Contractor shall furnish, at his expense, additional mountings necessary to complete the reinstallation, and meet current standards.
- D. Any damage to the existing traffic control sign during removal and reinstallation shall be repaired by the Contractor at his expense.

3.2 ALUMINUM SHEETING FABRICATION/PREPARATION

- A. The fabrication of all signs shall be accomplished in a uniform and workmanlike manner. The sign panels are to be cut as shown and the sign specification sheets. The dimensional tolerance of the panels shall be plus or minus one- sixteenth (1/16") inch.
- B. All possible fabrication, including shearing, cutting and punching of holes, shall be completed prior to cleaning and anodization of aluminum.
- C. The aluminum base metal shall be thoroughly cleaned and anodized as per Caltrans Standard Specifications.

3.3 RETROREFLECTIVE SHEETING APPLICATION

- A. The reflective sheeting shall be applied to the face of the sign by an approved vacuum applicator using a combination of vacuum and heat, as recommended by the reflective sheeting manufacturer. After aging for forty-eight (48) hours, the adhesive shall produce a durable bond equal to or greater than the strength of the reflective sheeting. No air pocket or bubbles shall exist between the sheeting and the base material.

- B. Repairs to damaged reflective sheeting due to poor workmanship or defective material will not be allowed, items must be replaced.
- C. Reflective sheeting screening coats shall be oven cured as recommended by the reflective sheeting manufacturer.
- D. The legend shall be of high intensity cutout reflective sheeting applied in the same manner as the reflective sheeting specified herein. The orientation of the legend must comply with the retroreflective sheeting manufacturer's instructions.
- E. For signs composed of multiple panels, the legend must be placed across joints in a way that does not affect the size, shape, spacing, and appearance of the legend on the assembled sign.
- F. There shall be no splices in the reflective sheeting on panels with a minor dimension of forty-eight (48) inches or less. On all rectangular signs with a minor dimension of more than forty-eight (48) inches, the splice shall be horizontal. No finished sign shall have more than one splice and no splice shall fall within two (2) inches of the sign edge.
- G. Unless the retroreflective sheeting manufacturer's instructions require a different method, splices in the retroreflective sheeting must overlap by a minimum of 1 inch. The retroreflective sheeting on either side of a splice must not exhibit a color difference under incident and reflected light.
- H. For formed panel signs, the retroreflective sheeting for the background and legend must be wrapped around the interior vertical edges of each panel as shown to prevent delamination.
- I. The edges of each completed reflective sheeting sign face and of all cutout letters, numbers, arrows, symbols and borders shall be sealed in a manner and with a sealing solution as recommended by the manufacturer of the reflective sheeting.
- J. All letters and designs shall be clearly cut and sharply defined, meeting Caltrans Standard Specifications.
- K. The manufacturer's identification shall be according to the Caltrans Standard Specifications unless otherwise directed by the City.
- L. Where shown, a sign with protective-overlay film must be marked at the fabrication plant with a 3/8-inch diameter dot. The dot must be placed on the lower border of the sign before applying the protective-overlay film. The fabricator must determine the application method and exact location of the dot except the dot must not be placed on the legend or near bolt holes. The dot must be black if placed on a white border and white if placed on a black border.
- M. The finished sign shall be flat within a ratio of 0.04 inches per linear foot when measured across the plane of each panel from the opposite corners, or at any location on the panel. All finished signs shall have smooth flat surfaces without defects or objectionable marks of any kind on either the front or back faces.

3.4 ROADSIDE SIGN INSTALLATION

- A. Do not reverse screen sign larger than 7 square feet/color.
- B. Do not remove a sign that is being replaced until the new sign is placed and uncovered.
- C. Establish proper elevation and orientation of all signs and structures and determine proper sign post lengths as dictated by construction slopes. Refer to Caltrans S Series Standard Drawings.
- D. Cover signs that require temporary covering with an opaque material. Secure at the rear of the sign so that the sign is not damaged. Maintain covering until covering or sign is removed.
- E. All posts shall be set in concrete a minimum of two (2) feet below existing grade level. Minimum diameter of concrete footing for posts installed outside of sidewalk shall be ten (10) inches.
- F. Signs to be located in existing sidewalk area may be placed by drilling a hole in the sidewalk one (1) inch larger than the diameter of the pole, a minimum of two (2) feet deep, fill the hole with mortar and place the pole in the hole in a plumb position. Top of pipe post should be fitted a screw cap unless a sign or other device will cap said post.

3.5 INSPECTION

- A. All materials and finished signs are subject to inspection by the City.
- B. The finished signs shall be clean and free from all router chatter marks, burrs, sharp edges, loose rivets, delaminated reflective sheeting and aluminum marks. Signs with any defects or damage that would affect their appearance or serviceability will not be acceptable.
- C. No repairs shall be made to the face sheet without the approval of the City.
- D. All signs not conforming in all respects to the requirements of these specifications will be rejected and replaced at Contractor's cost.

3.6 CLEANING

- A. [Section 01 77 00 - Closeout Requirements](#): Final cleaning.
- B. Clean finishes and touch up damage.

3.7 PROTECTION OF FINISHED WORK

- A. [Section 01 77 00 - Closeout Requirements](#): Protecting finished work.

END OF SECTION 34 41 05

Appendix A

Resolution 93-8022

BEFORE THE CITY COUNCIL OF THE CITY OF PITTSBURG

In the Matter of:

Establishing Voluntary Guidelines to)
Encourage Bidders on Public Works)
Projects to Increase the Utilization and)
Hiring of Local Contractors, Local) Res. No. 93-8022
Businesses and Members of the City's)
Minority Community)
_____)

The City Council of the City of Pittsburg DOES RESOLVE as follows:

A. The Council desires to take steps to encourage contractors on public works projects in the City to increase the utilization and hiring of local contractors, local businesses and members of the City's minority community.

B. Both historically and presently, the City has been home to a large and diverse population, including many members of minority communities. The City wishes to increase employment and business opportunities for members of the City's minority communities.

C. Many of the City's public works contracts are awarded to businesses which are not located in the City. The increased employment of City residents on projects located within the City would help to reduce traffic congestion and noise and air quality impacts.

D. Other Bay Area cities have adopted various programs or policies which are designed to heighten awareness and employment of minorities, local residents and local businesses. The adoption of a mandatory program which requires the employment of a fixed percentage of minorities, local residents and local businesses would require further study and must be supported by appropriate evidence. Additionally, findings would be required that either non-residents are a substantial cause of social and economic problems (e.g., unemployment, crime, homelessness, poverty) facing City residents or that the City itself has created disadvantages (e.g., higher business taxes, more stringent land use requirements) which have caused local businesses to suffer.

E. Rather than wait for studies to be completed and for statistical information from various governmental agencies to be compiled, the Council desires to take immediate action that will increase awareness and utilization of, and encourage employment opportunities for minorities, local residents, local businesses and suppliers within the City.

NOW, THEREFORE, the Council resolves:

Section 1. Minority Employment Guidelines

A. The Council declares that it is the policy of the City to increase awareness of the City's minority population and to encourage the employment of members of the City's minority communities.

B. Each bidder who is awarded a public works contract by the City is encouraged to use its best efforts to recruit minority candidates for employment positions. Each bidder is encouraged to employ and endeavor to maintain a minority work force of at least 20% on a craft-by-craft basis.

Section 2. Local Resident Employment Guidelines

A. The Council declares that it is the policy of the City to encourage employment of local residents.

B. Each bidder who is awarded a public works contract by the Council is encouraged to use its best efforts to recruit City residents for employment positions. Each bidder is encouraged to employ and endeavor to maintain a local City resident work force of at least 50% on a craft-by-craft basis.

Section 3. Local Business Guidelines

A. The Council declares that it is the policy of the City to promote growth and economic development for the City's local businesses and suppliers.

B. Each bidder who is awarded a public works contract by the Council is encouraged to use its best efforts to utilize local businesses and suppliers in connection with the contract. Each bidder is encouraged to allocate at least 20% of the dollar amount of the contract to the utilization of local businesses, such as in the purchase of services and supplies.

Section 4. Voluntary Program; Prohibition

A. This program is voluntary in nature and is not intended to supersede or conflict with any applicable State or Federal regulations nor any State or Federal laws pertaining to the funding of a public works project.

B. A copy of this resolution shall be provided as part of the contract documents to each bidder on a public works project conducted by the City. No City official or employee shall take

compliance with this resolution into account when making any decision concerning the letting or administration of a public works contract in the City.

Section 5. Monitoring and Reporting

Each bidder who is awarded a public works contract by the City is required to submit to the City a summary by percentages and/or dollar amount of minority, local resident, local business and local supplier participation in the contract. In its summary, each bidder is required to describe what actions, activities and efforts it used in meeting or attempting to meet the guidelines of this program and also any significant problems or difficulties it encountered in achieving the guidelines set forth above. Staff shall report findings concerning voluntary compliance with this resolution each six months. A copy of this resolution shall be integrated into or included with bid packets published by the City.

Section 6. Effective Date

This resolution shall take effect immediately upon its adoption.

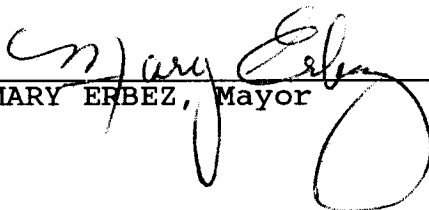
Passed and adopted on the 6th day of December, 1993, by the following vote:

AYES: Councilmembers Canciamilla, Davis, Lewis, Quesada and Mayor Erbez

NAYS: None

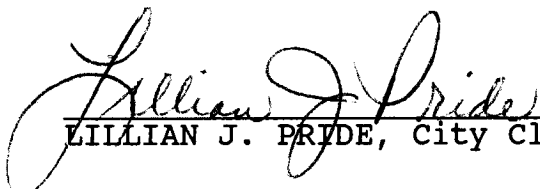
ABSTAINED: None

ABSENT: None



MARY ERBEZ, Mayor

Attest:



LILLIAN J. PRIDE, City Clerk

p\gen\local.res\c.nl.100

MICHAEL R. WOODS
SAMUEL T. CRUMP
LAURA J. ANDERSON


LAW OFFICES
MICHAEL R. WOODS
A PROFESSIONAL CORPORATION
18100 CARRIGER ROAD
SONOMA, CALIFORNIA 95476-4072
(707) 996-1776

FACSIMILE
(707) 935-0523

November 24, 1993

MEMORANDUM

TO: Mayor and Councilmembers
Chair and Board of Directors, Redevelopment Agency

FROM: Michael R. Woods, City Attorney
Laura J. Anderson 

RE: Local Employment Program

This memorandum is in response to the Council's request for information on a local contractor and minority preference program on public works contracts. Additionally, Councilman Canciamilla recently requested a resolution for Council consideration establishing a voluntary program which encourages the hiring of minorities, local residents and local small businesses in public works contracts.

A. Requirements for a Mandatory Preference Program

Before the City (or Agency) could adopt a mandatory program giving preference to local residents or local businesses in public works contracts, the Council would have to make at least one of the following findings:

- (1) non-residents are a "substantial cause" of social and economic problems (e.g. unemployment, crime, homelessness, poverty) facing city residents; or
- (2) the City has itself created disadvantages (e.g. higher business taxes, more stringent land use requirements) which cause local businesses to suffer.

The Council's findings would have to be based on substantial evidence such as statistical information, departmental studies, and testimony of city residents. The program adopted would have to be consistent with the findings, and the findings would have to be supported by appropriate evidence in the record of the Council's action. The program would have to be reasonable in light of the findings and evidence and could not favor local residents at the expense of non-residents in a way that would be disproportionate when considered against the findings and evidence.

Mayor and Councilmembers
Chair and Board of Directors
November 24, 1993
Page 2

If a mandatory program were adopted without the required findings or adequate supporting evidence, a non-resident could challenge the local preference program in court as a violation of his or her constitutional rights.

If the Council wishes to entertain a mandatory program, we suggest you direct staff to conduct a study and gather evidence concerning the findings that would have to be made, and return to the Council with a proposed program.

B. Proposed Resolution on Voluntary Program

The Council may adopt a voluntary contractor preference program without making the findings described above. The program must be truly voluntary, however; the City would not make any decision to grant a contract to a particular contractor based upon compliance with the program.

Enclosed for your consideration is a proposed resolution which recognizes increased employment of City residents and increased opportunities for local businesses are desirable for the City. The resolution encourages bidders on public works contracts to hire members of the minority community, local residents and local businesses. The guidelines set forth below are a suggestion only. The Council may wish to adjust the percentages to encourage maximum participation in the program.

The resolution will state the Council's policy that bidders promote employment opportunities for minorities, local residents and small local businesses, as follows:

(1) Minority Employment Guidelines. A bidder who is awarded a public works contract is encouraged to employ and maintain a minority work force of 20% on a craft-by-craft basis.

(2) Local Resident Employment Guidelines. A bidder who is awarded a public works contract is encouraged to employ and maintain a local resident work force of 50% on a craft-by-craft basis.

(3) Local Business Guidelines. A bidder who is awarded a public works contract is encouraged to award 20% of the total dollar amount of the contract to local small businesses through subcontracts.

If the Council wishes to adopt this voluntary program, it may do so by adopting the enclosed resolution, which would take effect immediately unless otherwise specified.

Mayor and Councilmembers
Chair and Board of Directors
November 24, 1993
Page 3

Please feel free to call if you have any questions or comments.

MRW:LJA:lr

Enclosure

cc: S. Anthony Donato, City Manager
Lillian J. Pride, Assistant City Manager/City Clerk
Nasser Shirazi, Community Development Director

pitts/general/mconpref/c.nl.100

BEFORE THE REDEVELOPMENT AGENCY OF THE CITY OF PITTSBURG

In the Matter of:

Establishing Voluntary Guidelines to)
Encourage Bidders on Public Works)
Projects to Increase the Utilization and)
Hiring of Local Contractors, Local) Res. No. 93-442
Businesses and Members of the City's)
Minority Community)
_____)

The Redevelopment Agency of the City of Pittsburg DOES RESOLVE as follows:

A. The Agency desires to take steps to encourage contractors on public works projects in the City to increase the utilization and hiring of local contractors, local businesses and members of the City's minority community.

B. Both historically and presently, the City has been home to a large and diverse population, including many members of minority communities. The City wishes to increase employment and business opportunities for members of the City's minority communities.

C. Many of the Agency's public works contracts are awarded to businesses which are not located in the City. The increased employment of City residents on projects located within the City would help to reduce traffic congestion and noise and air quality impacts.

D. Other Bay Area cities have adopted various programs or policies which are designed to heighten awareness and employment of minorities, local residents and local businesses. The adoption of a mandatory program which requires the employment of a fixed percentage of minorities, local residents and local businesses would require further study and must be supported by appropriate evidence. Additionally, findings would be required that either non-residents are a substantial cause of social and economic problems (e.g., unemployment, crime, homelessness, poverty) facing City residents or that the City itself has created disadvantages (e.g., higher business taxes, more stringent land use requirements) which have caused local businesses to suffer.

E. Rather than wait for studies to be completed and for statistical information from various governmental agencies to be compiled, the Agency desires to take immediate action that will increase awareness and utilization of, and encourage employment opportunities for minorities, local residents, local businesses and suppliers within the City.

NOW, THEREFORE, the Agency resolves:

Section 1. Minority Employment Guidelines

A. The Agency declares that it is the policy of the Agency to increase awareness of the City's minority population and to encourage the employment of members of the City's minority communities.

B. Each bidder who is awarded a public works contract by the Agency is encouraged to use its best efforts to recruit minority candidates for employment positions. Each bidder is encouraged to employ and endeavor to maintain a minority work force of at least 20% on a craft-by-craft basis.

Section 2. Local Resident Employment Guidelines

A. The Agency declares that it is the policy of the Agency to encourage employment of local residents.

B. Each bidder who is awarded a public works contract by the Agency is encouraged to use its best efforts to recruit City residents for employment positions. Each bidder is encouraged to employ and endeavor to maintain a local City resident work force of at least 50% on a craft-by-craft basis.

Section 3. Local Business Guidelines

A. The Agency declares that it is the policy of the Agency to promote growth and economic development for the City's local businesses and suppliers.

B. Each bidder who is awarded a public works contract by the Agency is encouraged to use its best efforts to utilize local businesses and suppliers in connection with the contract. Each bidder is encouraged to allocate at least 20% of the dollar amount of the contract to the utilization of local businesses, such as in the purchase of services and supplies.

Section 4. Voluntary Program; Prohibition

A. This program is voluntary in nature and is not intended to supersede or conflict with any applicable State or Federal regulations nor any State or Federal laws pertaining to the funding of a public works project.

B. A copy of this resolution shall be provided as part of the contract documents to each bidder on a public works project conducted by the Agency. No City official or employee shall take

compliance with this resolution into account when making any decision concerning the letting or administration of a public works contract by the Agency.

Section 5. Monitoring and Reporting

Each bidder who is awarded a public works contract by the Agency is required to submit to the Agency a summary by percentages and/or dollar amount of minority, local resident, local businesses and local supplier participation in the contract. In its summary, each bidder is required to describe what actions, activities and efforts it used in meeting or attempting to meet the guidelines of this program and also any significant problems or difficulties it encountered in achieving the guidelines set forth above. Staff shall report findings concerning voluntary compliance with this resolution each six months. A copy of this resolution shall be integrated into or included with bid packets published by the Agency.

Section 6. Effective Date

This resolution shall take effect immediately upon its adoption.

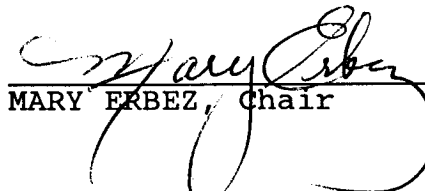
Passed and adopted on the 6th day of December, 1993, by the following vote:

AYES: Members Canciamilla, Davis, Lewis, Quesada & Chair Erbez.

NAYS: None.

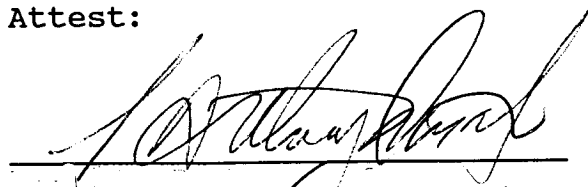
ABSTAINED: None.

ABSENT: None.



MARY ERBEZ, Chair

Attest:



S. Anthony Donato, Executive Director

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Appendix B

Temporary Traffic Control Plan Checklist

TEMPORARY TRAFFIC CONTROL PLAN (TTCP) CHECKLIST

No traffic control may be implemented on City streets without City approval.

This checklist is provided to assist developers, contractors, and special event applicants in developing acceptable Temporary Traffic Control Plans (TTCP's) for encroachments onto the City right-of-way. Please refer to the California Manual of Uniform Traffic Control Devices (MUTCD), Part 6: Temporary Traffic Control, for basic information on preparing TTCP's and typical TTCP examples (www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/ca_mutcd.htm).

Contractor/Applicant is responsible for inspecting any approved traffic detour routes to insure adequate horizontal and vertical clearances are maintained from obstructions (e.g., poles and overhanging tree limbs).

Lane Closures

- Except for emergencies or unless otherwise specified:
 - No lane closures will be allowed on weekdays from **6:00 AM to 8:30 AM**, or from **3:30 PM to 6:00 PM**.
 - Two or more lane closures and lane closures with reversible control will not be allowed on weekdays before **9:00 AM**, or after **3:00 PM**.
- The lane closure(s) must be limited in duration and area as practicable. Times and dates of closure must be stated on the approved TTCP.

Road Closures

- Full road closures must be approved by the City Engineer and may only be used when no other types of temporary traffic control are feasible for the work involved.
- Detour routes and notification plans must be submitted to City at least two weeks in advance.
- The road closure(s) must be limited in duration and area as practicable. Times and dates of closure must be stated on the approved TTCP.

Construction Activity (may not apply to Special Event Permits)

- Show the exact location of the work zone and how it is to be protected (e.g., cones, barricades, k-rail) during construction.
- Show construction schedule, work hours, and all times TTCP will be in effect.
- Include details on construction activity and equipment being used within street right-of-way. Specify how the work area will be protected at night (e.g., trench plates).
- If work is to be done in phases, submit separate TTCP's for each phase of work.
- All detour signs must be removed or covered when detour is not in effect.

Traffic Control Devices

- All traffic control signs and devices shown on the TTCP must include any applicable MUTCD sign number, dimension and description.

- A Flashing Arrow Sign/Board (FAS) ***must*** be used for ***all*** lane closures on the following streets. (Include size, panel display and exact location on the TTCP).
 - Railroad Avenue/Kirker Pass Road
 - Bailey Road
 - Somersville Road
 - Loveridge Road
 - West/East Leland Road
 - Buchanan Road
 - Power Avenue
 - Harbor Street
 - North Parkside Drive
 - Willow Pass Road
 - Pittsburg-Antioch Highway
 - California Avenue
 - Century Boulevard
 - West/East Tenth Street
- Show locations of all flaggers, channelizing devices, warning lights, flag trees, and portable barriers on the TTCP. All devices must comply with California MUTCD.
- Flaggers must have formal training in proper flagging operations.

Traffic Signal Operation and Equipment

- Include location of all traffic signals and traffic signal detection devices within the traffic control area.
- If special signal timing is required in the TTCP, specify **all** changes and their effects. This includes changing signal operations to flashing red, recall or fixed time.

Pedestrian/Bicycle Safety

- Pedestrians and bicyclists must have a safe route to walk/ride through and/or around the work area.
- Show all pedestrian/bicycle entries, detours, paths and exits on the TTCP.
- Clearly show description and location of all traffic control devices, including fences and barricades, within the pedestrian's/bicyclists safe route to walk/ride on the TTCP.

Parking Restrictions

- City approved parking restrictions must be clearly posted a minimum of 48 hours before work begins. Their implementation will be at the expense of the contractor/developer.
- All legal parking areas must be maintained. Access to legally parked vehicles' doors and storage areas must also be maintained.
- Parking restrictions must be limited in time as practicable. Restrictions may only be used when there are no other types of traffic control feasible for the work involved, or when parking demand can be reasonably accommodated.

Please contact the Traffic Engineering Division at (925) 252-4930 for any questions related to TTCP's, including closures, detours, traffic signal operations, and temporary parking restrictions.

Please allow five (5) working days for the City to review the TTCP. Once the TTCP is approved it must be available for inspection on-site at all times. City may require field changes to the TTCP to maintain public safety.

Appendix C

Construction Water Application



Construction Water Permit Fire Hydrant Water Meter

Fire Hydrant Meter #: _____ Date Issued: _____

Applicant/Company: _____ Tax ID: _____

Billing Address: _____ City/State/Zip: _____

Job Site: _____ Business License #: _____

Cell/Job Site Phone: _____ Office Phone: _____

Email Address: _____ Fax #: _____

Applicant Signature: _____ Print Name: _____

Meter Initial Reading: _____ Ccf Read by: _____
(Print Name)

Condition Upon Issuance: _____

Inspected By: _____

Date Returned: _____ Returned Reading: _____ Ccf

Condition Upon Return: _____

Inspected By: _____

Fire Hydrant Fees

(Resolution 17-13400)

	08/01/2022	01/01/2024	1/1/2025	1/1/2025	01/01/2027
Monthly Fixed Charge	\$330.00	\$340.00	\$360.00	\$380.00	\$485.00
Usage Charge	\$ 5.62 per CCF (748 gallons)	\$ 5.90 per CCF (748 gallons)	\$6.19 per CCF (748 gallons)	\$6.50 per CCF (748 gallons)	\$6.83 per CCF (748 gallons)
Deposit for Meter	\$ 1,200.00	(Refundable)			
Application Fee	\$ 35.00	(Non-refundable)			
Total Deposit	\$ 1,235.00				

Construction Water Permit Fire Hydrant Water Meter

All water to be used for construction purposes and drawn from a fire hydrant **MUST** be metered.

Picking Up a Hydrant Meter

1. Obtain a Construction Water Permit – Hydrant Meter Form from Pittsburg Water on the first floor of City Hall, 65 Civic Avenue.
2. Submit this completed form and pay fees according to the table .

Contractor Responsibilities:

1. All water to be used for construction purposes and drawn from a fire hydrant **MUST** be metered.
2. Contractor/Applicant **is responsible** to pay monthly fixed charges and a water usage charge which will be billed once a month, and after the meter is returned to Pittsburg Water. If account becomes delinquent, Public Works may request hydrant meter to be returned until account has been paid current.
3. The contractor/Applicant **is responsible** for reporting meter readings to Pittsburg Water during the **third week of every month**. **This form** and a **picture of the register** will need to be emailed to hydrants@pittsburgca.gov. If a meter reading is not provided by the **25th of each month**, a **\$37.00** verification meter reading fee will be charged to reimburse the city for the cost
4. The contractor **is responsible** to bring the hydrant meter to the Public Works Corporation Yard to have it officially read and tested every six months At this time, the condition of the meter will be checked, to determine if repairs are needed.
5. Contractor/Applicant **is responsible** for any and all damage to the meter and is required to keep the meter and register clean and free of obstructions which may affect the operation of the meter while issued to them.
6. Meters shall not be moved to another job site or taken outside city limits. Meters must be accessible to Public Works at all times.
7. Lost, stolen or severely damaged hydrant meters may result in the loss of deposit and/or additional charges to the applicant.
8. At any point Public Works could require the meter to be tested for accuracy.

PLEASE KEEP METERS INSIDE VEHICLES WHEN NOT IN USE. IF REGISTER ROLLS BACKWARDS EXTRA FEES MAY APPLY.

By signing below, I have read and understand all the rules and regulations regarding my hydrant meter.

Signature: _____

Date: _____

Appendix D

Federal Minimum Wage Rates*

Contractor to Visit website below for
current rates.

[SAM.gov](https://www.sam.gov)

"General Decision Number: CA20230018 10/20/2023

Superseded General Decision Number: CA20220018

State: California

Construction Types: Building, Heavy (Heavy and Dredging) and Highway

Counties: Alameda, Calaveras, Contra Costa, Fresno, Kings, Madera, Mariposa, Merced, Monterey, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Stanislaus and Tuolumne Counties in California.

BUILDING CONSTRUCTION PROJECTS; DREDGING PROJECTS (does not include hopper dredge work); HEAVY CONSTRUCTION PROJECTS (does not include water well drilling); HIGHWAY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed

on this wage determination,
if it is higher) for all
hours spent performing on
that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/06/2023
1	01/13/2023
2	01/20/2023
3	02/10/2023
4	02/24/2023
5	03/03/2023
6	03/10/2023
7	03/17/2023
8	03/31/2023
9	04/07/2023
10	04/14/2023
11	04/21/2023
12	06/02/2023
13	06/09/2023
14	06/23/2023
15	06/30/2023
16	07/14/2023
17	07/28/2023
18	08/11/2023
19	08/18/2023
20	08/25/2023
21	09/01/2023
22	09/08/2023
23	09/22/2023
24	09/29/2023
25	10/06/2023
26	10/20/2023

ASBE0016-004 01/01/2021

AREA 1: CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED,

MONTEREY, SAN BENITO, SAN JOAQUIN, SANTA CRUZ, STANISLAUS & TOULMNE COUNTIES

AREA 2: ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO & SANTA CLARA COUNTIES

	Rates	Fringes
Asbestos Removal worker/hazardous material handler (Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not)		
Area 1.....	\$ 30.45	10.60
Area 2.....	\$ 36.53	9.27

ASBE0016-008 02/01/2023

AREA 1: ALAMEDA, CONTRA COSTA, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA, & SANTA CRUZ

AREA 2: CALAVERAS, COLUSA, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS, & TUOLUMNE

	Rates	Fringes
Asbestos Workers/Insulator (Includes the application of all insulating materials, Protective Coverings, Coatings, and Finishes to all types of mechanical systems)		
Area 1.....	\$ 80.91	23.82
Area 2.....	\$ 62.26	23.82

BOIL0549-001 01/01/2021

AREA 1: ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO & SANTA CLARA COUNTIES

AREA 2: REMAINING COUNTIES

	Rates	Fringes
BOILERMAKER		
Area 1.....	\$ 49.62	41.27
Area 2.....	\$ 45.60	38.99

BRCA0003-001 08/01/2022

	Rates	Fringes
MARBLE FINISHER.....	\$ 39.20	18.31

BRCA0003-003 08/01/2022

	Rates	Fringes
MARBLE MASON.....	\$ 56.98	28.54

BRCA0003-005 05/01/2022

	Rates	Fringes
BRICKLAYER		
(1) Fresno, Kings, Madera, Mariposa, Merced....	\$ 47.88	23.29
(7) San Francisco, San Mateo.....	\$ 53.69	26.03
(8) Alameda, Contra Costa, San Benito, Santa Clara.....	\$ 53.61	23.81
(9) Calaveras, San Joaquin, Stanislaus, Toulumne.....	\$ 45.12	21.55
(16) Monterey, Santa Cruz...	\$ 50.78	25.42

BRCA0003-008 07/01/2022

	Rates	Fringes
TERRAZZO FINISHER.....	\$ 41.93	18.98
TERRAZZO WORKER/SETTER.....	\$ 56.84	27.53

BRCA0003-011 04/01/2022

AREA 1: Alameda, Contra Costa, Monterey, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz

AREA 2: Calaveras, San Joaquin, Stanislaus, Tuolumne

AREA 3: Fresno, Kings, Madera, Mariposa, Merced

	Rates	Fringes
TILE FINISHER		
Area 1.....	\$ 33.86	17.54
Area 2.....	\$ 30.90	17.67
Area 3.....	\$ 29.89	16.80
Tile Layer		
Area 1.....	\$ 55.41	20.50
Area 2.....	\$ 50.66	20.40
Area 3.....	\$ 45.76	19.92

 CARP0022-001 07/01/2023

San Francisco County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 60.39	33.52
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 60.54	33.52
Journeyman Carpenter.....	\$ 60.39	33.52
Millwright.....	\$ 60.49	35.11

 CARP0034-001 07/01/2021

	Rates	Fringes
Diver		
Assistant Tender, ROV Tender/Technician.....	\$ 54.10	34.69
Diver standby.....	\$ 60.51	34.69
Diver Tender.....	\$ 59.51	34.69
Diver wet.....	\$ 103.62	34.69
Manifold Operator (mixed gas).....	\$ 64.51	34.69
Manifold Operator (Standby).\$	59.51	34.69

DEPTH PAY (Surface Diving):

050 to 100 ft	\$2.00 per foot
101 to 150 ft	\$3.00 per foot
151 to 220 ft	\$4.00 per foot
221 ft.-deeper	\$5.00 per foot

SATURATION DIVING:

The standby rate shall apply until saturation starts. The saturation diving rate applies when divers are under pressure continuously until work task and decompression are complete. The diver rate shall be paid for all saturation hours.

DIVING IN ENCLOSURES:

Where it is necessary for Divers to enter pipes or tunnels, or other enclosures where there is no vertical ascent, the following premium shall be paid: Distance traveled from entrance 26 feet to 300 feet: \$1.00 per foot. When it is necessary for a diver to enter any pipe, tunnel or other enclosure less than 48" in height, the premium will be \$1.00 per foot.

WORK IN COMBINATION OF CLASSIFICATIONS:

Employees working in any combination of classifications within the diving crew (except dive supervisor) in a shift are paid in the classification with the highest rate for that shift.

CARP0034-003 07/01/2021

	Rates	Fringes
Piledriver.....	\$ 54.10	34.69

CARP0035-007 07/01/2020

AREA 1: Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara counties

AREA 2: Monterey, San Benito, Santa Cruz Counties

AREA 3: Calaveras, Fresno, Kings, Madera, Mariposa, Merced, San Joaquin, Stanislaus, Tuolumne Counties

	Rates	Fringes
Modular Furniture Installer		
Area 1		
Installer.....	\$ 28.76	22.53
Lead Installer.....	\$ 32.21	23.03
Master Installer.....	\$ 36.43	23.03
Area 2		
Installer.....	\$ 26.11	22.53
Lead Installer.....	\$ 29.08	23.03

Master Installer.....	\$ 32.71	23.03
Area 3		
Installer.....	\$ 25.16	22.53
Lead Installer.....	\$ 27.96	23.03
Master Installer.....	\$ 31.38	23.03

 CARP0035-008 08/01/2020

AREA 1: Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara counties

AREA 2: Monterey, San Benito, Santa Cruz Counties

AREA 3: San Joaquin

AREA 4: Calaveras, Fresno, Kings, Madera, Mariposa, Merced, Stanislaus, Tuolumne Counties

	Rates	Fringes
Drywall Installers/Lathers:		
Area 1.....	\$ 52.65	31.26
Area 2.....	\$ 46.77	31.26
Area 3.....	\$ 47.27	31.26
Area 4.....	\$ 45.92	31.26
Drywall Stocker/Scrapper		
Area 1.....	\$ 26.33	18.22
Area 2.....	\$ 23.39	18.22
Area 3.....	\$ 23.64	18.22
Area 4.....	\$ 22.97	18.22

 CARP0152-001 07/01/2020

Contra Costa County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway		
Carpenter.....	\$ 52.65	30.82
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 52.80	30.82
Journeyman Carpenter.....	\$ 52.65	30.82
Millwright.....	\$ 52.75	32.41

 CARP0152-002 07/01/2020

San Joaquin County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 52.65	30.82
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 46.92	30.82
Journeyman Carpenter.....	\$ 46.77	30.82
Millwright.....	\$ 49.27	32.41

 CARP0152-004 07/01/2020

Calaveras, Mariposa, Merced, Stanislaus and Tuolumne Counties

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 52.65	30.82
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 45.57	30.82
Journeyman Carpenter.....	\$ 45.42	30.82
Millwright.....	\$ 47.92	32.41

 CARP0217-001 07/01/2023

San Mateo County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 60.39	33.52
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 60.54	33.52
Journeyman Carpenter.....	\$ 60.39	33.52
Millwright.....	\$ 60.49	35.11

CARP0405-001 07/01/2021

Santa Clara County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 55.00	31.49
Journeyman Carpenter.....	\$ 54.85	31.49
Millwright.....	\$ 54.95	33.08

CARP0405-002 07/01/2021

San Benito County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 49.12	31.49
Journeyman Carpenter.....	\$ 48.97	31.49
Millwright.....	\$ 51.47	33.08

CARP0505-001 07/01/2021

Santa Cruz County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 49.12	31.49
Journeyman Carpenter.....	\$ 48.97	31.49
Millwright.....	\$ 51.47	33.08

CARP0605-001 07/01/2021

Monterey County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 49.12	31.49
Journeyman Carpenter.....	\$ 48.97	31.49
Millwright.....	\$ 51.47	33.08

CARP0701-001 07/01/2021

Fresno and Madera Counties

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 47.77	31.49
Journeyman Carpenter.....	\$ 47.62	31.49
Millwright.....	\$ 50.12	33.08

CARP0713-001 07/01/2021

Alameda County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 55.00	31.49
Journeyman Carpenter.....	\$ 54.85	31.49

Millwright.....	\$ 54.95	33.08
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 CARP1109-001 07/01/2021

Kings County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 47.77	31.49
Journeyman Carpenter.....	\$ 47.62	31.49
Millwright.....	\$ 50.12	33.08

 ELEC0006-004 12/01/2021

SAN FRANCISCO COUNTY

	Rates	Fringes
Sound & Communications		
Installer.....	\$ 48.43	3%+23.15
Technician.....	\$ 55.69	3%+23.15

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs for which the conductors for the fire alarm system are installed in conduit; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

ELEC0006-007 06/01/2023

SAN FRANCISCO COUNTY

	Rates	Fringes
ELECTRICIAN.....	\$ 88.25	3%+42.315

ELEC0100-002 09/01/2023

FRESNO, KINGS, AND MADERA COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 44.50	28.09

ELEC0100-005 12/01/2022

FRESNO, KINGS, MADERA

	Rates	Fringes
Communications System		
Installer.....	\$ 38.24	23.80
Technician.....	\$ 47.80	24.08

SCOPE OF WORK

Includes the installation testing, service and maintenance, of the following systems which utilize the transmission and/or transference of voice, sound, vision and digital for commercial, education, security and entertainment purposes for the following: TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call system, radio page, school intercom and sound, burglar alarms, and low voltage master clock systems.

A. SOUND AND VOICE TRANSMISSION/TRANSFERENCE SYSTEMS

Background foreground music, Intercom and telephone interconnect systems, Telephone systems Nurse call systems, Radio page systems, School intercom and sound systems, Burglar alarm systems, Low voltage, master clock systems, Multi-media/multiplex systems, Sound and musical entertainment systems, RF systems, Antennas and Wave Guide,

B. FIRE ALARM SYSTEMS Installation, wire pulling and testing

C. TELEVISION AND VIDEO SYSTEMS Television monitoring and surveillance systems Video security systems, Video entertainment systems, Video educational systems, Microwave transmission systems, CATV and CCTV

D. SECURITY SYSTEMS Perimeter security systems Vibration sensor systems Card access systems Access control systems, Sonar/infrared monitoring equipment

E. COMMUNICATIONS SYSTEMS THAT TRANSMIT OR RECEIVE INFORMATION AND/OR CONTROL SYSTEMS THAT ARE INTRINSIC TO THE ABOVE LISTED SYSTEMS SCADA (Supervisory Control and Data Acquisition) PCM (Pulse Code Modulation) Inventory Control Systems, Digital Data Systems Broadband and Baseband and Carriers Point of Sale Systems, VSAT Data Systems Data Communication Systems RF and Remote Control Systems, Fiber Optic Data Systems

WORK EXCLUDED Raceway systems are not covered (excluding Ladder-Rack for the purpose of the above listed systems). Chases and/or nipples (not to exceed 10 feet) may be installed on open wiring systems. Energy management systems. SCADA (Supervisory Control and Data Acquisition) when not intrinsic to the above listed systems (in the scope). Fire alarm systems when installed in raceways (including wire and cable pulling) shall be performed at the electrician wage rate, when either of the following two (2) conditions apply:

1. The project involves new or major remodel building trades construction.
2. The conductors for the fire alarm system are installed in conduit.

 ELEC0234-001 12/26/2022

MONTEREY, SAN BENITO AND SANTA CRUZ COUNTIES

	Rates	Fringes
ELECTRICIAN		
Zone A.....	\$ 60.91	29.43
Zone B.....	\$ 67.00	29.61

Zone A: All of Santa Cruz, Monterey, and San Benito Counties within 25 air miles of Highway 1 and Dolan Road in Moss Landing, and an area extending 5 miles east and west of Highway 101 South to the San Luis Obispo County Line

Zone B: Any area outside of Zone A

ELEC0234-003 12/01/2021

MONTEREY, SAN BENITO, AND SANTA CRUZ COUNTIES

	Rates	Fringes
Sound & Communications		
Installer.....	\$ 47.93	24.09
Technician.....	\$ 55.12	24.30

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs for which the conductors for the fire alarm system are installed in conduit; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

ELEC0302-001 02/27/2023

CONTRA COSTA COUNTY

	Rates	Fringes
CABLE SPLICER.....	\$ 68.92	32.67
ELECTRICIAN.....	\$ 61.26	32.44

ELEC0302-003 12/01/2022

CONTRA COSTA COUNTY

	Rates	Fringes
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Sound & Communications

Installer.....	\$ 46.64	25.30
Technician.....	\$ 53.64	25.51

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs for which the conductors for the fire alarm system are installed in conduit; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

 ELEC0332-001 06/01/2023

SANTA CLARA COUNTY

	Rates	Fringes
CABLE SPLICER.....	\$ 95.65	44.42
ELECTRICIAN.....	\$ 83.17	44.045

FOOTNOTES: Work under compressed air or where gas masks are required, or work on ladders, scaffolds, stacks, "Bosun's chairs," or other structures and where the workers are not protected by permanent guard rails at a distance of 40 to 60 ft. from the ground or supporting structures: to be paid one and one-half times the straight-time rate of pay. Work on structures of 60 ft. or over (as described above): to be paid twice the straight-time rate of pay.

 ELEC0332-003 12/01/2022

SANTA CLARA COUNTY

	Rates	Fringes
Sound & Communications		
Installer.....	\$ 51.18	25.435
Technician.....	\$ 58.86	25.666

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs for which the conductors for the fire alarm system are installed in conduit; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

 ELEC0595-001 06/01/2023

ALAMEDA COUNTY

	Rates	Fringes
CABLE SPLICER.....	\$ 80.73	3%+42.87
ELECTRICIAN.....	\$ 70.20	3%+42.87

 ELEC0595-002 12/01/2022

CALAVERAS AND SAN JOAQUIN COUNTIES

	Rates	Fringes
CABLE SPLICER.....	\$ 53.34	7.75%+25.88
ELECTRICIAN		
(1) Tunnel work.....	\$ 46.67	7.75%+25.88
(2) All other work.....	\$ 44.45	7.75%+25.88

 ELEC0595-006 12/01/2022

ALAMEDA COUNTY

	Rates	Fringes
Sound & Communications		
Installer.....	\$ 51.18	3%+23.90
Technician.....	\$ 58.86	3%+23.90

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs for which the conductors for the fire alarm system are installed in conduit; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

 ELEC0595-008 12/01/2022

CALAVERAS AND SAN JOAQUIN COUNTIES

	Rates	Fringes
Communications System		
Installer.....	\$ 40.88	3%+23.90
Technician.....	\$ 47.01	3%+23.90

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or

jobs for which the conductors for the fire alarm system are installed in conduit; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

 ELEC0617-001 06/01/2023

SAN MATEO COUNTY

	Rates	Fringes
ELECTRICIAN.....	\$ 78.00	45.88

 ELEC0617-003 12/01/2022

SAN MATEO COUNTY

	Rates	Fringes
Sound & Communications		
Installer.....	\$ 51.18	25.44
Technician.....	\$ 58.86	25.67

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs for which the conductors for the fire alarm system are installed in conduit; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which

involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

 ELEC0684-001 06/01/2023

MARIPOSA, MERCED, STANISLAUS AND TUOLUMNE COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 46.00	3%+27.68

CABLE SPLICER = 110% of Journeyman Electrician

 ELEC0684-004 12/01/2021

MARIPOSA, MERCED, STANISLAUS AND TUOLUMNE COUNTIES

	Rates	Fringes
Communications System		
Installer.....	\$ 38.24	23.80
Technician.....	\$ 43.98	23.97

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs for which the conductors for the fire alarm system are installed in conduit; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

 ELEC1245-001 06/01/2022

	Rates	Fringes
LINE CONSTRUCTION		
(1) Lineman; Cable splicer..	\$ 64.40	22.58
(2) Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), overhead & underground distribution line equipment).....	\$ 50.00	21.30
(3) Groundman.....	\$ 38.23	20.89
(4) Powderman.....	\$ 51.87	18.79

HOLIDAYS: New Year's Day, M.L. King Day, Memorial Day,
Independence Day, Labor Day, Veterans Day, Thanksgiving Day
and day after Thanksgiving, Christmas Day

ELEV0008-001 01/01/2023

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 77.61	37.335+a+b

FOOTNOTE:

- a. PAID VACATION: Employer contributes 8% of regular hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for 6 months to 5 years of service.
- b. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

ENGI0003-001 06/28/2023

""AREA 1"" WAGE RATES ARE LISTED BELOW

""AREA 2"" RECEIVES AN ADDITIONAL \$2.00 PER HOUR ABOVE AREA 1 RATES.

SEE AREA DEFINITIONS BELOW

	Rates	Fringes
OPERATOR: Power Equipment (AREA 1:)		

GROUP 1.....	\$ 60.72	31.03
GROUP 2.....	\$ 59.19	31.03
GROUP 3.....	\$ 57.71	31.03
GROUP 4.....	\$ 56.33	31.03
GROUP 5.....	\$ 55.06	31.03
GROUP 6.....	\$ 53.74	31.03
GROUP 7.....	\$ 52.60	31.03
GROUP 8.....	\$ 51.46	31.03
GROUP 8-A.....	\$ 49.25	31.03

OPERATOR: Power Equipment
(Cranes and Attachments -
AREA 1:)

GROUP 1		
Cranes.....	\$ 52.30	31.15
Oiler.....	\$ 43.79	31.15
Truck crane oiler.....	\$ 46.08	31.15
GROUP 2		
Cranes.....	\$ 50.54	31.15
Oiler.....	\$ 42.83	31.15
Truck crane oiler.....	\$ 45.07	31.15
GROUP 3		
Cranes.....	\$ 48.80	31.15
Hydraulic.....	\$ 44.44	31.15
Oiler.....	\$ 42.55	31.15
Truck crane oiler.....	\$ 44.83	31.15
GROUP 4		
Cranes.....	\$ 45.76	31.15

OPERATOR: Power Equipment
(Piledriving - AREA 1:)

GROUP 1		
Lifting devices.....	\$ 52.64	31.15
Oiler.....	\$ 43.38	31.15
Truck Crane Oiler.....	\$ 45.66	31.15
GROUP 2		
Lifting devices.....	\$ 50.82	31.15
Oiler.....	\$ 43.11	31.15
Truck Crane Oiler.....	\$ 45.41	31.15
GROUP 3		
Lifting devices.....	\$ 49.14	31.15
Oiler.....	\$ 42.89	31.15
Truck Crane Oiler.....	\$ 45.12	31.15
GROUP 4		
Lifting devices.....	\$ 47.37	31.15
GROUP 5		
Lifting devices.....	\$ 44.73	31.15
GROUP 6		
Lifting devices.....	\$ 42.50	31.15

OPERATOR: Power Equipment
(Steel Erection - AREA 1:)

GROUP 1

Cranes.....	\$ 53.27	31.15
Oiler.....	\$ 43.72	31.15
Truck Crane Oiler.....	\$ 45.95	31.15
GROUP 2		
Cranes.....	\$ 51.50	31.15
Oiler.....	\$ 43.45	31.15
Truck Crane Oiler.....	\$ 45.73	31.15
GROUP 3		
Cranes.....	\$ 50.02	31.15
Hydraulic.....	\$ 45.07	31.15
Oiler.....	\$ 43.23	31.15
Truck Crane Oiler.....	\$ 45.46	31.15
GROUP 4		
Cranes.....	\$ 48.00	31.15
GROUP 5		
Cranes.....	\$ 46.70	31.15
OPERATOR: Power Equipment (Tunnel and Underground Work - AREA 1:)		
SHAFTS, STOPES, RAISES:		
GROUP 1.....	\$ 56.82	31.03
GROUP 1-A.....	\$ 59.29	31.03
GROUP 2.....	\$ 55.56	31.03
GROUP 3.....	\$ 54.23	31.03
GROUP 4.....	\$ 53.09	31.03
GROUP 5.....	\$ 51.95	31.03
UNDERGROUND:		
GROUP 1.....	\$ 56.72	31.03
GROUP 1-A.....	\$ 59.19	31.03
GROUP 2.....	\$ 55.46	31.03
GROUP 3.....	\$ 54.13	31.03
GROUP 4.....	\$ 52.99	31.03
GROUP 5.....	\$ 51.85	31.03

FOOTNOTE: Work suspended by ropes or cables, or work on a Yo-Yo Cat: \$.60 per hour additional.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Operator of helicopter (when used in erection work); Hydraulic excavator, 7 cu. yds. and over; Power shovels, over 7 cu. yds.

GROUP 2: Highline cableway; Hydraulic excavator, 3-1/2 cu. yds. up to 7 cu. yds.; Licensed construction work boat operator, on site; Power blade operator (finish); Power shovels, over 1 cu. yd. up to and including 7 cu. yds. m.r.c.

GROUP 3: Asphalt milling machine; Cable backhoe; Combination backhoe and loader over 3/4 cu. yds.; Continuous flight tie back machine assistant to engineer or mechanic; Crane mounted continuous flight tie back machine, tonnage to apply; Crane mounted drill attachment, tonnage to apply; Dozer, slope brd; Gradall; Hydraulic excavator, up to 3 1/2 cu. yds.; Loader 4 cu. yds. and over; Long reach excavator; Multiple engine scraper (when used as push pull); Power shovels, up to and including 1 cu. yd.; Pre-stress wire wrapping machine; Side boom cat, 572 or larger; Track loader 4 cu. yds. and over; Wheel excavator (up to and including 750 cu. yds. per hour)

GROUP 4: Asphalt plant engineer/box person; Chicago boom; Combination backhoe and loader up to and including 3/4 cu. yd.; Concrete batch plant (wet or dry); Dozer and/or push cat; Pull- type elevating loader; Gradesetter, grade checker (GPS, mechanical or otherwise); Grooving and grinding machine; Heading shield operator; Heavy-duty drilling equipment, Hughes, LDH, Watson 3000 or similar; Heavy-duty repairperson and/or welder; Lime spreader; Loader under 4 cu. yds.; Lubrication and service engineer (mobile and grease rack); Mechanical finishers or spreader machine (asphalt, Barber-Greene and similar); Miller Formless M-9000 slope paver or similar; Portable crushing and screening plants; Power blade support; Roller operator, asphalt; Rubber-tired scraper, self-loading (paddle-wheels, etc.); Rubber- tired earthmoving equipment (scrapers); Slip form paver (concrete); Small tractor with drag; Soil stabilizer (P & H or equal); Spider plow and spider puller; Tubex pile rig; Unlicensed constuction work boat operator, on site; Timber skidder; Track loader up to 4 yds.; Tractor-drawn scraper; Tractor, compressor drill combination; Welder; Woods-Mixer (and other similar Pugmill equipment)

GROUP 5: Cast-in-place pipe laying machine; Combination slusher and motor operator; Concrete conveyor or concrete pump, truck or equipment mounted; Concrete conveyor, building site; Concrete pump or pumpcrete gun; Drilling equipment, Watson 2000, Texoma 700 or similar; Drilling and boring machinery, horizontal (not to apply to waterliners, wagon drills or jackhammers); Concrete mixer/all; Person and/or material hoist; Mechanical finishers (concrete) (Clary, Johnson, Bidwell Bridge Deck or similar types); Mechanical burm, curb and/or curb and gutter machine, concrete or asphalt); Mine or shaft hoist; Portable crusher; Power jumbo operator (setting slip-forms, etc., in tunnels); Screed (automatic or manual); Self-propelled compactor with dozer; Tractor with boom D6 or smaller;

Trenching machine, maximum digging capacity over 5 ft. depth; Vermeer T-600B rock cutter or similar

GROUP 6: Armor-Coater (or similar); Ballast jack tamper; Boom- type backfilling machine; Assistant plant engineer; Bridge and/or gantry crane; Chemical grouting machine, truck-mounted; Chip spreading machine operator; Concrete saw (self-propelled unit on streets, highways, airports and canals); Deck engineer; Drilling equipment Texoma 600, Hughes 200 Series or similar up to and including 30 ft. m.r.c.; Drill doctor; Helicopter radio operator; Hydro-hammer or similar; Line master; Skidsteer loader, Bobcat larger than 743 series or similar (with attachments); Locomotive; Lull hi-lift or similar; Oiler, truck mounted equipment; Pavement breaker, truck-mounted, with compressor combination; Paving fabric installation and/or laying machine; Pipe bending machine (pipelines only); Pipe wrapping machine (tractor propelled and supported); Screed (except asphaltic concrete paving); Self- propelled pipeline wrapping machine; Tractor; Self-loading chipper; Concrete barrier moving machine

GROUP 7: Ballast regulator; Boom truck or dual-purpose A-frame truck, non-rotating - under 15 tons; Cary lift or similar; Combination slurry mixer and/or cleaner; Drilling equipment, 20 ft. and under m.r.c.; Firetender (hot plant); Grouting machine operator; Highline cableway signalperson; Stationary belt loader (Kolman or similar); Lift slab machine (Vagtborg and similar types); Maginnes internal full slab vibrator; Material hoist (1 drum); Mechanical trench shield; Pavement breaker with or without compressor combination); Pipe cleaning machine (tractor propelled and supported); Post driver; Roller (except asphalt); Chip Seal; Self-propelled automatically applied concrete curing machine (on streets, highways, airports and canals); Self-propelled compactor (without dozer); Signalperson; Slip-form pumps (lifting device for concrete forms); Tie spacer; Tower mobile; Trenching machine, maximum digging capacity up to and including 5 ft. depth; Truck- type loader

GROUP 8: Bit sharpener; Boiler tender; Box operator; Brakeperson; Combination mixer and compressor (shotcrete/gunite); Compressor operator; Deckhand; Fire tender; Forklift (under 20 ft.); Generator; Gunite/shotcrete equipment operator; Hydraulic monitor; Ken seal machine (or similar); Mixermobile; Oiler; Pump operator; Refrigeration plant; Reservoir-debris tug (self-propelled floating); Ross Carrier (construction site); Rotomist operator; Self-propelled tape machine; Shuttlecar; Self-propelled power sweeper operator (includes vacuum

sweeper); Slusher operator; Surface heater; Switchperson; Tar pot firetender; Tugger hoist, single drum; Vacuum cooling plant; Welding machine (powered other than by electricity)

GROUP 8-A: Elevator operator; Skidsteer loader-Bobcat 743 series or smaller, and similar (without attachments); Mini excavator under 25 H.P. (backhoe-trencher); Tub grinder wood chipper

ALL CRANES AND ATTACHMENTS

GROUP 1: Clamshell and dragline over 7 cu. yds.; Crane, over 100 tons; Derrick, over 100 tons; Derrick barge pedestal-mounted, over 100 tons; Self-propelled boom-type lifting device, over 100 tons

GROUP 2: Clamshell and dragline over 1 cu. yd. up to and including 7 cu. yds.; Crane, over 45 tons up to and including 100 tons; Derrick barge, 100 tons and under; Self-propelled boom-type lifting device, over 45 tons; Tower crane

GROUP 3: Clamshell and dragline up to and including 1 cu. yd.; Cranes 45 tons and under; Self-propelled boom-type lifting device 45 tons and under;

GROUP 4: Boom Truck or dual purpose A-frame truck, non-rotating over 15 tons; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) over 15 tons; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) - under 15 tons;

PILEDRIVERS

GROUP 1: Derrick barge pedestal mounted over 100 tons; Clamshell over 7 cu. yds.; Self-propelled boom-type lifting device over 100 tons; Truck crane or crawler, land or barge mounted over 100 tons

GROUP 2: Derrick barge pedestal mounted 45 tons to and including 100 tons; Clamshell up to and including 7 cu. yds.; Self-propelled boom-type lifting device over 45 tons; Truck crane or crawler, land or barge mounted, over 45 tons up to and including 100 tons; Fundex F-12 hydraulic pile rig

GROUP 3: Derrick barge pedestal mounted under 45 tons; Self-propelled boom-type lifting device 45 tons and under; Skid/scow piledriver, any tonnage; Truck crane or crawler, land or barge mounted 45 tons and under

GROUP 4: Assistant operator in lieu of assistant to engineer; Forklift, 10 tons and over; Heavy-duty repairperson/welder

GROUP 5: Deck engineer

GROUP 6: Deckhand; Fire tender

STEEL ERECTORS

GROUP 1: Crane over 100 tons; Derrick over 100 tons; Self-propelled boom-type lifting device over 100 tons

GROUP 2: Crane over 45 tons to 100 tons; Derrick under 100 tons; Self-propelled boom-type lifting device over 45 tons to 100 tons; Tower crane

GROUP 3: Crane, 45 tons and under; Self-propelled boom-type lifting device, 45 tons and under

GROUP 4: Chicago boom; Forklift, 10 tons and over; Heavy-duty repair person/welder

GROUP 5: Boom cat

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TUNNEL AND UNDERGROUND WORK

GROUP 1-A: Tunnel bore machine operator, 20' diameter or more

GROUP 1: Heading shield operator; Heavy-duty repairperson; Mucking machine (rubber tired, rail or track type); Raised bore operator (tunnels); Tunnel mole bore operator

GROUP 2: Combination slusher and motor operator; Concrete pump or pumpcrete gun; Power jumbo operator

GROUP 3: Drill doctor; Mine or shaft hoist

GROUP 4: Combination slurry mixer cleaner; Grouting Machine

operator; Motorman

GROUP 5: Bit Sharpener; Brakeman; Combination mixer and compressor (gunite); Compressor operator; Oiler; Pump operator; Slusher operator

AREA DESCRIPTIONS:

POWER EQUIPMENT OPERATORS, CRANES AND ATTACHMENTS, TUNNEL AND UNDERGROUND [These areas do not apply to Piledrivers and Steel Erectors]

AREA 1: ALAMEDA, CALAVERAS, CONTRA COSTA, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN JOAQUIN, SAN MATEO, SANTA CLARA, SANTA CRUZ, STANISLAUS, TUOLUMNE

AREA 2 -NOTED BELOW

THE REMAINING COUNTIES ARE SPLIT BETWEEN AREA 1 AND AREA 2 AS NOTED BELOW:

CALAVERAS COUNTY:

Area 1: Remainder
Area 2: Eastern Part

FRESNO COUNTY:

Area 1: Remainder
Area 2: Eastern Part

MADERA COUNTY:

Area 1: Remainder
Area 2: Eastern Part

MARIPOSA COUNTY:

Area 1: Remainder
Area 2: Eastern Part

MONTEREY COUNTY:

Area 1: Remainder
Area 2: Southwestern part

TUOLUMNE COUNTY:

Area 1: Remainder
Area 2: Eastern Part

ENGI0003-008 08/01/2023

Rates

Fringes

Dredging: (DREDGING:
 CLAMSHELL & DIPPER DREDGING;
 HYDRAULIC SUCTION DREDGING:)

AREA 1:

(1) Leverman.....	\$ 57.95	37.55
(2) Dredge Dozer; Heavy duty repairman.....	\$ 52.99	37.55
(3) Booster Pump Operator; Deck Engineer; Deck mate; Dredge Tender; Winch Operator.....	\$ 51.87	37.55
(4) Bargeman; Deckhand; Fireman; Leveehand; Oiler..	\$ 48.57	37.55

AREA 2:

(1) Leverman.....	\$ 59.95	37.55
(2) Dredge Dozer; Heavy duty repairman.....	\$ 54.99	37.55
(3) Booster Pump Operator; Deck Engineer; Deck mate; Dredge Tender; Winch Operator.....	\$ 53.87	37.55
(4) Bargeman; Deckhand; Fireman; Leveehand; Oiler..	\$ 50.57	37.55

AREA DESCRIPTIONS

AREA 1: ALAMEDA, BUTTE, CONTRA COSTA, KINGS, MARIN, MERCED,
 NAPA, SACRAMENTO, SAN BENITO, SAN FRANCISCO, SAN JOAQUIN,
 SAN MATEO, SANTA CLARA, SANTA CRUZ, SOLANO, STANISLAUS,
 SUTTER, YOLO, AND YUBA COUNTIES

AREA 2: MODOC COUNTY

THE REMAINING COUNTIES ARE SPLIT BETWEEN AREA 1 AND AREA 2
 AS NOTED BELOW:

ALPINE COUNTY:

Area 1: Northernmost part
 Area 2: Remainder

CALAVERAS COUNTY:

Area 1: Remainder
 Area 2: Eastern part

COLUSA COUNTY:

Area 1: Eastern part
 Area 2: Remainder

ELDORADO COUNTY:

Area 1: North Central part

Area 2: Remainder

FRESNO COUNTY:

Area 1: Remainder

Area 2: Eastern part

GLENN COUNTY:

Area 1: Eastern part

Area 2: Remainder

LASSEN COUNTY:

Area 1: Western part along the Southern portion of border
with Shasta County

Area 2: Remainder

MADERA COUNTY:

Area 1: Except Eastern part

Area 2: Eastern part

MARIPOSA COUNTY

Area 1: Except Eastern part

Area 2: Eastern part

MONTERREY COUNTY

Area 1: Except Southwestern part

Area 2: Southwestern part

NEVADA COUNTY:

Area 1: All but the Northern portion along the border of
Sierra County

Area 2: Remainder

PLACER COUNTY:

Area 1: All but the Central portion

Area 2: Remainder

PLUMAS COUNTY:

Area 1: Western portion

Area 2: Remainder

SHASTA COUNTY:

Area 1: All but the Northeastern corner

Area 2: Remainder

SIERRA COUNTY:

Area 1: Western part

Area 2: Remainder

SISKIYOU COUNTY:

- Area 1: Central part
- Area 2: Remainder

SONOMA COUNTY:

- Area 1: All but the Northwestern corner
- Area 2: Remainder

TEHAMA COUNTY:

- Area 1: All but the Western border with Mendocino & Trinity Counties
- Area 2: Remainder

TRINITY COUNTY:

- Area 1: East Central part and the Northeastern border with Shasta County
- Area 2: Remainder

TUOLUMNE COUNTY:

- Area 1: Except Eastern part
- Area 2: Eastern part

 ENGI0003-019 06/29/2020

SEE AREA DESCRIPTIONS BELOW

	Rates	Fringes
OPERATOR: Power Equipment (LANDSCAPE WORK ONLY)		
GROUP 1		
AREA 1.....	\$ 39.95	30.28
AREA 2.....	\$ 41.95	30.28
GROUP 2		
AREA 1.....	\$ 36.35	30.28
AREA 2.....	\$ 38.35	30.28
GROUP 3		
AREA 1.....	\$ 31.74	30.28
AREA 2.....	\$ 33.74	30.28

GROUP DESCRIPTIONS:

GROUP 1: Landscape Finish Grade Operator: All finish grade work regardless of equipment used, and all equipment with a rating more than 65 HP.

GROUP 2: Landscape Operator up to 65 HP: All equipment with a manufacturer's rating of 65 HP or less except equipment

covered by Group 1 or Group 3. The following equipment shall be included except when used for finish work as long as manufacturer's rating is 65 HP or less: A-Frame and Winch Truck, Backhoe, Forklift, Hydragraphic Seeder Machine, Roller, Rubber-Tired and Track Earthmoving Equipment, Skiploader, Straw Blowers, and Trencher 31 HP up to 65 HP.

GROUP 3: Landscae Utility Operator: Small Rubber-Tired Tractor, Trencher Under 31 HP.

AREA DESCRIPTIONS:

AREA 1: ALAMEDA, BUTTE, CONTRA COSTA, KINGS, MARIN, MERCED, NAPA, SACRAMENTO, SAN BENITO, SAN FRANCISCO, SAN JOAQUIN, SAN MATEO, SANTA CLARA, SANTA CRUZ, SOLANO, STANISLAUS, SUTTER, YOLO, AND YUBA COUNTIES

AREA 2 - MODOC COUNTY

THE REMAINING COUNTIES ARE SPLIT BETWEEN AREA 1 AND AREA 2 AS NOTED BELOW:

ALPINE COUNTY:

Area 1: Northernmost part

Area 2: Remainder

CALAVERAS COUNTY:

Area 1: Except Eastern part

Area 2: Eastern part

COLUSA COUNTY:

Area 1: Eastern part

Area 2: Remainder

DEL NORTE COUNTY:

Area 1: Extreme Southwestern corner

Area 2: Remainder

ELDORADO COUNTY:

Area 1: North Central part

Area 2: Remainder

FRESNO COUNTY

Area 1: Except Eastern part

Area 2: Eastern part

GLENN COUNTY:

Area 1: Eastern part

Area 2: Remainder

HUMBOLDT COUNTY:

Area 1: Except Eastern and Southwestern parts

Area 2: Remainder

LAKE COUNTY:

Area 1: Southern part

Area 2: Remainder

LASSEN COUNTY:

Area 1: Western part along the Southern portion of border
with Shasta County

Area 2: Remainder

MADERA COUNTY

Area 1: Remainder

Area 2: Eastern part

MARIPOSA COUNTY

Area 1: Remainder

Area 2: Eastern part

MENDOCINO COUNTY:

Area 1: Central and Southeastern parts

Area 2: Remainder

MONTEREY COUNTY

Area 1: Remainder

Area 2: Southwestern part

NEVADA COUNTY:

Area 1: All but the Northern portion along the border of
Sierra County

Area 2: Remainder

PLACER COUNTY:

Area 1: All but the Central portion

Area 2: Remainder

PLUMAS COUNTY:

Area 1: Western portion

Area 2: Remainder

SHASTA COUNTY:

Area 1: All but the Northeastern corner

Area 2: Remainder

SIERRA COUNTY:

Area 1: Western part

Area 2: Remainder

SISKIYOU COUNTY:
Area 1: Central part
Area 2: Remainder

SONOMA COUNTY:
Area 1: All but the Northwestern corner
Area 2: Reaminder

TEHAMA COUNTY:
Area 1: All but the Western border with mendocino & Trinity
Counties
Area 2: Remainder

TRINITY COUNTY:
Area 1: East Central part and the Northeaster border with
Shasta County
Area 2: Remainder

TULARE COUNTY;
Area 1: Remainder
Area 2: Eastern part

TUOLUMNE COUNTY:
Area 1: Remainder
Area 2: Eastern Part

IRON0377-001 01/01/2023

ALAMEDA, CONTRA COSTA, SAN MATEO, SANTA CLARA COUNTIES

	Rates	Fringes
Ironworkers:		
Fence Erector.....	\$ 41.28	25.66
Ornamental, Reinforcing and Structural.....	\$ 49.88	34.30

PREMIUM PAY:

\$6.00 additional per hour at the following locations:

China Lake Naval Test Station, Chocolate Mountains Naval
Reserve-Niland,
Edwards AFB, Fort Irwin Military Station, Fort Irwin Training
Center-Goldstone, San Clemente Island, San Nicholas Island,
Susanville Federal Prison, 29 Palms - Marine Corps, U.S. Marine
Base - Barstow, U.S. Naval Air Facility - Sealey, Vandenberg AFB

\$4.00 additional per hour at the following locations:

Army Defense Language Institute - Monterey, Fallon Air Base,
Naval Post Graduate School - Monterey, Yermo Marine Corps
Logistics Center

\$2.00 additional per hour at the following locations:

Port Hueneme, Port Mugu, U.S. Coast Guard Station - Two Rock

IRON0377-003 01/01/2023

SAN FRANCISCO CITY and COUNTY

	Rates	Fringes
Ironworkers:		
Fence Erector.....	\$ 41.28	25.66
Ornamental, Reinforcing and Structural.....	\$ 50.38	34.30

PREMIUM PAY:

\$6.00 additional per hour at the following locations:

China Lake Naval Test Station, Chocolate Mountains Naval
Reserve-Niland,
Edwards AFB, Fort Irwin Military Station, Fort Irwin Training
Center-Goldstone, San Clemente Island, San Nicholas Island,
Susanville Federal Prison, 29 Palms - Marine Corps, U.S. Marine
Base - Barstow, U.S. Naval Air Facility - Sealey, Vandenberg AFB

\$4.00 additional per hour at the following locations:

Army Defense Language Institute - Monterey, Fallon Air Base,
Naval Post Graduate School - Monterey, Yermo Marine Corps
Logistics Center

\$2.00 additional per hour at the following locations:

Port Hueneme, Port Mugu, U.S. Coast Guard Station - Two Rock

IRON0433-005 01/01/2023

REMAINING COUNTIES

	Rates	Fringes
IRONWORKER		
Fence Erector.....	\$ 41.28	25.66
Ornamental, Reinforcing and Structural.....	\$ 46.20	34.30

PREMIUM PAY:

\$6.00 additional per hour at the following locations:

China Lake Naval Test Station, Chocolate Mountains Naval Reserve-Niland, Edwards AFB, Fort Irwin Military Station, Fort Irwin Training Center-Goldstone, San Clemente Island, San Nicholas Island, Susanville Federal Prison, 29 Palms - Marine Corps, U.S. Marine Base - Barstow, U.S. Naval Air Facility - Sealey, Vandenberg AFB

\$4.00 additional per hour at the following locations:

Army Defense Language Institute - Monterey, Fallon Air Base, Naval Post Graduate School - Monterey, Yermo Marine Corps Logistics Center

\$2.00 additional per hour at the following locations:

Port Hueneme, Port Mugu, U.S. Coast Guard Station - Two Rock

LAB00067-006 06/26/2023

AREA ""1"" - ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO AND SANTA CLARA COUNTIES

AREA ""2"" - CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN JOAQUIN, STANISLAUS, AND TUOLUMNE COUNTIES

	Rates	Fringes
LABORER (ASBESTOS/MOLD/LEAD LABORER)		
Area 1.....	\$ 36.50	28.34
Area 2.....	\$ 35.50	28.34

ASBESTOS REMOVAL-SCOPE OF WORK: Site mobilization; initial site clean-up; site preparation; removal of asbestos-containing materials from walls and ceilings; or

from pipes, boilers and mechanical systems only if they are being scrapped; encapsulation, enclosure and disposal of asbestos-containing materials by hand or with equipment or machinery; scaffolding; fabrication of temporary wooden barriers; and assembly of decontamination stations.

 LAB00073-002 06/27/2022

CALAVERAS AND SAN JOAQUIN COUNTIES

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		
Escort Driver, Flag Person..	\$ 35.01	25.49
Traffic Control Person I....	\$ 35.31	25.49
Traffic Control Person II...	\$ 32.81	25.49

TRAFFIC CONTROL PERSON I: Layout of traffic control, crash cushions, construction area and roadside signage.

TRAFFIC CONTROL PERSON II: Installation and removal of temporary/permanent signs, markers, delineators and crash cushions.

 LAB00073-003 07/01/2022

SAN JOAQUIN COUNTY

	Rates	Fringes
LABORER		
Mason Tender-Brick.....	\$ 35.29	25.21

 LAB00073-005 06/26/2023

	Rates	Fringes
Tunnel and Shaft Laborers:		
GROUP 1.....	\$ 45.89	27.72
GROUP 2.....	\$ 45.66	27.72
GROUP 3.....	\$ 45.41	27.72
GROUP 4.....	\$ 44.96	27.72
GROUP 5.....	\$ 44.42	27.72
Shotcrete Specialist.....	\$ 46.41	27.72

TUNNEL AND SHAFT CLASSIFICATIONS

GROUP 1: Diamond driller; Groundmen; Gunite and shotcrete nozzlemen

GROUP 2: Rodmen; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powdermen, heading; Cherry pickermen - where car is lifted; Concrete finisher in tunnel; Concrete screedman; Grout pumpman and potman; Gunite & shotcrete gunman & potman; Headermen; High pressure nozzleman; Miner - tunnel, including top and bottom man on shaft and raise work; Nipper; Nozzleman on slick line; Sandblaster - potman, Robotic Shotcrete Placer, Segment Erector, Tunnel Muck Hauler, Steel Form raiser and setter; Timberman, retimberman (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powderman - primer house

GROUP 4: Vibrator operator, pavement breaker; Bull gang - muckers, trackmen; Concrete crew - includes rodding and spreading, Dumpmen (any method)

GROUP 5: Grout crew; Reboundman; Swamper/ Brakeman

LAB0073-007 06/25/2018

CALAVERAS AND SAN JOAQUIN COUNTIES

	Rates	Fringes
LABORER (CONSTRUCTION CRAFT LABORERS)		
Construction Specialist		
Group.....	\$ 30.49	23.20
GROUP 1.....	\$ 29.79	23.20
GROUP 1-a.....	\$ 30.01	23.20
GROUP 1-c.....	\$ 29.84	23.20
GROUP 1-e.....	\$ 30.34	23.20
GROUP 1-f.....	\$ 30.37	23.20
GROUP 2.....	\$ 29.64	23.20
GROUP 3.....	\$ 29.54	23.20
GROUP 4.....	\$ 23.23	23.20
See groups 1-b and 1-d under laborer classifications.		
LABORER (GARDENERS, HORTICULTURAL & LANDSCAPE LABORERS)		
(1) New Construction.....	\$ 29.54	23.20
(2) Establishment Warranty Period.....	\$ 23.23	23.20

LABORER (GUNITE)		
GROUP 1.....	\$ 29.75	22.31
GROUP 2.....	\$ 29.25	22.31
GROUP 3.....	\$ 28.66	22.31
GROUP 4.....	\$ 28.54	22.31
LABORER (WRECKING)		
GROUP 1.....	\$ 29.79	23.20
GROUP 2.....	\$ 29.64	23.20

FOOTNOTES:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts shall receive \$0.25 per hour above the applicable wage rate. This shall not apply to workers entitled to receive the wage rate set forth in Group 1-a below.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Cast-in- place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker including Leade Abatement; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and bucket; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter;

Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. "Sewer cleaner" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds. All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing

from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: Final clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification ""material cleaner"" is to be utilized under the following conditions:

A: at demolition site for the salvage of the material.

B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job.

C: for the cleaning of salvage material at the jobsite or temporary jobsite yard.

The material cleaner classification should not be used in the performance of ""form stripping, cleaning and oiling and moving to the next point of erection"".

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Structural Nozzleman

GROUP 2: Nozzleman, Gunman, Potman, Groundman

GROUP 3: Reboundman

GROUP 4: Gunite laborer

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

LAB00073-009 07/01/2022

CALAVERAS AND SAN JOAQUIN COUNTIES

	Rates	Fringes
LABORER (Plaster Tender).....	\$ 38.02	28.25

Work on a swing stage scaffold: \$1.00 per hour additional.

LAB00261-003 06/28/2021

SAN FRANCISCO AND SAN MATEO COUNTIES

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		
Escort Driver, Flag Person..	\$ 34.48	26.21
Traffic Control Person I....	\$ 34.78	26.21
Traffic Control Person II...	\$ 32.28	26.21

TRAFFIC CONTROL PERSON I: Layout of traffic control, crash cushions, construction area and roadside signage.

TRAFFIC CONTROL PERSON II: Installation and removal of temporary/permanent signs, markers, delineators and crash cushions.

LAB00261-005 06/26/2023

SAN FRANCISCO AND SAN MATEO COUNTIES

	Rates	Fringes
Tunnel and Shaft Laborers:		
GROUP 1.....	\$ 45.89	27.72
GROUP 2.....	\$ 45.66	27.72
GROUP 3.....	\$ 45.41	27.72
GROUP 4.....	\$ 44.96	27.72
GROUP 5.....	\$ 44.42	27.72
Shotcrete Specialist.....	\$ 46.41	27.72

TUNNEL AND SHAFT CLASSIFICATIONS

GROUP 1: Diamond driller; Groundmen; Gunite and shotcrete nozzlelemen

GROUP 2: Rodmen; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powdermen, heading; Cherry pickermen - where car is lifted; Concrete finisher in tunnel; Concrete screedman; Grout pumpman and potman; Gunite & shotcrete gunman & potman; Headermen; High pressure nozzleman; Miner - tunnel, including top and bottom man on shaft and raise work; Nipper; Nozzleman on slick line; Sandblaster - potman, Robotic Shotcrete Placer, Segment Erector, Tunnel Muck Hauler, Steel Form raiser and setter; Timberman, retimberman (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powderman - primer house

GROUP 4: Vibrator operator, pavement breaker; Bull gang - muckers, trackmen; Concrete crew - includes rodding and spreading, Dumpmen (any method)

GROUP 5: Grout crew; Reboundman; Swamper/ Brakeman

LAB00261-009 06/25/2018

SAN FRANCISCO, AND SAN MATEO COUNTIES

	Rates	Fringes
LABORER (CONSTRUCTION CRAFT LABORERS - AREA A:)		
Construction Specialist		
Group.....	\$ 31.49	23.20
GROUP 1.....	\$ 30.79	23.20
GROUP 1-a.....	\$ 31.01	23.20
GROUP 1-c.....	\$ 30.84	23.20

GROUP 1-e.....	\$ 31.34	23.20
GROUP 1-f.....	\$ 31.37	23.20
GROUP 2.....	\$ 30.64	23.20
GROUP 3.....	\$ 30.54	23.20
GROUP 4.....	\$ 24.23	23.20

See groups 1-b and 1-d under laborer classifications.

LABORER (GARDENERS,
HORTICULTURAL & LANDSCAPE
LABORERS - AREA A:)

(1) New Construction.....	\$ 30.54	23.20
(2) Establishment Warranty Period.....	\$ 24.23	23.20

LABORER (WRECKING - AREA A:)

GROUP 1.....	\$ 30.79	23.20
GROUP 2.....	\$ 30.64	23.20

Laborers: (GUNITE - AREA A:)

GROUP 1.....	\$ 30.75	22.31
GROUP 2.....	\$ 30.25	22.31
GROUP 3.....	\$ 29.66	22.31
GROUP 4.....	\$ 29.54	22.31

FOOTNOTES:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts shall receive \$0.25 per hour above the applicable wage rate. This shall not apply to workers entitled to receive the wage rate set forth in Group 1-a below.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Cast-in- place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker including Leade Abatement; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and bucket; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or

over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. "Sewer cleaner" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds. All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically

covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: Final clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification "material cleaner" is to be utilized under the following conditions:

- A: at demolition site for the salvage of the material.
- B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job.
- C: for the cleaning of salvage material at the jobsite or temporary jobsite yard.

The material cleaner classification should not be used in the performance of "form stripping, cleaning and oiling and moving to the next point of erection".

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Structural Nozzleman

GROUP 2: Nozzleman, Gunman, Potman, Groundman

GROUP 3: Reboundman

GROUP 4: Gunitite laborer

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

LAB00261-011 07/01/2022

SAN FRANCISCO AND SAN MATEO COUNTIES:

	Rates	Fringes
MASON TENDER, BRICK.....	\$ 36.05	27.12

FOOTNOTES: Underground work such as sewers, manholes, catch basins, sewer pipes, telephone conduits, tunnels and cut trenches: \$5.00 per day additional. Work in live sewage: \$2.50 per day additional.

LAB00261-014 07/01/2022

SAN FRANCISCO AND SAN MATEO COUNTIES:

	Rates	Fringes
PLASTER TENDER.....	\$ 40.48	30.23

Work on a swing stage scaffold: \$1.00 per hour additional.

LAB00270-003 06/28/2021

AREA A: SANTA CLARA

AREA B: MONTEREY, SAN BENITO AND SANTA CRUZ COUNTIES

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		
Escort Driver, Flag Person		
Area A.....	\$ 34.48	26.21
Area B.....	\$ 33.48	26.21
Traffic Control Person I		
Area A.....	\$ 34.78	26.21
Area B.....	\$ 33.78	26.21
Traffic Control Person II		
Area A.....	\$ 32.28	26.21
Area B.....	\$ 31.28	26.21

TRAFFIC CONTROL PERSON I: Layout of traffic control, crash cushions, construction area and roadside signage.

TRAFFIC CONTROL PERSON II: Installation and removal of temporary/permanent signs, markers, delineators and crash cushions.

LAB00270-004 06/26/2023

MONTEREY, SAN BENITO, SANTA CLARA, AND SANTA CRUZ COUNTIES

	Rates	Fringes
Tunnel and Shaft Laborers:		
GROUP 1.....	\$ 45.89	27.72
GROUP 2.....	\$ 45.66	27.72
GROUP 3.....	\$ 45.41	27.72
GROUP 4.....	\$ 44.96	27.72
GROUP 5.....	\$ 44.42	27.72
Shotcrete Specialist.....	\$ 46.41	27.72

TUNNEL AND SHAFT CLASSIFICATIONS

GROUP 1: Diamond driller; Groundmen; Gunitite and shotcrete nozzlemen

GROUP 2: Rodmen; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powdermen, heading; Cherry pickermen - where car is lifted; Concrete finisher in tunnel; Concrete screedman; Grout pumpman and potman; Gunite & shotcrete gunman & potman; Headermen; High pressure nozzleman; Miner - tunnel, including top and bottom man on shaft and raise work; Nipper; Nozzleman on slick line; Sandblaster - potman, Robotic Shotcrete Placer, Segment Erector, Tunnel Muck Hauler, Steel Form raiser and setter; Timberman, retimberman (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powderman - primer house

GROUP 4: Vibrator operator, pavement breaker; Bull gang - muckers, trackmen; Concrete crew - includes rodding and spreading, Dumpmen (any method)

GROUP 5: Grout crew; Reboundman; Swamper/ Brakeman

LAB00270-005 07/01/2022

MONTEREY AND SAN BENITO COUNTIES

	Rates	Fringes
LABORER		
Mason Tender-Brick.....	\$ 35.29	25.21

LAB00270-007 06/25/2018

MONTEREY, SAN BENITO, AND SANTA CRUZ, COUNTIES

	Rates	Fringes
LABORER (CONSTRUCTION CRAFT LABORERS - AREA B)		
Construction Specialist		
Group.....	\$ 30.40	23.20
GROUP 1.....	\$ 29.79	23.20
GROUP 1-a.....	\$ 30.01	23.20
GROUP 1-c.....	\$ 29.84	23.20
GROUP 1-e.....	\$ 30.34	23.20
GROUP 1-f.....	\$ 30.37	23.20
GROUP 2.....	\$ 29.64	23.20
GROUP 3.....	\$ 29.54	23.20
GROUP 4.....	\$ 23.23	23.20

See groups 1-b and 1-d under laborer classifications.

LABORER (GARDENERS,
HORTICULTURAL & LANDSCAPE
LABORERS - AREA B)

(1) New Construction.....\$ 29.54	23.20
(2) Establishment Warranty Period.....\$ 23.23	23.20

LABORER (GUNITE - AREA B)

GROUP 1.....\$ 29.75	22.31
GROUP 2.....\$ 29.25	22.31
GROUP 3.....\$ 28.66	22.31
GROUP 4.....\$ 28.54	22.31

LABORER (WRECKING - AREA B)

GROUP 1.....\$ 29.79	23.20
GROUP 2.....\$ 29.64	23.20

FOOTNOTES:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts shall receive \$0.25 per hour above the applicable wage rate. This shall not apply to workers entitled to receive the wage rate set forth in Group 1-a below.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Cast-in- place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker including Leade Abatement; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and bucket; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting,

whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. "Sewer cleaner" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds. All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts

thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: Final clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification "material cleaner" is to be utilized under the following conditions:

- A: at demolition site for the salvage of the material.
- B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job.
- C: for the cleaning of salvage material at the jobsite or temporary jobsite yard.

The material cleaner classification should not be used in the performance of "form stripping, cleaning and oiling and moving to the next point of erection".

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Structural Nozzleman

GROUP 2: Nozzleman, Gunman, Potman, Groundman

GROUP 3: Reboundman

GROUP 4: Gunitite laborer

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

LAB00270-010 06/25/2018

SANTA CLARA COUNTY

	Rates	Fringes
LABORER (CONSTRUCTION CRAFT		
LABORERS - AREA A:)		
Construction Specialist		
Group.....	\$ 31.49	23.20
GROUP 1.....	\$ 30.79	23.20
GROUP 1-a.....	\$ 31.01	23.20
GROUP 1-c.....	\$ 30.84	23.20
GROUP 1-e.....	\$ 31.34	23.20
GROUP 1-f.....	\$ 30.37	23.20
GROUP 2.....	\$ 30.64	23.20
GROUP 3.....	\$ 30.54	23.20
GROUP 4.....	\$ 24.23	23.20
See groups 1-b and 1-d under laborer classifications.		
LABORER (GARDENERS,		
HORTICULTURAL & LANDSCAPE		
LABORERS - AREA A:)		
(1) New Construction.....	\$ 30.54	23.20
(2) Establishment Warranty		
Period.....	\$ 24.23	23.20
LABORER (GUNITE - AREA A:)		
GROUP 1.....	\$ 30.75	22.31
GROUP 2.....	\$ 30.25	22.31

GROUP 3.....	\$ 29.66	22.31
GROUP 4.....	\$ 29.54	22.31
LABORER (WRECKING - AREA A:)		
GROUP 1.....	\$ 30.79	23.20
GROUP 2.....	\$ 30.64	23.20

FOOTNOTES:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts shall receive \$0.25 per hour above the applicable wage rate. This shall not apply to workers entitled to receive the wage rate set forth in Group 1-a below.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Cast-in- place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker including Leade Abatement; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and buckler; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun;

Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. "Sewer cleaner" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds. All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting

or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: Final clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification "material cleaner" is to be utilized under the following conditions:

- A: at demolition site for the salvage of the material.
- B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job.
- C: for the cleaning of salvage material at the jobsite or temporary jobsite yard.

The material cleaner classification should not be used in the performance of "form stripping, cleaning and oiling and moving to the next point of erection".

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Structural Nozzleman

GROUP 2: Nozzleman, Gunman, Potman, Groundman

GROUP 3: Reboundman

GROUP 4: Gunitite laborer

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

LAB00270-011 07/01/2022

MONTEREY, SAN BENITO, SANTA CRUZ, SANTA CLARA COUNTIES

	Rates	Fringes
LABORER (Plaster Tender).....	\$ 39.23	29.59

Work on a swing stage scaffold: \$1.00 per hour additional.

LAB00294-001 07/01/2022

FRESNO, KINGS AND MADERA COUNTIES

	Rates	Fringes
LABORER (Brick)		
Mason Tender-Brick.....	\$ 35.29	25.21

LAB00294-002 06/28/2021

FRESNO, KINGS, AND MADERA COUNTIES

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		
Escort Driver, Flag Person..	\$ 33.48	26.21
Traffic Control Person I....	\$ 33.78	26.21
Traffic Control Person II...	\$ 31.28	26.21

TRAFFIC CONTROL PERSON I: Layout of traffic control, crash cushions, construction area and roadside signage.

TRAFFIC CONTROL PERSON II: Installation and removal of temporary/permanent signs, markers, delineators and crash cushions.

LAB00294-005 06/26/2023

FRESNO, KINGS, AND MADERA COUNTIES

	Rates	Fringes
Tunnel and Shaft Laborers:		
GROUP 1.....	\$ 45.89	27.72
GROUP 2.....	\$ 45.66	27.72
GROUP 3.....	\$ 45.41	27.72
GROUP 4.....	\$ 44.96	27.72
GROUP 5.....	\$ 44.42	27.72
Shotcrete Specialist.....	\$ 46.41	27.72

TUNNEL AND SHAFT CLASSIFICATIONS

GROUP 1: Diamond driller; Groundmen; Guniting and shotcrete nozzlemen

GROUP 2: Rodmen; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powdermen, heading; Cherry pickermen - where car is lifted; Concrete finisher in tunnel; Concrete screedman; Grout pumpman and potman; Guniting & shotcrete gunman & potman; Headermen; High pressure nozzleman; Miner - tunnel, including top and bottom man on shaft and raise work; Nipper; Nozzleman on slick line; Sandblaster - potman, Robotic Shotcrete Placer, Segment Erector, Tunnel Muck Hauler, Steel Form raiser and setter; Timberman, retimberman (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powderman - primer house

GROUP 4: Vibrator operator, pavement breaker; Bull gang - muckers, trackmen; Concrete crew - includes rodding and spreading, Dumpmen (any method)

GROUP 5: Grout crew; Reboundman; Swamper/ Brakeman

LAB00294-008 06/25/2018

FRESNO, KINGS, AND MADERA COUNTIES

	Rates	Fringes
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LABORER (CONSTRUCTION CRAFT

LABORERS - AREA B:)

Construction Specialist

Group.....	\$ 30.49	23.20
GROUP 1.....	\$ 29.79	23.20
GROUP 1-a.....	\$ 30.01	23.20
GROUP 1-c.....	\$ 29.84	23.20
GROUP 1-e.....	\$ 30.34	23.20
GROUP 1-f.....	\$ 30.37	23.20
GROUP 2.....	\$ 29.64	23.20
GROUP 3.....	\$ 29.54	23.20
GROUP 4.....	\$ 23.23	23.20

See groups 1-b and 1-d under laborer classifications.

LABORER (GARDENERS,
HORTICULTURAL & LANDSCAPE

LABORERS - AREA B:)

(1) New Construction.....	\$ 29.54	23.20
(2) Establishment Warranty Period.....	\$ 23.23	23.20

LABORER (GUNITE - AREA B:)

GROUP 1.....	\$ 29.75	22.31
GROUP 2.....	\$ 29.25	22.31
GROUP 3.....	\$ 28.66	22.31
GROUP 4.....	\$ 28.54	22.31

LABORER (WRECKING - AREA B:)

GROUP 1.....	\$ 29.79	23.20
GROUP 2.....	\$ 29.64	23.20

FOOTNOTES:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts shall receive \$0.25 per hour above the applicable wage rate. This shall not apply to workers entitled to receive the wage rate set forth in Group 1-a below.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Cast-in- place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker including Leade Abatement;

Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and buckler; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. ""Sewer cleaner"" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers'

work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds. All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: Final clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification ""material

cleaner" is to be utilized under the following conditions:
 A: at demolition site for the salvage of the material.
 B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job.
 C: for the cleaning of salvage material at the jobsite or temporary jobsite yard.

The material cleaner classification should not be used in the performance of "form stripping, cleaning and oiling and moving to the next point of erection".

GUNITE LABORER CLASSIFICATIONS

- GROUP 1: Structural Nozzleman
- GROUP 2: Nozzleman, Gunman, Potman, Groundman
- GROUP 3: Reboundman
- GROUP 4: Guniting laborer

WRECKING WORK LABORER CLASSIFICATIONS

- GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)
- GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

LAB00294-010 07/01/2022

CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS & TUOLUMNE

	Rates	Fringes
Plasterer tender.....	\$ 38.02	28.25
Work on a swing stage scaffold: \$1.00 per hour additional.		

LAB00294-011 07/01/2022

FRESNO, KINGS, AND MADERA COUNTIES

	Rates	Fringes
LABORER (Plaster Tender).....	\$ 38.02	28.25

Work on a swing stage scaffold: \$1.00 per hour additional.

LAB00304-002 06/28/2021

ALAMEDA COUNTY

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		
Escort Driver, Flag Person..	\$ 34.48	26.21
Traffic Control Person I....	\$ 34.78	26.21
Traffic Control Person II...	\$ 32.28	26.21

TRAFFIC CONTROL PERSON I: Layout of traffic control, crash cushions, construction area and roadside signage.

TRAFFIC CONTROL PERSON II: Installation and removal of temporary/permanent signs, markers, delineators and crash cushions.

LAB00304-003 06/26/2023

ALAMEDA COUNTY

	Rates	Fringes
Tunnel and Shaft Laborers:		
GROUP 1.....	\$ 45.89	27.72
GROUP 2.....	\$ 45.66	27.72
GROUP 3.....	\$ 45.41	27.72
GROUP 4.....	\$ 44.96	27.72
GROUP 5.....	\$ 44.42	27.72
Shotcrete Specialist.....	\$ 46.41	27.72

TUNNEL AND SHAFT CLASSIFICATIONS

GROUP 1: Diamond driller; Groundmen; Gunite and shotcrete nozzlemen

GROUP 2: Rodmen; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powdermen, heading; Cherry pickermen - where car is lifted; Concrete finisher

in tunnel; Concrete screedman; Grout pumpman and potman; Guniting & shotcrete gunman & potman; Headermen; High pressure nozzleman; Miner - tunnel, including top and bottom man on shaft and raise work; Nipper; Nozzleman on slick line; Sandblaster - potman, Robotic Shotcrete Placer, Segment Erector, Tunnel Muck Hauler, Steel Form raiser and setter; Timberman, retimberman (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powderman - primer house

GROUP 4: Vibrator operator, pavement breaker; Bull gang - muckers, trackmen; Concrete crew - includes rodding and spreading, Dumpmen (any method)

GROUP 5: Grout crew; Reboundman; Swamper/ Brakeman

LAB00304-004 06/25/2018

ALAMEDA COUNTY

	Rates	Fringes
LABORER (CONSTRUCTION CRAFT LABORERS - AREA A:)		
Construction Specialist		
Group.....	\$ 31.49	23.20
GROUP 1.....	\$ 30.79	23.20
GROUP 1-a.....	\$ 31.01	23.20
GROUP 1-c.....	\$ 30.84	23.20
GROUP 1-e.....	\$ 31.34	23.20
GROUP 1-f.....	\$ 30.37	23.20
GROUP 2.....	\$ 30.64	23.20
GROUP 3.....	\$ 30.54	23.20
GROUP 4.....	\$ 24.23	23.20
See groups 1-b and 1-d under laborer classifications.		
LABORER (GARDENERS, HORTICULTURAL & LANDSCAPE LABORERS - AREA A:)		
(1) New Construction.....	\$ 30.54	23.20
(2) Establishment Warranty Period.....	\$ 24.23	23.20
LABORER (GUNITING - AREA A:)		
GROUP 1.....	\$ 30.75	22.31
GROUP 2.....	\$ 30.25	22.31
GROUP 3.....	\$ 29.66	22.31
GROUP 4.....	\$ 29.54	22.31
LABORER (WRECKING - AREA A:)		
GROUP 1.....	\$ 30.79	23.20
GROUP 2.....	\$ 30.64	23.20

FOOTNOTES:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts shall receive \$0.25 per hour above the applicable wage rate. This shall not apply to workers entitled to receive the wage rate set forth in Group 1-a below.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Cast-in- place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker including Leade Abatement; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and bucket; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and

rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. "Sewer cleaner" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds. All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and

grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: Final clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification "material cleaner" is to be utilized under the following conditions:

- A: at demolition site for the salvage of the material.
- B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job.
- C: for the cleaning of salvage material at the jobsite or temporary jobsite yard.

The material cleaner classification should not be used in the performance of "form stripping, cleaning and oiling and moving to the next point of erection".

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Structural Nozzleman

GROUP 2: Nozzleman, Gunman, Potman, Groundman

GROUP 3: Reboundman

GROUP 4: Gunite laborer

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

LAB00304-005 07/01/2022

ALAMEDA COUNTY

	Rates	Fringes
Brick Tender.....	\$ 36.05	27.12

FOOTNOTES: Work on jobs where heat-protective clothing is required: \$2.00 per hour additional. Work at grinders: \$.25 per hour additional. Manhole work: \$2.00 per day additional.

LAB00304-008 07/01/2022

ALAMEDA AND CONTRA COSTA COUNTIES:

	Rates	Fringes
Plasterer tender.....	\$ 40.48	30.23

Work on a swing stage scaffold: \$1.00 per hour additional.

LAB00324-002 06/28/2021

CONTRA COSTA COUNTY

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		
Escort Driver, Flag Person..	\$ 34.48	26.21
Traffic Control Person I....	\$ 34.78	26.21
Traffic Control Person II...	\$ 32.28	26.21

TRAFFIC CONTROL PERSON I: Layout of traffic control, crash cushions, construction area and roadside signage.

TRAFFIC CONTROL PERSON II: Installation and removal of temporary/permanent signs, markers, delineators and crash cushions.

LAB00324-006 06/26/2023

CONTRA COSTA COUNTY

	Rates	Fringes
Tunnel and Shaft Laborers:		
GROUP 1.....	\$ 45.89	27.72
GROUP 2.....	\$ 45.66	27.72
GROUP 3.....	\$ 45.41	27.72
GROUP 4.....	\$ 44.96	27.72
GROUP 5.....	\$ 44.42	27.72
Shotcrete Specialist.....	\$ 46.41	27.72

TUNNEL AND SHAFT CLASSIFICATIONS

GROUP 1: Diamond driller; Groundmen; Gunite and shotcrete nozzlelemen

GROUP 2: Rodmen; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powdermen, heading; Cherry pickermen - where car is lifted; Concrete finisher in tunnel; Concrete screedman; Grout pumpman and potman; Gunite & shotcrete gunman & potman; Headermen; High pressure nozzleman; Miner - tunnel, including top and bottom man on shaft and raise work; Nipper; Nozzleman on slick line; Sandblaster - potman, Robotic Shotcrete Placer, Segment Erector, Tunnel Muck Hauler, Steel Form raiser and setter; Timberman, retimberman (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powderman - primer house

GROUP 4: Vibrator operator, pavement breaker; Bull gang - muckers, trackmen; Concrete crew - includes rodding and spreading, Dumpmen (any method)

GROUP 5: Grout crew; Reboundman; Swamper/ Brakeman

LAB00324-012 06/25/2018

CONTRA COSTA COUNTY

	Rates	Fringes
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LABORER (CONSTRUCTION CRAFT
LABORERS - AREA A:)

Construction Specialist

Group.....	\$ 31.49	23.20
GROUP 1.....	\$ 30.79	23.20
GROUP 1-a.....	\$ 31.01	23.20
GROUP 1-c.....	\$ 30.84	23.20
GROUP 1-e.....	\$ 31.34	23.20
GROUP 1-f.....	\$ 30.37	23.20
GROUP 1-g.....	\$ 30.99	23.20
GROUP 2.....	\$ 30.64	23.20
GROUP 3.....	\$ 30.54	23.20
GROUP 4.....	\$ 24.23	23.20

See groups 1-b and 1-d under laborer classifications.

LABORER (GARDENERS,
HORTICULURAL & LANDSCAPE
LABORERS - AREA A:)

(1) New Construction.....	\$ 30.54	23.20
(2) Establishment Warranty Period.....	\$ 24.23	23.20

LABORER (GUNITE - AREA A:)

GROUP 1.....	\$ 30.75	22.31
GROUP 2.....	\$ 30.25	22.31
GROUP 3.....	\$ 29.66	22.31
GROUP 4.....	\$ 29.54	22.31

LABORER (WRECKING - AREA A:)

GROUP 1.....	\$ 30.79	23.20
GROUP 2.....	\$ 30.64	23.20

FOOTNOTES:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts shall receive \$0.25 per hour above the applicable wage rate. This shall not apply to workers entitled to receive the wage rate set forth in Group 1-a below.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Cast-in- place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker including Leade Abatement;

Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and buckler; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. ""Sewer cleaner"" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers'

work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds. All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 1-g, CONTRA COSTA COUNTY: Pipelayer (including grade checking in connection with pipelaying); Caulker; Bander; Pipewrapper; Conduit layer; Plastic pipe layer; Pressure pipe tester; No joint pipe and stripping of same, including repair of voids; Precast manhole setters, cast in place manhole form setters

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction

track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: Final clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification "material cleaner" is to be utilized under the following conditions:

- A: at demolition site for the salvage of the material.
- B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job.
- C: for the cleaning of salvage material at the jobsite or temporary jobsite yard.

The material cleaner classification should not be used in the performance of "form stripping, cleaning and oiling and moving to the next point of erection".

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Structural Nozzleman

GROUP 2: Nozzleman, Gunman, Potman, Groundman

GROUP 3: Reboundman

GROUP 4: Guniting laborer

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

GROUP 1-g, CONTRA COSTA COUNTY: Pipelayer (including grade checking in connection with pipelaying); Caulker; Bander; Pipewrapper; Conduit layer; Plastic pipe layer; Pressure pipe tester; No joint pipe and stripping of same, including repair of voids; Precast manhole setters, cast in place manhole form setters

CONTRA COSTA COUNTY:

	Rates	Fringes
Brick Tender.....	\$ 36.05	27.12

FOOTNOTES: Work on jobs where heat-protective clothing is required: \$2.00 per hour additional. Work at grinders: \$.25 per hour additional. Manhole work: \$2.00 per day additional.

LAB00324-018 07/01/2022

ALAMEDA AND CONTRA COSTA COUNTIES:

	Rates	Fringes
Plasterer tender.....	\$ 40.48	30.23

Work on a swing stage scaffold: \$1.00 per hour additional.

LAB01130-002 06/28/2021

MARIPOSA, MERCED, STANISLAUS, AND TUOLUMNE COUNTIES

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		
Escort Driver, Flag Person..	\$ 33.48	26.21
Traffic Control Person I....	\$ 33.78	26.21
Traffic Control Person II...	\$ 31.28	26.21

TRAFFIC CONTROL PERSON I: Layout of traffic control, crash cushions, construction area and roadside signage.

TRAFFIC CONTROL PERSON II: Installation and removal of temporary/permanent signs, markers, delineators and crash cushions.

LAB01130-003 06/26/2017

MARIPOSA, MERCED, STANISLAUS, AND TUOLUMNE COUNTIES

	Rates	Fringes
Tunnel and Shaft Laborers:		
GROUP 1.....	\$ 36.60	24.83

GROUP 2.....	\$ 36.37	24.83
GROUP 3.....	\$ 36.12	24.83
GROUP 4.....	\$ 35.67	24.83
GROUP 5.....	\$ 35.13	24.83
Shotcrete Specialist.....	\$ 37.12	24.83

TUNNEL AND SHAFT CLASSIFICATIONS

GROUP 1: Diamond driller; Groundmen; Gunite and shotcrete nozzlemen

GROUP 2: Rodmen; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powdermen, heading; Cherry pickermen - where car is lifted; Concrete finisher in tunnel; Concrete screedman; Grout pumpman and potman; Gunite & shotcrete gunman & potman; Headermen; High pressure nozzleman; Miner - tunnel, including top and bottom man on shaft and raise work; Nipper; Nozzleman on slick line; Sandblaster - potman, Robotic Shotcrete Placer, Segment Erector, Tunnel Muck Hauler, Steel Form raiser and setter; Timberman, retimberman (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powderman - primer house

GROUP 4: Vibrator operator, pavement breaker; Bull gang - muckers, trackmen; Concrete crew - includes rodding and spreading, Dumpmen (any method)

GROUP 5: Grout crew; Reboundman; Swamper/ Brakeman

LAB01130-005 07/01/2022

MARIPOSA, MERCED, STANISLAUS AND TUOLUMNE COUNTIES

	Rates	Fringes
LABORER		
Mason Tender-Brick.....	\$ 35.29	25.21

LAB01130-007 06/25/2018

MARIPOSA, MERCED, STANISLAUS, AND TUOLUMNE , COUNTIES

	Rates	Fringes
LABORER (CONSTRUCTION CRAFT LABORERS - AREA B:)		

Construction Specialist

Group.....	\$ 30.49	23.20
GROUP 1.....	\$ 29.79	23.20
GROUP 1-a.....	\$ 30.01	23.20
GROUP 1-c.....	\$ 29.84	23.20
GROUP 1-e.....	\$ 30.34	23.20
GROUP 1-f.....	\$ 29.37	23.20
GROUP 2.....	\$ 29.64	23.20
GROUP 3.....	\$ 29.54	23.20
GROUP 4.....	\$ 23.23	23.20

See groups 1-b and 1-d under laborer classifications.

LABORER (GARDENERS,
HORTICULTURAL & LANDSCAPE
LABORERS - AREA B:)

(1) New Construction.....	\$ 29.54	23.20
(2) Establishment Warranty Period.....	\$ 23.23	23.20

LABORER (GUNITE - AREA B:)

GROUP 1.....	\$ 29.75	22.31
GROUP 2.....	\$ 29.25	22.31
GROUP 3.....	\$ 28.66	22.31
GROUP 4.....	\$ 28.54	22.31

LABORER (WRECKING - AREA B:)

GROUP 1.....	\$ 29.79	23.20
GROUP 2.....	\$ 29.64	23.20

FOOTNOTES:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts shall receive \$0.25 per hour above the applicable wage rate. This shall not apply to workers entitled to receive the wage rate set forth in Group 1-a below.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Cast-in- place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker including Leade Abatement; Compactors of all types; Concrete and magnesite mixer, 1/2

yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and buckler; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. ""Sewer cleaner"" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds. All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: Final clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification ""material cleaner"" is to be utilized under the following conditions:

- A: at demolition site for the salvage of the material.
- B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job.
- C: for the cleaning of salvage material at the jobsite or temporary jobsite yard.

The material cleaner classification should not be used in the performance of "form stripping, cleaning and oiling and moving to the next point of erection".

GUNITE LABORER CLASSIFICATIONS

- GROUP 1: Structural Nozzleman
- GROUP 2: Nozzleman, Gunman, Potman, Groundman
- GROUP 3: Reboundman
- GROUP 4: Gunitite laborer

WRECKING WORK LABORER CLASSIFICATIONS

- GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)
- GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

LAB01130-008 07/01/2022

CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS & TUOLUMNE

	Rates	Fringes
Plasterer tender.....	\$ 38.02	28.25
Work on a swing stage scaffold:	\$1.00 per hour additional.	

LAB01130-009 07/01/2022

MARIPOSA, MERCED, STANISLAUS, AND TUOLUMNE COUNTIES

	Rates	Fringes
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LABORER (Plaster Tender).....\$ 38.02 28.25

Work on a swing stage scaffold: \$1.00 per hour additional.

PAIN0016-001 01/01/2023

ALAMEDA, CONTRA COSTA, MONTEREY, SAN BENITO, SAN MATEO, SANTA CLARA, AND SANTA CRUZ COUNTIES

	Rates	Fringes
Painters:.....	\$ 47.42	27.28

PREMIUMS:

EXOTIC MATERIALS - \$1.25 additional per hour.

SPRAY WORK: - \$0.50 additional per hour.

INDUSTRIAL PAINTING - \$0.25 additional per hour

[Work on industrial buildings used for the manufacture and processing of goods for sale or service; steel construction (bridges), stacks, towers, tanks, and similar structures]

HIGH WORK:

over 50 feet - \$2.00 per hour additional

100 to 180 feet - \$4.00 per hour additional

Over 180 feet - \$6.00 per hour additional

PAIN0016-003 07/01/2023

AREA 1: ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO & SANTA CLARA COUNTIES

AREA 2: CALAVERAS, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN JOAQUIN, SANTA CRUZ, STANISLAUS & TUOLUMNE COUNTIES

	Rates	Fringes
Drywall Finisher/Taper		
AREA 1.....	\$ 60.41	31.34
AREA 2.....	\$ 56.28	29.94

PAIN0016-012 01/01/2023

ALAMEDA, CONTRA COSTA, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA AND SANTA CRUZ COUNTIES

	Rates	Fringes
SOFT FLOOR LAYER.....	\$ 55.25	32.63

PAIN0016-015 01/01/2023

CALAVERAS, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS & TUOLUMNE
COUNTIES

	Rates	Fringes
PAINTER		
Brush.....	\$ 38.23	22.05

FOOTNOTES:

SPRAY/SANDBLAST: \$0.50 additional per hour.

EXOTIC MATERIALS: \$1.25 additional per hour.

HIGH TIME: Over 50 ft above ground or water level \$2.00
additional per hour. 100 to 180 ft above ground or water
level \$4.00 additional per hour. Over 180 ft above ground
or water level \$6.00 additional per hour.

PAIN0016-022 01/01/2023

SAN FRANCISCO COUNTY

	Rates	Fringes
PAINTER.....	\$ 51.04	27.28

PAIN0169-001 01/01/2023

FRESNO, KINGS, MADERA, MARIPOSA AND MERCED COUNTIES:

	Rates	Fringes
GLAZIER.....	\$ 44.33	28.88

PAIN0169-005 01/01/2023

ALAMEDA CONTRA COSTA, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN
MATEO, SANTA CLARA & SANTA CRUZ COUNTIES

	Rates	Fringes
GLAZIER.....	\$ 55.77	32.45

PAIN0294-004 07/01/2023

FRESNO, KINGS AND MADERA COUNTIES

	Rates	Fringes
PAINTER		
Brush, Roller.....	\$ 34.49	21.80
Drywall Finisher/Taper.....	\$ 35.74	21.80

FOOTNOTE:

Spray Painters & Paperhangers receive \$1.00 additional per hour. Painters doing Drywall Patching receive \$1.25 additional per hour. Lead Abaters & Sandblasters receive \$1.50 additional per hour. High Time - over 30 feet (does not include work from a lift) \$0.75 per hour additional.

PAIN0294-005 01/01/2023

FRESNO, KINGS & MADERA

	Rates	Fringes
SOFT FLOOR LAYER.....	\$ 38.53	23.19

PAIN0767-001 01/01/2023

CALAVERAS, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:

	Rates	Fringes
GLAZIER.....	\$ 43.15	33.72

PAID HOLIDAYS: New Year's Day, Martin Luther King, Jr. Day, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day.

Employee required to wear a body harness shall receive \$1.50 per hour above the basic hourly rate at any elevation.

PAIN1176-001 07/01/2022

HIGHWAY IMPROVEMENT

	Rates	Fringes
Parking Lot Striping/Highway		

Marking:

GROUP 1.....	\$ 40.83	17.62
GROUP 2.....	\$ 34.71	17.62
GROUP 3.....	\$ 35.11	17.62

CLASSIFICATIONS

GROUP 1: Striper: Layout and application of painted traffic stripes and marking; hot thermo plastic; tape, traffic stripes and markings

GROUP 2: Gamecourt & Playground Installer

GROUP 3: Protective Coating, Pavement Sealing

 PAIN1237-003 01/01/2023

CALAVERAS; SAN JOAQUIN COUNTIES; STANISLAUS AND TUOLUMNE COUNTIES:

	Rates	Fringes
SOFT FLOOR LAYER.....	\$ 46.24	25.96

 PLAS0066-002 07/01/2019

ALAMEDA, CONTRA COSTA, SAN MATEO AND SAN FRANCISCO COUNTIES:

	Rates	Fringes
PLASTERER.....	\$ 42.41	30.73

 PLAS0300-001 07/01/2018

	Rates	Fringes
PLASTERER		
AREA 188: Fresno.....	\$ 32.70	31.68
AREA 224: San Benito, Santa Clara, Santa Cruz.....	\$ 32.88	31.68
AREA 295: Calaveras & San Joaquin Counties.....	\$ 32.70	31.68
AREA 337: Monterey County..	\$ 32.88	31.68
AREA 429: Mariposa, Merced, Stanislaus, Tuolumne Counties.....	\$ 32.70	31.68

 PLAS0300-005 07/01/2016

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 32.15	23.27

PLUM0038-001 07/01/2022

SAN FRANCISCO COUNTY

	Rates	Fringes
PLUMBER (Plumber, Steamfitter, Refrigeration Fitter).....	\$ 82.00	48.18

PLUM0038-005 07/01/2022

SAN FRANCISCO COUNTY

	Rates	Fringes
Landscape/Irrigation Fitter (Underground/Utility Fitter).....	\$ 69.70	33.15

PLUM0062-001 07/01/2023

MONTEREY AND SANTA CRUZ COUNTIES

	Rates	Fringes
PLUMBER & STEAMFITTER.....	\$ 51.00	40.10

PLUM0159-001 07/01/2023

CONTRA COSTA COUNTY

	Rates	Fringes
Plumber and steamfitter		
(1) Refrigeration.....	\$ 63.33	46.64
(2) All other work.....	\$ 62.12	45.24

PLUM0246-001 01/01/2023

FRESNO, KINGS & MADERA COUNTIES

	Rates	Fringes
PLUMBER & STEAMFITTER.....	\$ 46.95	38.59

* PLUM0246-004 01/01/2017

FRESNO, MERCED & SAN JOAQUIN COUNTIES

	Rates	Fringes
PLUMBER (PIPE TRADESMAN).....	\$ 13.00 **	10.74

PIPE TRADESMAN SCOPE OF WORK:

Installation of corrugated metal piping for drainage, as well as installation of corrugated metal piping for culverts in connection with storm sewers and drains; Grouting, dry packing and diapering of joints, holes or chases including paving over joints, in piping; Temporary piping for dirt work for building site preparation; Operating jack hammers, pavement breakers, chipping guns, concrete saws and spades to cut holes, chases and channels for piping systems; Digging, grading, backfilling and ground preparation for all types of pipe to all points of the jobsite; Ground preparation including ground leveling, layout and planting of shrubbery, trees and ground cover, including watering, mowing, edging, pruning and fertilizing, the breaking of concrete, digging, backfilling and tamping for the preparation and completion of all work in connection with lawn sprinkler and landscaping; Loading, unloading and distributing materials at jobsite; Putting away materials in storage bins in jobsite secure storage area; Demolition of piping and fixtures for remodeling and additions; Setting up and tearing down work benches, ladders and job shacks; Clean-up and sweeping of jobsite; Pipe wrapping and waterproofing where tar or similar material is applied for protection of buried piping; Flagman

* PLUM0342-001 07/01/2023

ALAMEDA & CONTRA COSTA COUNTIES

	Rates	Fringes
PIPEFITTER CONTRA COSTA COUNTY.....	\$ 74.00	47.45
PLUMBER, PIPEFITTER, STEAMFITTER ALAMEDA COUNTY.....	\$ 74.00	47.45

PLUM0355-004 07/01/2022

ALAMEDA, CALAVERAS, CONTRA COSTA, FRESNO, KINGS, MADERA,
MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN JOAQUIN, SAN MATEO,

SANTA CLARA, SANTA CRUZ, STANISLAUS, AND TUOLUMNE COUNTIES:

	Rates	Fringes
Underground Utility Worker /Landscape Fitter.....	\$ 32.22	17.55

PLUM0393-001 07/01/2021		

SAN BENITO AND SANTA CLARA COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 68.76	46.63

PLUM0442-001 07/01/2023		

CALAVERAS, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS & TUOLUMNE COUNTIES

	Rates	Fringes
PLUMBER & STEAMFITTER.....	\$ 51.90	35.64

PLUM0467-001 07/01/2021		

SAN MATEO COUNTY

	Rates	Fringes
Plumber/Pipefitter/Steamfitter...	\$ 73.10	38.61

ROOF0027-002 01/01/2023		

FRESNO, KINGS, AND MADERA COUNTIES

	Rates	Fringes
ROOFER.....	\$ 41.31	15.31

FOOTNOTE: Work with pitch, pitch base of pitch impregnated products or any material containing coal tar pitch, on any building old or new, where both asphalt and pitchers are used in the application of a built-up roof or tear off: \$2.00 per hour additional.

ROOF0040-002 08/01/2023

SAN FRANCISCO & SAN MATEO COUNTIES:

	Rates	Fringes
ROOFER.....	\$ 52.43	22.19

ROOF0081-001 08/01/2023		

ALAMEDA AND CONTRA COSTA COUNTIES:

	Rates	Fringes
Roofer.....	\$ 52.47	22.31

ROOF0081-004 08/01/2023		

CALAVERAS, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:

	Rates	Fringes
ROOFER.....	\$ 46.73	21.36

ROOF0095-002 08/01/2023		

MONTEREY, SAN BENITO, SANTA CLARA, AND SANTA CRUZ COUNTIES:

	Rates	Fringes
ROOFER		
Bitumastic, Enameler, Coal		
Tar, Pitch and Mastic		
worker.....	\$ 57.17	21.51
Journeyman.....	\$ 53.17	21.51
Kettle person (2 kettles)...	\$ 55.17	21.51

SFCA0483-001 08/01/2023		

ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO AND SANTA CLARA COUNTIES:

	Rates	Fringes
SPRINKLER FITTER (FIRE).....	\$ 75.09	37.95

SFCA0669-011 04/01/2023		

CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, MONTEREY,
 SAN BENITO, SAN JOAQUIN, SANTA CRUZ, STANISLAUS AND TUOLUMNE
 COUNTIES:

	Rates	Fringes
SPRINKLER FITTER.....	\$ 44.32	27.25

SHEE0104-001 07/01/2020		

AREA 1: ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO, SANTA
 CLARA

AREA 2: MONTEREY & SAN BENITO

AREA 3: SANTA CRUZ

	Rates	Fringes
SHEET METAL WORKER		
AREA 1:		
Mechanical Contracts		
under \$200,000.....	\$ 55.92	45.29
All Other Work.....	\$ 64.06	46.83
AREA 2.....	\$ 52.90	36.44
AREA 3.....	\$ 55.16	34.18

SHEE0104-003 07/01/2021

CALAVERAS AND SAN JOAQUIN COUNTIES:

	Rates	Fringes
SHEET METAL WORKER.....	\$ 44.34	39.22

SHEE0104-005 07/01/2021

MARIPOSA, MERCED, STANISLAUS AND TUOLUMNE COUNTIES:

	Rates	Fringes
SHEET METAL WORKER (Excluding metal deck and siding).....	\$ 41.28	45.41

SHEE0104-007 07/01/2021

FRESNO, KINGS, AND MADERA COUNTIES:

	Rates	Fringes
SHEET METAL WORKER.....	\$ 44.07	40.79

SHEE0104-015 07/01/2020		

ALAMEDA, CONTRA COSTA, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA AND SANTA CRUZ COUNTIES:

	Rates	Fringes
SHEET METAL WORKER (Metal Decking and Siding only).....	\$ 44.45	35.55

SHEE0104-018 07/01/2020		

CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:

	Rates	Fringes
Sheet metal worker (Metal decking and siding only).....	\$ 44.45	35.55

TEAM0094-001 07/01/2022		

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 36.95	31.14
GROUP 2.....	\$ 37.25	31.14
GROUP 3.....	\$ 37.55	31.14
GROUP 4.....	\$ 37.90	31.14
GROUP 5.....	\$ 38.25	31.14

FOOTNOTES:

Articulated dump truck; Bulk cement spreader (with or without auger); Dumpcrete truck; Skid truck (debris box); Dry pre-batch concrete mix trucks; Dumpster or similar type; Slurry truck: Use dump truck yardage rate. Heater planer; Asphalt burner; Scarifier burner; Industrial lift truck (mechanical tailgate); Utility and clean-up truck: Use appropriate rate for the power unit or the equipment utilized.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Dump trucks, under 6 yds.; Single unit flat rack (2-axle unit); Nipper truck (when flat rack truck is used appropriate flat rack shall apply); Concrete pump truck (when flat rack truck is used appropriate flat rack shall apply); Concrete pump machine; Fork lift and lift jitneys; Fuel and/or grease truck driver or fuel person; Snow buggy; Steam cleaning; Bus or personhaul driver; Escort or pilot car driver; Pickup truck; Teamster oiler/greaser and/or serviceperson; Hook tender (including loading and unloading); Team driver; Tool room attendant (refineries)

GROUP 2: Dump trucks, 6 yds. and under 8 yds.; Transit mixers, through 10 yds.; Water trucks, under 7,000 gals.; Jetting trucks, under 7,000 gals.; Single-unit flat rack (3-axle unit); Highbed heavy duty transport; Scissor truck; Rubber-tired muck car (not self-loaded); Rubber-tired truck jumbo; Winch truck and "A" frame drivers; Combination winch truck with hoist; Road oil truck or bootperson; Buggymobile; Ross, Hyster and similar straddle carriers; Small rubber-tired tractor

GROUP 3: Dump trucks, 8 yds. and including 24 yds.; Transit mixers, over 10 yds.; Water trucks, 7,000 gals. and over; Jetting trucks, 7,000 gals. and over; Vacuum trucks under 7500 gals. Trucks towing tilt bed or flat bed pull trailers; Lowbed heavy duty transport; Heavy duty transport tiller person; Self-propelled street sweeper with self-contained refuse bin; Boom truck - hydro-lift or Swedish type extension or retracting crane; P.B. or similar type self-loading truck; Tire repairperson; Combination bootperson and road oiler; Dry distribution truck (A bootperson when employed on such equipment, shall receive the rate specified for the classification of road oil trucks or bootperson); Ammonia nitrate distributor, driver and mixer; Snow Go and/or plow

GROUP 4: Dump trucks, over 25 yds. and under 65 yds.; Water pulls - DW 10's, 20's, 21's and other similar equipment when pulling Aqua/pak or water tank trailers; Helicopter pilots (when transporting men and materials); Lowbed Heavy Duty Transport up to including 7 axles; DW10's, 20's, 21's and other similar Cat type, Terra Cobra, LeTourneau Pulls, Tourno rocker, Euclid and similar type equipment when pulling fuel and/or grease tank trailers or other miscellaneous trailers; Vacuum Trucks 7500 gals and over and truck repairman

GROUP 5: Dump trucks, 65 yds. and over; Holland hauler; Low bed Heavy Duty Transport over 7 axles

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$16.20) or 13658 (\$12.15). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage

payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

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Appendix E

HUD FORM 4010

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section I(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part

of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been

communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who

is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by

the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be

awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety. The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.

(3) The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

Appendix F

CONSTRUCTION AND DEMOLITION DEBRIS WASTE MANAGEMENT PLAN (WMP)



CITY OF PITTSBURG
 65 Civic Avenue
 Pittsburg, CA 94565

For City Use Only	
Project No. _____	
Date _____	Fee \$ _____
<input type="checkbox"/> Approved WMP	
<input type="checkbox"/> Approved Infeasibility Exemption	

CONSTRUCTION AND DEMOLITION DEBRIS WASTE MANAGEMENT PLAN (WMP)

The City of Pittsburg C&D Recycling and Waste Management requirement states that at least 65% diversion of job-site waste materials from the landfill. In order to process the application request, the following form must be completed, signed and submitted with an application fee.

- WMP Application Approval Request WMP Infeasibility Exemption Request

Property Owner Name/Ph.# _____
 Job-site Address: _____
 Contractor/Project Manager: _____
 Address: _____
 Phone Number: _____
 Cellular Phone Number: _____
 Fax Number: _____

Property Owner's Signature / Date

1. Briefly state how materials will be sorted for recycling and/or salvage on the job site. *See Waste Assessment Table on back page. Attach additional pages if necessary. *If no materials are targeted for recycling or salvage, please state why.*

2. Will this project require the use of sub-contractors? Yes No If yes, briefly state how you plan to inform and ensure participation by the sub-contractors of your job-site recycling and waste management responsibility.

WASTE ASSESSMENT TABLE

- I. BEFORE START OF PROJECT: Identify the type of materials to be recycled, salvaged or disposed from the job-site in **Section I** of the Waste Assessment table. Identify the handling procedure, hauler and/or destination of each material type.
- II. UPON COMPLETION OF PROJECT: **Section II** is to be filled out with supporting documentation upon completion of project. Indicate the material **types and quantities** recycled, salvaged or disposed from this job-site. Official weight tags must be submitted with this completed report identifying 1) job site address, 2) weight of load(s), 3) material type(s) and 4) if materials were recycled, salvaged or disposed.

Material Type ↓	Section I Identify materials (✓)			Handling procedure, hauler or final destination of materials* (See #1)	Section II Quantity of each material (lbs)			City Use Only Acceptable weight tag(s) (staff initials)
	Recycle	Salvage	Landfill		Recycled	Salvaged	Landfilled	
Asphalt & Concrete								
Brick, Tile								
Building materials-doors, windows, fixtures, cabinets								
Cardboard								
Dirt/Clean Fill								
Drywall								
Carpet padding/ Foam								
Plate/window Glass								
Scrap Metals (steel, aluminum, brass, copper, etc.)								
Unpainted Wood & Pallets								
Yard Trimmings (brush, trees, stumps, etc.)								
Other: (Hazardous Materials)								
Garbage								
TOTALS								% Recycled

FOR CITY USE ONLY – PROJECT COMPLETION (version 06-19)

- Full Compliance
 Good Faith Effort to Comply
 Non-Compliance

Staff Signature _____ / _____ Date

Appendix G

LAPM Exhibit 12-G Required Federal Aid Contract Language LAPM

EXHIBIT 12-G: REQUIRED FEDERAL-AID CONTRACT LANGUAGE
(For Local Assistance Construction Projects)

The following language must be incorporated into all Local Assistance Federal-aid construction contracts.
The following language, with minor edits, was taken from the Code of Federal Regulations.

MAINTAIN RECORDS AND SUBMIT REPORTS DOCUMENTING YOUR PERFORMANCE UNDER THIS SECTION

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1. DISADVANTAGED BUSINESS ENTERPRISES (DBE)

The contractor, subrecipient or subcontractor shall take necessary and reasonable steps to ensure that DBEs have opportunity to participate in the contract (49 CFR 26). To ensure equal participation of DBEs provided in 49 CFR 26.5, the Agency shows a contract goal for DBEs. The prime contractor shall make work available to DBEs and select work parts consistent with available DBE subcontractors and suppliers.

The prime contractor shall meet the DBE goal shown elsewhere in these special provisions or demonstrate that they made adequate Good Faith Efforts (GFE) to meet this goal. An adequate GFE means that the bidder must show that it took all necessary and reasonable steps to achieve a DBE goal that, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to meet the DBE goal.

If the DBE goal is not met, the contractor needs to complete and submit the DBE GFE documentation as described in Local Assistance Procedures Manual (LAPM) Chapter 9, Section 9.8 within 5 (five) days of bid opening.

It is the prime contractor's responsibility to verify that the DBE firm is certified as a DBE on the date of bid opening by using the California Unified Certification Program (CUCP) database and possesses the most specific available North American Industry Classification System (NAICS) codes and Work Code applicable to the type of work the firm will perform on the contract. Additionally, the prime contractor is responsible to document this verification by printing out the CUCP data for each DBE firm. A list of DBEs certified by the CUCP can be found at: <https://dot.ca.gov/programs/civil-rights/dbe-search>.

DBE participation will only count toward the California Department of Transportation's federally mandated statewide overall DBE goal if the DBE performs a commercially useful function under 49 CFR 26.55.

Credit for materials or supplies the prime contractor purchases from DBEs counts towards the goal in the following manner:

- 100 percent counts if the materials or supplies are obtained from a DBE manufacturer.
- 60 percent counts if the materials or supplies are obtained from a DBE regular dealer.
- Only fees, commissions, and charges for assistance in the procurement and delivery of materials or supplies count if obtained from a DBE that is neither a manufacturer nor regular dealer. 49 CFR 26.55 defines "manufacturer" and "regular dealer."

The prime contractor receives credit towards the goal if they employ a DBE trucking company that performs a commercially useful function as defined in 49 CFR 26.55(d) as follows:

- The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting DBE goals.
- The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
- The DBE receives credit for the total value of the transportation services it provides on the Contract using trucks it owns, insures, and operates using drivers it employs.
- The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the Contract.
- The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE that leases trucks equipped with drivers from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE leased trucks equipped with drivers not to exceed the value of transportation services on the contract provided by DBE-owned trucks or leased trucks with DBE employee drivers. Additional participation by non-DBE owned trucks equipped with drivers receives credit only for the fee or commission it receives as a result of the lease arrangement.
- The DBE may lease trucks without drivers from a non-DBE truck leasing company. If the DBE leases trucks from a non-DBE truck leasing company and uses its own employees as drivers, it is entitled to credit for the total value of these hauling services.

- A lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.

A. Nondiscrimination Statement

The contractor, subrecipient or subcontractor will never exclude any person from participation in, deny any person the benefits of, or otherwise discriminate against anyone in connection with the award and performance of any contract covered by 49 CFR 26 on the basis of race, color, sex, or national origin. In administering the Local Agency components of the DBE Program Plan, the contractor, subrecipient or subcontractor will not, directly, or through contractual or other arrangements, use criteria or methods of administration that have the effect of defeating or substantially impairing accomplishment of the objectives of the DBE Program Plan with respect to individuals of a particular race, color, sex, or national origin.

B. Contract Assurance

Under 49 CFR 26.13(b): The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of federal-aid contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

C. Prompt Progress Payment

In accordance with California Business and Professions Code section 7108.5, the prime contractor or subcontractor shall pay to any subcontractor, not later than seven days after receipt of each progress payment, unless otherwise agreed to in writing, the respective amounts allowed the contractor on account of the work performed by the subcontractors, to the extent of each subcontractor's interest therein. In the event that there is a good faith dispute over all or any portion of the amount due on a progress payment from the prime contractor or subcontractor to a subcontractor, the prime contractor or subcontractor may withhold no more than 150 percent of the disputed amount. Any violation of this requirement shall constitute a cause for disciplinary action and shall subject the licensee to a penalty, payable to the subcontractor, of 2 percent of the amount due per month for every month that payment is not made.

In any action for the collection of funds wrongfully withheld, the prevailing party shall be entitled to his or her attorney's fees and costs. The sanctions authorized under this requirement shall be separate from, and in addition to, all other remedies, either civil, administrative, or criminal. This clause applies to both DBE and non-DBE subcontractors.

D. Prompt Payment of Withheld Funds to Subcontractors

The Agency may hold retainage from the prime contractor and shall make prompt and regular incremental acceptances of portions, as determined by the Agency, of the contract work, and pay retainage to the prime contractor based on these acceptances. The Agency shall designate one of the methods below in the contract to ensure prompt and full payment of any retainage kept by the prime contractor or subcontractor to a subcontractor. The Agency shall include either Method 1, Method 2, or Method 3 below and delete the other two.

Method 1: No retainage will be held by the Agency from progress payments due to the prime contractor. Prime contractors and subcontractors are prohibited from holding retainage from subcontractors. Any delay or postponement of payment may take place only for good cause and with the Agency's prior written approval. Any violation of these provisions shall subject the violating contractor or subcontractor to the penalties, sanctions, and other remedies specified in Section 7108.5 of the California Business and Professions Code and Section 10262 of the California Public Contract Code. This requirement shall not be construed to limit or impair any contractual, administrative or judicial remedies, otherwise available to the

contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the contractor, deficient subcontractor performance and/or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

Method 2: No retainage will be held by the Agency from progress payments due to the prime contractor. Any retainage kept by the prime contractor or by a subcontractor must be paid in full to the earning subcontractor within seven (7) days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment may take place only for good cause and with the Agency's prior written approval. Any violation of these provisions shall subject the violating contractor or subcontractor to the penalties, sanctions, and remedies specified in Section 7108.5 of the California Business and Professions Code and Section 10262 of the California Public Contract Code. This requirement shall not be construed to limit or impair any contractual, administrative or judicial remedies, otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the contractor, deficient subcontractor performance and/or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

Method 3: The Agency shall hold retainage from the prime contractor and shall make prompt and regular incremental acceptances of portions, as determined by the Agency of the contract work and pay retainage to the prime contractor based on these acceptances. The prime contractor or subcontractor shall return all monies withheld in retention from all subcontractors within seven (7) days after receiving payment for work satisfactorily completed and accepted including incremental acceptances of portions of the contract work by the Agency. Any delay or postponement of payment may take place only for good cause and with the Agency's prior written approval. Any violation of these provisions shall subject the violating prime contractor or subcontractor to the penalties, sanctions, and other remedies specified in Section 7108.5 of the California Business and Professions Code and Section 10262 of the California Public Contract Code. This requirement shall not be construed to limit or impair any contractual, administrative or judicial remedies otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the contractor; deficient subcontractor performance and/or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

Any violation of these provisions of Prompt Progress Payment and Prompt Payment of Withheld Funds to Subcontractors shall subject the violating prime contractor or subcontractor to the penalties, sanctions and other remedies specified therein. These requirements shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the prime contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the prime contractor, deficient subcontract performance, or noncompliance by a subcontractor.

E. Termination and Replacement of DBE Subcontractors

The prime contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the contractor obtains the Agency's written consent. The prime contractor shall not terminate or replace a listed DBE for convenience and perform the work with their own forces or obtain materials from other sources without prior written authorization from the Agency. Unless the Agency's prior written consent is provided, the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE on the Exhibit 15-G Construction Contract DBE Commitment form, included in the Bid.

Termination of DBE Subcontractors

After a contract with a specified DBE goal has been executed, termination of a DBE may be allowed for the following, but not limited to, justifiable reasons with prior written authorization from the Agency:

1. Listed DBE fails or refuses to execute a written contract based on plans and specifications for the project.
2. The Local Agency stipulated that a bond is a condition of executing the subcontract and the listed DBE fails to meet the Local Agency's bond requirements.
3. Work requires a contractor's license and listed DBE does not have a valid license under Contractors License Law, or is not properly registered with the California Department of Industrial Relations as a public works contractor.
4. Listed DBE fails or refuses to perform the work or furnish the listed materials (failing or refusing to

perform is not an allowable reason to remove a DBE if the failure or refusal is a result of bad faith or discrimination).

5. Listed DBE's work is unsatisfactory and not in compliance with the contract.
6. Listed DBE is ineligible to work on the project because of suspension or debarment.
7. Listed DBE becomes bankrupt or insolvent or exhibits credit unworthiness.
8. Listed DBE voluntarily withdraws with written notice from the Contract
9. Listed DBE is ineligible to receive credit for the type of work required.
10. Listed DBE owner dies or becomes disabled resulting in the inability to perform the work on the Contract.
11. The Agency determines other documented good cause.

To terminate a DBE or to terminate a portion of a DBE's work, the contractor must use the following procedures:

1. Send a written notice to the DBE of Contractor's intent to use other forces or material sources and include one or more justifiable reasons listed above. Simultaneously send a copy of this written notice to the Agency. The written notice to the DBE must request they provide any response within five (5) business days to both the Contractor and the Agency by either acknowledging their agreement or documenting their reasoning as to why the use of other forces or sources of materials should not occur.
2. If the DBE does not respond within 5 business days, Contractor may move forward with the request as if the DBE had agreed to Contractor's written notice.
3. Submit Contractor's DBE termination request by written letter to the Agency and include:
 - One or more above listed justifiable reasons along with supporting documentation.
 - Contractor's written notice to the DBE regarding the request, including proof of transmission and tracking documentation of Contractor's written notice
 - The DBE's response to Contractor's written notice, if received. If a written response was not provided, provide a statement to that effect.

The Agency shall respond in writing to Contractor's DBE termination request within 5 business days.

Replacement of DBE Subcontractors

After receiving the Agency's written authorization of DBE termination request, the Contractor must obtain the Agency's written agreement for DBE replacement. The Contractor must find or demonstrate GFEs to find qualified DBE replacement firms to perform the work to the extent needed to meet the DBE commitment.

The following procedures shall be followed to request authorization to replace a DBE firm:

1. Submit a request to replace a DBE with other forces or material sources in writing to the Agency which must include:
 - a. Description of remaining uncommitted work items made available for replacement DBE solicitation and participation.
 - b. The proposed DBE replacement firm's business information, the work they have agreed to perform, and the following:
 - Quote for bid item work and description of work to be performed
 - Proposed subcontract agreement and written confirmation of agreement to perform on the Contract
 - Revised Subcontracting Request form
 - Revised Exhibit 15-G: Construction Contract DBE Commitment
2. If Contractor has not identified a DBE replacement firm, submit documentation of the Contractor's GFEs

to use DBE replacement firms within 7 days of Agency's authorization to terminate the DBE. The Contractor may request the Agency's approval to extend this submittal period to a total of 14 days. Submit documentation of actions taken to find a DBE replacement firm, such as:

- Search results of certified DBEs available to perform the original DBE work identified and/or other work the Contractor had intended to self-perform, to the extent needed to meet the DBE commitment
- Solicitations of DBEs for performance of work identified
- Correspondence with interested DBEs that may have included contract details and requirements
- Negotiation efforts with DBEs that reflect why an agreement was not reached
- If a DBE's quote was rejected, provide Contractor's reasoning for the rejection, such as why the DBE was unqualified for the work, or why the price quote was unreasonable or excessive
- Copies of each DBE's and non-DBE's price quotes for work identified, as the Agency may contact the firms to verify solicitation efforts and determine if the DBE quotes are substantially higher
- Additional documentation that supports the GFE

The Agency shall respond in writing to the Contractor's DBE replacement request within five (5) business days. The Contractor must submit a revised Subcontracting Request form if the replacement plan is authorized by the Agency.

F. Commitment and Utilization

The Agency's DBE program must include a monitoring and enforcement mechanism to ensure that DBE commitments reconcile to DBE utilization.

The bidder shall complete and sign Exhibit 15-G: Construction Contract DBE Commitment included in the contract documents regardless of whether DBE participation is reported. The bidder shall provide written confirmation from each DBE that the DBE is participating in the Contract. LAPM Exhibit 9-I: DBE Confirmation or equivalent form and DBE's quote must be submitted. The written confirmation must be submitted no later than 4pm on the 5th day after bid opening. If a DBE is participating as a joint venture partner, the bidder shall submit a copy of the joint venture agreement.

If the DBE Commitment form, Exhibit 15-G, is not submitted with the bid, it must be completed and submitted by all bidders to the Agency within five (5) days of bid opening. If the bidder does not submit the DBE Commitment form within the specified time, the Agency will find the bidder's bid nonresponsive.

The prime contractor shall use each DBE subcontractor as listed on Exhibit 15-G: Construction Contract DBE Commitment unless they receive written authorization for a termination or replacement from the Agency.

The Agency shall request the prime contractor to:

1. Notify the Resident Engineer or Inspector of any changes to its anticipated DBE participation
2. Provide this notification before starting the affected work
3. Maintain records including:
 - Name and business address of each 1st-tier subcontractor
 - Name and business address of each DBE subcontractor, DBE vendor, and DBE trucking company, regardless of tier
 - Date of payment and total amount paid to each DBE (see Exhibit 9-F: Monthly Disadvantaged Business Enterprise Payment)

If the prime contractor is a DBE contractor, they shall include the date of work performed by their own forces and the corresponding value of the work.

Before the 15th of each month, the prime contractor shall submit a Monthly DBE Trucking Verification (LAPM Exhibit 16-Z1) form.

If a DBE is decertified before completing its work, the DBE must notify the prime contractor in writing of the decertification date. If a business becomes a certified DBE before completing its work, the business must notify the prime contractor in writing of the certification date. The prime contractor shall submit the notifications. Upon work completion, the prime contractor shall complete a Disadvantaged Business Enterprises (DBE) Certification Status Change, Exhibit 17-O, form and submit the form within 30 days of contract acceptance.

Upon work completion, the prime contractor shall complete Exhibit 17-F: Final Report – Utilization of Disadvantaged Business Enterprises (DBE), First-Tier Subcontractors and submit it within 90 days of contract acceptance. The Agency will withhold \$10,000 until the form is submitted. The Agency releases the withhold upon submission of the completed form.

G. Running Tally of Attainments

For projects awarded on or after March 1, 2020, but before September 1, 2023:

After submitting an invoice for reimbursement that includes a payment to a DBE, but no later than the 10th of the following month, the prime contractor/consultant must complete and email the Exhibit 9-F: Disadvantaged Business Enterprise Running Tally of Payments to business.support.unit@dot.ca.gov with a copy to local administering agencies.

For projects that are awarded on or after September 1, 2023:

Exhibit 9-F is no longer required. Instead, by the 15th of the month following the month of any payment(s), the prime contractor must now submit Exhibit 9-P to the Local Agency administering the contract. If the Contractor does not make any payments to subcontractors, supplier(s) and/or manufacturers they must report “no payments were made to subs this month” and write this visibly and legibly on Exhibit 9-P.

H. Commercially Useful Function

DBEs must perform a commercially useful function (CUF) under 49 CFR 26.55 when performing work or supplying materials listed on the DBE Commitment form. The DBE value of work will only count toward the DBE commitment if the DBE performs a CUF. A DBE performs a CUF when it is responsible for execution of the work on the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. If a DBE does not perform or exercise responsibility for at least 30% of the total cost of its contract with its own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, it will be presumed that the DBE is not performing a CUF. Additionally, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material and installing (where applicable), and paying for the material itself.

The Contractor must perform CUF evaluation for each DBE company working on a federal-aid contract, with or without a DBE goal. Perform a CUF evaluation at the beginning of the DBE’s work, and continue to monitor the performance of CUF for the duration of the project.

The Contractor must provide written notification to the AGENCY at least 15 days in advance of each DBE's initial performance of work or supplying materials for the Contract. The notification must include the DBE's name, work the DBE will perform on the contract, and the location, date, and time of where their work will take place.

Within 10 (ten) days of a DBE initially performing work or supplying materials on the contract, the Contractor shall submit to the LPA the initial evaluation and validation of DBE performance of a CUF using the LAPM 9-J: Disadvantaged Business Enterprise Commercially Useful Function Evaluation. Include the following information with the submittal:

- Subcontract agreement with the DBE
- Purchase orders
- Bills of lading
- Invoices
- Proof of payment

The Contractor must monitor all DBE's performance of CUF by conducting quarterly evaluations and validations throughout their duration of work on the contract using the LAPM 9-J: DBE Commercially Useful Function Evaluation. The Contractor must submit to the AGENCY these quarterly evaluations and validations by the 5th of the month for the previous three (3) months of work.

The Contractor must notify the AGENCY immediately if the Contractor believes the DBE may not be performing a CUF.

The AGENCY will verify DBEs performance of CUF by reviewing the initial and quarterly submissions of LAPM 9-J: DBE Commercially Useful Function Evaluation, submitted supporting information, field observations, and through any additional AGENCY evaluations. The AGENCY must evaluate DBEs and their CUF performance throughout the duration of a Contract. The AGENCY will provide written notice to Contractor and DBE at least two (2) business days prior to any evaluation. The Contractor and DBE must participate in the evaluation. Upon completing the evaluation, the AGENCY must share the evaluation results with the Contractor and DBE. An evaluation could include items that must be remedied upon receipt. If the AGENCY determines the DBE is not performing a CUF the Contractor must suspend performance of the noncompliant work.

The Contractor and DBEs must submit any additional CUF related records and documents within five (5) business days of AGENCY's request such as:

- Proof of ownership or lease and rental agreements for equipment
- Tax records
- Employee rosters
- Certified payroll records
- Inventory rosters

Failure to submit required DBE Commercially Useful Function Evaluation forms or requested records and documents can result in withholding of payment for the value of work completed by the DBE.

If the Contractor and/or the AGENCY determine that a listed DBE is not performing a CUF in performance of their DBE committed work, immediately suspend performance of the noncompliant portion of the work. The AGENCY may deny payment for the noncompliant portion of the work. The AGENCY will ask the Contractor to submit a corrective action plan (CAP) to the AGENCY within five (5) days of the noncompliant CUF determination. The CAP must identify how the Contractor will correct the noncompliance findings for the remaining portion of the DBE's work. The AGENCY has five (5) days to review the CAP in conjunction with the prime contractor's review. The Contractor must implement the CAP within five (5) days of the AGENCY's approval. The AGENCY will then authorize the prior noncompliant portion of work for the DBE's committed work.

If corrective actions cannot be accomplished to ensure the DBE performs a CUF on the Contract, then the Contractor may have good cause to request termination of the DBE.

I. Use of Joint Checks

A joint check may be used between the Contractor or lower-tier subcontractor and a DBE subcontractor purchasing materials from a material supplier if the contractor obtains prior approval from the LPA for the proposed use of joint check upon submittal of the LAPM 9-K: DLA Disadvantaged Business Enterprises (DBE) Joint Check Agreement Request form.

To use a joint check, the following conditions must be met:

- All parties, including the Contractor, must agree to the use of a joint check
- Entity issuing the joint check acts solely to guarantee payment
- DBE must release the check to the material supplier
- LPA must authorize the request before implementation
- Any party to the agreement must provide requested documentation within 10 days of the LPA's request for the documentation
- Agreement to use a joint check must be short-term, not to exceed 1 year, allowing sufficient time needed to establish or increase a credit line with the material supplier

A request for a joint check agreement may be initiated by any party. If a joint check is used, the DBE remains responsible for all elements of 49 CFR 26.55(c)(1).

Failure to comply with the above requirements disqualifies DBE participation and results in no credit and no payment to the Contractor for DBE participation.

A joint check may not be used between the Contractor or subcontractor and a DBE regular dealer, bulk material supplier, manufacturer, wholesaler, broker, trucker, packager, manufacturer's representative, or other persons who arrange or expedite transactions.

2. BID OPENING

The Agency publicly opens and reads bids at the time and place shown on the Notice to Contractors.

3. BID RIGGING

The U.S. Department of Transportation (DOT) provides a toll-free hotline to report bid rigging activities. Use the hotline to report bid rigging, bidder collusion, and other fraudulent activities. The hotline number is (800) 424-9071. The service is available 24 hours 7 days a week and is confidential and anonymous. The hotline is part of the DOT's effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General.

4. CONTRACT AWARD

If the Agency awards the contract, the award is made to the lowest responsible and responsive bidder.

5. CONTRACTOR LICENSE

The Contractor must be properly licensed as a contractor from contract award through Contract acceptance (23 CFR 635.110).

6. CHANGED CONDITIONS

A. Differing Site Conditions

1. During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract, are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before the site is disturbed and before the affected work is performed.
2. Upon written notification, the engineer will investigate the conditions, and if it is determined that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding anticipated profits, will be made and the contract modified in writing accordingly. The engineer will notify the contractor of the determination whether or not an adjustment of the contract is warranted.
3. No contract adjustment which results in a benefit to the contractor will be allowed unless the contractor has provided the required written notice.
4. No contract adjustment will be allowed under this clause for any effects caused on unchanged work. *[This provision may be omitted by the Local Agency, at their option.]*

B. Suspensions of Work Ordered by the Engineer

1. If the performance of all or any portion of the work is suspended or delayed by the engineer in writing for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) and the contractor believes that additional compensation and/or contract time is due as a result of such suspension or delay, the contractor shall submit to the engineer in writing a request for adjustment within 7 calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.
2. Upon receipt, the engineer will evaluate the contractor's request. If the engineer agrees that the cost and/or time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the contractor, its suppliers, or subcontractors at any approved tier, and not caused by weather, the engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The contractor will be notified of the engineer's determination whether or not an adjustment of the contract is warranted.

3. No contract adjustment will be allowed unless the contractor has submitted the request for adjustment within the time prescribed.
4. No contract adjustment will be allowed under this clause to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided or excluded under any other term or condition of this contract.

C. Significant Changes in the Character of Work

1. The engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall not invalidate the contract nor release the surety, and the contractor agrees to perform the work as altered.
2. If the alterations or changes in quantities significantly change the character of the work under the contract, whether such alterations or changes are in themselves significant changes to the character of the work or by affecting other work cause such other work to become significantly different in character, an adjustment, excluding anticipated profit, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the contractor in such amount as the engineer may determine to be fair and equitable.
3. If the alterations or changes in quantities do not significantly change the character of the work to be performed under the contract, the altered work will be paid for as provided elsewhere in the contract.
4. The term "significant change" shall be construed to apply only to the following circumstances:
 - When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction; or
 - When a major item of work, as defined elsewhere in the contract, is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity. Any allowance for an increase in quantity shall apply only to that portion in excess of 125 percent of original contract item quantity, or in case of a decrease below 75 percent, to the actual amount of work performed.

7. BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES

The Contractor shall begin work within 15 calendar days after the issuance of the Notice to Proceed.

This work shall be diligently prosecuted to completion before the expiration of _____ WORKING DAYS beginning on the fifteenth calendar day after the date shown on the Notice to Proceed.

The Contractor shall pay to the City/County _____ the sum of \$ _____ per day, for each and every calendar days' delay in finishing the work in excess of the number of working days prescribed above.

8. BUY AMERICA

Buy America Requirements apply to steel and iron, manufactured products, and construction materials permanently incorporated into the project.

Steel and Iron Materials

All steel and iron materials must be melted and manufactured in the United States except:

1. Foreign pig iron and processed, pelletized, and reduced iron ore may be used in the domestic production of the steel and iron materials [60 Fed Reg 15478 (03/24/1995)];
2. If the total combined cost of the materials produced outside the United States does not exceed the greater of 0.1 percent of the total contract amount or \$2,500, materials produced outside the United States may be used if authorized.

Furnish steel and iron materials to be incorporated into the work with certificates of compliance and certified mill test reports. Mill test reports must indicate where the steel and iron were melted and manufactured. All melting and manufacturing processes for these materials, including an application of a coating, must occur in the United States. Coating includes all processes that protect or enhance the value of the material to which the coating is applied.

Manufactured Products

Iron and steel used in precast concrete manufactured products must meet the requirements of the above section (Steel and Iron Materials) regardless of the amount used. Iron and steel used in other manufactured products must meet the requirements of the above section (Steel and Iron Materials) if the weight of steel and iron components constitute 90 percent or more of the total weight of the manufactured product.

Construction Materials

Buy America requirements apply to the following construction materials that are or consist primarily of:

1. Non-ferrous metals
2. Plastic and polymer-based products [such as:](#)
 - 2.1 Polyvinylchloride
 - 2.2 Composite Building Materials
3. Glass
4. [Fiber optic cable \(including drop cable\)](#)
5. [Optical fiber](#)
6. Lumber
7. [Engineered wood](#)
8. Drywall

[All manufacturing processes for these materials as defined in 2 CFR 184.6 must occur in the United States.](#)

Where one or more of these construction materials have been combined by a manufacturer with other materials through a manufacturing process, Buy America requirements do not apply unless otherwise specified.

Furnish construction materials to be incorporated into the work with certificates of compliance with each project delivery. Manufacturer's certificate of compliance must identify where the construction material was manufactured and attest specifically to Buy America compliance.

All manufacturing processes for these materials must occur in the United States.

Buy America requirements do not apply to the following:

1. Tools and construction equipment used in performing the work
2. Temporary work that is not incorporated into the finished project

Waivers

If Buy America waivers are granted, use the following language to include in the contract:

The following steel and iron products, manufactured products, or construction materials have received an approved Buy America waiver for this contract, and therefore, are not subject to Buy America requirements:

1. _____
2. _____

9. QUALITY ASSURANCE

The Local Agency uses a Quality Assurance Program (QAP) to ensure a material is produced to comply with the Contract. The Local Agency may examine the records and reports of tests the prime contractor performs if they are available at the job site. Schedule work to allow time for QAP.

10. PROMPT PAYMENT

A. FROM THE AGENCY TO THE CONTRACTORS

The Local Agency shall make all project progress payment within 30 days after receipt of an undisputed and properly submitted payment request from the Contractor on a construction contract. If the Local Agency fails to pay promptly, the Local Agency shall pay interest to the Contractor, which accrues at the rate of 10 percent per annum on the principal amount of a money judgment remaining unsatisfied and pro-rated as necessary. Upon receipt of the payment request, the Local Agency shall act in accordance with both of the following:

1. The Local Agency shall review each payment request as soon as feasible after receipt to verify it is a proper payment request.
2. The Local Agency must return any payment request deemed improper by the Local Agency to the Contractor as soon as feasible, but not later than seven (7) days, after receipt. A request returned pursuant to this paragraph shall include documentation setting forth in writing the reasons why it is an improper payment request.

B. SUBMITTAL OF EXHIBIT 9-P

For projects awarded on or after September 1, 2023:

The Contractor must submit Exhibit 9-P to the Local Agency administering the contract by the 15th of the month following the month of any payment(s). If the Contractor does not make any payments to subcontractors, supplier(s) and/or manufacturers they must report "no payments were made to subs this month" and write this visibly and legibly on Exhibit 9-P.

The Local Agency must verify all Exhibit 9-P information, monitor compliance with prompt payment requirements for DBE and non-DBE firms, and address any shortfall to the DBE commitment and prompt payment issues until the end of the project. The Local Agency must email a copy of Exhibit 9-P to DBE.Forms@dot.ca.gov before the end of the month after receiving the Exhibit 9-P from the Contractor.

11. FORM FHWA-1273 REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONTRACTS

[Form FHWA-1273 must be physically inserted into the contract without modification, excluding ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS.]

*[The current version of Form FHWA-1273 is accessible at FHWA's website:
<https://www.fhwa.dot.gov/programadmin/contracts/1273/1273.pdf>]*

12. FEMALE AND MINORITY GOALS

To comply with Section II, "Nondiscrimination," of "Required Contract Provisions Federal-Aid Construction Contracts," the following are for female and minority utilization goals for Federal-aid construction contracts and subcontracts that exceed \$10,000:

The nationwide goal for female utilization is 6.9 percent.

The goals for minority utilization (45 Fed Reg 65984 (10/3/1980)) are as follows:

MINORITY UTILIZATION GOALS

	Economic Area	Goal (Percent)
174	Redding CA: Non-SMSA (Standard Metropolitan Statistical Area) Counties: CA Lassen; CA Modoc; CA Plumas; CA Shasta; CA Siskiyou; CA Tehama	6.8
175	Eureka, CA Non-SMSA Counties: CA Del Norte; CA Humboldt; CA Trinity	6.6
176	San Francisco-Oakland-San Jose, CA: SMSA Counties: 7120 Salinas-Seaside-Monterey, CA CA Monterey	28.9
	7360 San Francisco-Oakland CA Alameda; CA Contra Costa; CA Marin; CA San Francisco; CA San Mateo	25.6
	7400 San Jose, CA	19.6
	CA Santa Clara, CA 7485 Santa Cruz, CA	14.9
	CA Santa Cruz 7500 Santa Rosa	9.1
	CA Sonoma 8720 Vallejo-Fairfield-Napa, CA	17.1
	CA Napa; CA Solano Non-SMSA Counties: CA Lake; CA Mendocino; CA San Benito	23.2
177	Sacramento, CA: SMSA Counties: 6920 Sacramento, CA CA Placer; CA Sacramento; CA Yolo Non-SMSA Counties CA Butte; CA Colusa; CA El Dorado; CA Glenn; CA Nevada; CA Sierra; CA Sutter; CA Yuba	16.1
		14.3
178	Stockton-Modesto, CA: SMSA Counties: 5170 Modesto, CA CA Stanislaus	12.3
	8120 Stockton, CA CA San Joaquin	24.3
	Non-SMSA Counties CA Alpine; CA Amador; CA Calaveras; CA Mariposa; CA Merced; CA Tuolumne	19.8
179	Fresno-Bakersfield, CA SMSA Counties: 0680 Bakersfield, CA CA Kern	19.1
	2840 Fresno, CA CA Fresno	26.1
	Non-SMSA Counties: CA Kings; CA Madera; CA Tulare	23.6

180	Los Angeles, CA: SMSA Counties: 0360 Anaheim-Santa Ana-Garden Grove, CA CA Orange	11.9	
	4480 Los Angeles-Long Beach, CA CA Los Angeles	28.3	
	6000 Oxnard-Simi Valley-Ventura, CA CA Ventura	21.5	
	6780 Riverside-San Bernardino-Ontario, CA CA Riverside; CA San Bernardino	19.0	
	7480 Santa Barbara-Santa Maria-Lompoc, CA CA Santa Barbara	19.7	
	Non-SMSA Counties CA Inyo; CA Mono; CA San Luis Obispo	24.6	
	181	San Diego, CA: SMSA Counties 7320 San Diego, CA CA San Diego	16.9
		Non-SMSA Counties CA Imperial	18.2

For the last full week of July during which work is performed under the contract, the prime contractor and each non material-supplier subcontractor with a subcontract of \$10,000 or more must complete Form FHWA PR-1391 (Appendix C to 23 CFR 230). Submit the forms by August 15.

13. TITLE VI ASSURANCES

[The U.S. Department of Transportation Order No.1050.2A requires all federal-aid Department of Transportation contracts between an agency and a contractor to contain Appendix A and E.

Note: Appendix B only requires inclusion if the contract impacts deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein. Appendices C and D only require inclusion if the contract impacts deeds, licenses, leases, permits, or similar instruments entered into by the recipient.]

APPENDIX A

During the performance of this Agreement, the contractor, for itself, its assignees and successors in interest (hereinafter collectively referred to as CONTRACTOR) agrees as follows:

- a. Compliance with Regulations: CONTRACTOR shall comply with the regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the REGULATIONS), which are herein incorporated by reference and made a part of this agreement.
- b. Nondiscrimination: CONTRACTOR, with regard to the work performed by it during the AGREEMENT, shall not discriminate on the grounds of race, color, sex, national origin, religion, age, or disability in the selection and retention of sub-applicants, including procurements of materials and leases of equipment. CONTRACTOR shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the agreement covers a program set forth in Appendix B of the Regulations.
- c. Solicitations for Sub-agreements, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by CONTRACTOR for work to be performed under a Sub- agreement, including procurements of materials or leases of equipment, each potential sub-applicant or supplier shall be notified by CONTRACTOR of the CONTRACTOR'S obligations under this Agreement and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.
- d. Information and Reports: CONTRACTOR shall provide all information and reports required by the

Regulations, or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the recipient or FHWA to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of CONTRACTOR is in the exclusive possession of another who fails or refuses to furnish this information, CONTRACTOR shall so certify to the recipient or FHWA as appropriate, and shall set forth what efforts CONTRACTOR has made to obtain the information.

- e. Sanctions for Noncompliance: In the event of CONTRACTOR's noncompliance with the nondiscrimination provisions of this agreement, the recipient shall impose such agreement sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:
 - i. withholding of payments to CONTRACTOR under the Agreement within a reasonable period of time, not to exceed 90 days; and/or
 - ii. cancellation, termination or suspension of the Agreement, in whole or in part.
- f. Incorporation of Provisions: CONTRACTOR shall include the provisions of paragraphs (1) through (6) in every sub-agreement, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto.

CONTRACTOR shall take such action with respect to any sub-agreement or procurement as the recipient or FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance, provided, however, that, in the event CONTRACTOR becomes involved in, or is threatened with, litigation with a sub-applicant or supplier as a result of such direction, CONTRACTOR may request the recipient enter into such litigation to protect the interests of the State, and, in addition, CONTRACTOR may request the United States to enter into such litigation to protect the interests of the United States.

APPENDIX B

CLAUSES FOR DEEDS TRANSFERRING UNITED STATES PROPERTY

The following clauses will be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of Assurance 4:

NOW THEREFORE, the U.S. Department of Transportation as authorized by law and upon the condition that the recipient will accept title to the lands and maintain the project constructed thereon in accordance with Title 23 U.S.C., the regulations for the administration of the preceding statute, and the policies and procedures prescribed by the FHWA of the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. § 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the recipient all the right, title and interest of the U.S. Department of Transportation in and to said lands described in Exhibit A attached hereto and made a part hereof.

(HABENDUM CLAUSE)

TO HAVE AND TO HOLD said lands and interests therein unto the recipient and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the recipient, its successors and assigns. The recipient, in consideration of the conveyance of said lands and interest in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (1) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [,] [and]* (2) that the recipient will use the lands and interests in lands and interest in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title

VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended[, and (3) that in the event of breach of any of the above-mentioned non-discrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said lands, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the U.S. Department of Transportation and its assigns as such interest existed prior to this instruction].*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.)

APPENDIX C

CLAUSES FOR TRANSFER OF REAL PROPERTY ACQUIRED OR IMPROVED UNDER THE ACTIVITY, FACILITY, OR PROGRAM

The following clauses will be included in deeds, licenses, leases, permits, or similar instruments entered into by the recipient pursuant to the provisions of Assurance 7(a):

A. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add "as a covenant running with the land"] that:

1. In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.

B. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Non-discrimination covenants, the recipient will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued.*

C. With respect to a deed, in the event of breach of any of the above Non-discrimination covenants, the recipient will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the recipient and its assigns.*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

APPENDIX D**CLAUSES FOR CONSTRUCTION/USE/ACCESS TO REAL PROPERTY ACQUIRED UNDER THE ACTIVITY, FACILITY OR PROGRAM**

The following clauses will be included in deeds, licenses, permits, or similar instruments/agreements entered into by the recipient pursuant to the provisions of Assurance 7(b):

A. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishings of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits or, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended, set forth in this Assurance.

B. With respect to (licenses, leases, permits, etc.) in the event of breach of any of the above of the above Non-discrimination covenants, the recipient will have the right to terminate the (license, permits, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued.*

C. With respect to deeds, in the event of breach of any of the above Non-discrimination covenants, the recipient will there upon revert to and vest in and become the absolute property of the recipient and its assigns.

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

APPENDIX E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities, including, but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), prohibits discrimination on the basis of sex;
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 U.S.C. § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such

- programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations 49 C.F.R. parts 37 and 38;
 - The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
 - Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
 - Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
 - Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

Federal Trainee Program Special Provisions
(to be used when applicable)**14. FEDERAL TRAINEE PROGRAM**

For the Federal training program, the number of trainees or apprentices is ____.

This section applies if a number of trainees or apprentices is [shown on the Notice of Bidders](#).

As part of the prime contractor's equal opportunity affirmative action program, provide on-the-job training to develop full journeymen in the types of trades or job classifications involved.

The prime contractor has primary responsibility for meeting this training requirement.

If the prime contractor subcontracts a contract part, they shall determine how many trainees or apprentices are to be trained by the subcontractor. Include these training requirements in each subcontract.

Where feasible, 25 percent of apprentices or trainees in each occupation must be in their 1st year of apprenticeship or training.

Distribute the number of apprentices or trainees among the work classifications on the basis of the prime contractor's needs and the availability of journeymen in the various classifications within a reasonable recruitment area.

Before starting work, the prime contractor shall submit to the City/County of _____ :

1. Number of apprentices or trainees to be trained for each classification
2. Training program to be used
3. Training starting date for each classification

The prime contractor shall obtain the City/County of _____ approval for this submitted information before the prime contractor starts work. The City/County of _____ credits the prime contractor for each apprentice or trainee the prime contractor employs on the job who is currently enrolled or becomes enrolled in an approved program.

The primary objective of this section is to train and upgrade minorities and women toward journeyman status. The prime contractor shall make every effort to enroll minority and women apprentices or trainees, such as conducting systematic and direct recruitment through public and private sources likely to yield minority and women apprentices or trainees, to the extent they are available within a reasonable recruitment area and show that they have made the efforts. In making these efforts, the prime contractor shall not discriminate against any applicant for training.

The prime contractor shall not employ as an apprentice or trainee an employee:

1. In any classification in which the employee has successfully completed a training course leading to journeyman status or in which the employee has been employed as a journeyman
2. Who is not registered in a program approved by the US Department of Labor, Bureau of Apprenticeship and Training

The prime contractor shall ask the employee if the employee has successfully completed a training course leading to journeyman status or has been employed as a journeyman. The prime contractor's records must show the employee's answers to the questions.

In the training program, the prime contractor shall establish the minimum length and training type for each classification. The City/County of _____ and FHWA approves a program if one of the following is met:

1. It is calculated to:
 - Meet the equal employment opportunity responsibilities
 - Qualify the average apprentice or trainee for journeyman status in the classification involved by the end of the training period
2. It is registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and it is administered in a way consistent with the equal employment responsibilities of Federal-aid highway construction contracts

The prime contractor shall obtain the State's approval for their training program before they start work involving the classification covered by the program.

The prime contractor shall provide training in the construction crafts, not in clerk-typist or secretarial-type positions. Training is allowed in lower-level management positions such as office engineers, estimators, and timekeepers if the training is oriented toward construction applications. Training is allowed in the laborer classification if significant and meaningful training is provided and approved by the division office. Off-site training is allowed if the training is an integral part of an approved training program and does not make up a significant part of the overall training.

The City/County of _____ reimburses the prime contractor 80 cents per hour of training given an employee on this contract under an approved training program:

1. For on-site training
2. For off-site training if the apprentice or trainee is currently employed on a Federal-aid project and prime contractor does at least one of the following:
 - a. Contribute to the cost of the training
 - b. Provide the instruction to the apprentice or trainee
 - c. Pay the apprentice's or trainee's wages during the off-site training period
3. If the prime contractor complies with this section.

Each apprentice or trainee must:

1. Begin training on the project as soon as feasible after the start of work involving the apprentice's or trainee's skill
2. Remain on the project as long as training opportunities exist in the apprentice's or trainee's work classification or until the apprentice or trainee has completed the training program

Furnish the apprentice or trainee a:

1. Copy of the training plan approved by the U.S. Department of Labor or a training plan for trainees approved by both Caltrans and FHWA
2. Certification showing the type and length of training satisfactorily completed

Maintain records and submit reports documenting contractor's performance under this section.

15. PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE EQUIPMENT AND SERVICES

In response to significant national security concerns, the agency shall check the prohibited vendor list before making any telecommunications and video surveillance purchase because recipients and subrecipients of federal funds are prohibited from obligating or expending loan or grant funds to:

- Procure or obtain;
- Extend or renew a contract to procure or obtain; or
- Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

The prohibited vendors (and their subsidiaries or affiliates) are:

- Huawei Technologies Company;
- ZTE Corporation;
- Hytera Communications Corporation;
- Hangzhou Hikvision Digital Technology Company;
- Dahua Technology Company; and
- Subsidiaries or affiliates of the above-mentioned companies.

In implementing the prohibition, the agency administering loan, grant, or subsidy programs shall prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered communications equipment and services, to procure replacement equipment and services, and to ensure that communications service to users and customers is sustained.

The contractors should furnish telecommunications and video surveillance equipment with a certificate of compliance. The certificate must state telecommunications and video surveillance equipment was not procured or obtained from manufacturers identified in the above list.

Appendix G

LAPM Exhibit 12-G Required Federal Aid Contract Language LAPM

Appendix H

LAPM Exhibit 12-B Bidder's List of Subcontractors (DBE and Non-DBE)

Exhibit 12-B: Bidder's List of Subcontractor (DBE and Non-DBE) - Part 1

As of March 1, 2015 Contractors (and sub-contractors) wishing to bid on public works contracts must be registered with the State Division of Industrial Relations and certified to bid on Public Works contracts. Please register at <https://www.dir.ca.gov/Public-Works/Contractor-Registration.html>. The local agency will verify registration of all contractors and subcontractors on public works projects at bid and thereafter annually to assure that yearly registration is maintained throughout the life of the project.

In accordance with Title 49, Section 26.11 of the Code of Federal Regulations, and Section 4104 of the Public Contract Code of the State of California, as amended, the following information is required for each sub-contractor who will perform work amounting to more than one half of one percent (0.5%) of the Total Base Bid or \$10,000 (whichever is greater).

FEDERAL PROJECT NUMBER:

Photocopy this form for additional firms.

Subcontractor Name & Location	Line Item & Description	Subcontract Amount	Percentage of Bid Item Subcontracted	Contractor License Number	DBE (Y/N)	DBE Cert Number	Annual Gross Receipts	
				DIR Reg Number				
NAME								< \$1 million
								< \$5 million
								< \$10 million
City, State								< \$15 million
							Age of Firm in years	
NAME								< \$1 million
								< \$5 million
								< \$10 million
City, State								< \$15 million
							Age of Firm in years	
NAME								< \$1 million
								< \$5 million
								< \$10 million
City, State								< \$15 million
							Age of Firm in years	
NAME								< \$1 million
								< \$5 million
								< \$10 million
City, State								< \$15 million
							Age of Firm in years	
NAME								< \$1 million
								< \$5 million
								< \$10 million
City, State								< \$15 million
							Age of Firm in years	
NAME								< \$1 million
								< \$5 million
								< \$10 million
City, State								< \$15 million
							Age of Firm in years	
NAME								< \$1 million
								< \$5 million
								< \$10 million
City, State								< \$15 million
							Age of Firm in years	
NAME								< \$1 million
								< \$5 million
								< \$10 million
City, State								< \$15 million
							Age of Firm in years	

Exhibit 12-B: Bidder's List of Subcontractor (DBE and Non-DBE) - Part 2

In accordance with Title 49, Section 26 of the Code of Federal Regulations, the Bidder shall list all subcontractors who provided a quote or bid but **were not selected** to participate as a subcontractor on this project.

FEDERAL PROJECT NUMBER:

Photocopy this form for additional firms.

Subcontractor Name & Location	Line Item & Description	Subcontract Amount	Percentage of Bid Item Subcontracted	Contractor License Number		DBE (Y/N)	DBE Cert Number	Annual Gross Receipts	
				DIR Reg Number					
NAME								< \$1 million	
								< \$5 million	
								< \$10 million	
City, State								< \$15 million	
								Age of Firm in years	
NAME								< \$1 million	
								< \$5 million	
								< \$10 million	
City, State								< \$15 million	
								Age of Firm in years	
NAME								< \$1 million	
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NAME								< \$1 million	
								< \$5 million	
								< \$10 million	
City, State								< \$15 million	
								Age of Firm in years	
NAME								< \$1 million	
								< \$5 million	
								< \$10 million	
City, State								< \$15 million	
								Age of Firm in years	

Appendix I

LAPM Exhibit 15-G Construction Contract DBE Commitment and Exhibit 15-H Proposer/ Contractor Good Faith Efforts

Exhibit 15-G: Construction Contract DBE Commitment

1. Local Agency: _____ 2. Contract DBE Goal: _____
 3. Project Description: _____
 4. Project Location: _____
 5. Bidder's Name: _____ 6. Prime Certified DBE: 7. Bid Amount: _____
 8. Total Dollar Amount for **ALL** Subcontractors: _____ 9. Total Number of **ALL** Subcontractors: _____

10. Bid Item Number	11. Description of Work, Service, or Materials Supplied	12. NAICS or Work Category Codes	13. DBE Certification Number	14. DBE Contact Information (Must be certified on the date bids are opened)	15. DBE Dollar Amount

Local Agency to Complete this Section upon Execution of Award		16. TOTAL CLAIMED DBE PARTICIPATION	
22. Local Agency Contract Number:	_____		%
23. Federal-Aid Project Number:	_____		
24. Bid Opening Date:	_____		
25. Contract Award Date:	_____		
26. Award Amount:	_____	IMPORTANT: Identify all DBE firms being claimed for credit, regardless of tier. Names of the First Tier DBE Subcontractors and their respective item(s) of work listed above must be consistent, where applicable with the names and items of the work in the "Subcontractor List" submitted with your bid. Written confirmation of each listed DBE is required.	
Local Agency certifies that all DBE certifications are valid and information on this form is complete and accurate.			
27. Local Agency Representative's Signature	_____	28. Date	_____
29. Local Agency Representative's Name	_____	30. Phone	_____
31. Local Agency Representative's Title	_____	17. Preparer's Signature	_____
		18. Date	_____
		19. Preparer's Name	_____
		20. Phone	_____
		21. Preparer's Title	_____

- DISTRIBUTION: 1. Original – Local Agency
 2. Copy – Caltrans District Local Assistance Engineer (DLAE). Failure to submit to DLAE within 30 days of contract execution may result in de-obligation of federal funds on contract.
 3. Include additional copy with award package.

INSTRUCTIONS – CONSTRUCTION CONTRACT DBE COMMITMENT**CONTRACTOR SECTION**

- 1. Local Agency** - Enter the name of the local agency that is administering the contract.
- 2. Contract DBE Goal** - Enter the contract DBE goal percentage as it appears on the project advertisement.
- 3. Project Description** - Enter the project description as it appears on the project advertisement (Bridge Rehab, Seismic Rehab, Overlay, Widening, etc).
- 4. Project Location** - Enter the project location(s) as it appears on the project advertisement.
- 5. Bidder's Name** - Enter the contractor's firm name.
- 6. Prime Certified DBE** - Check box if prime contractor is a certified DBE.
- 7. Bid Amount** - Enter the total contract bid dollar amount for the prime contractor.
- 8. Total Dollar Amount for ALL Subcontractors** – Enter the total dollar amount for all subcontracted contractors. SUM = (DBEs + all Non-DBEs). Do not include the prime contractor information in this count.
- 9. Total number of ALL subcontractors** – Enter the total number of all subcontracted contractors. SUM = (DBEs + all Non-DBEs). Do not include the prime contractor information in this count.
- 10. Bid Item Number** - Enter bid item number for work, services, or materials supplied to be provided.
- 11. Description of Work, Services, or Materials Supplied** - Enter description of work, services, or materials to be provided. Indicate all work to be performed by DBEs including work performed by the prime contractor's own forces, if the prime is a DBE. If 100% of the item is not to be performed or furnished by the DBE, describe the exact portion to be performed or furnished by the DBE. See LAPM Chapter 9 to determine how to count the participation of DBE firms.
- 12. NAICS or Work Category Codes** - Enter [NAICS or Work Category Codes from the California Unified Certification Program database](#).
- 13. DBE Certification Number** - Enter the DBE's Certification Identification Number. All DBEs must be certified on the date bids are opened.
- 14. DBE Contact Information** - Enter the name, address, and phone number of all DBE subcontracted contractors. Also, enter the prime contractor's name and phone number, if the prime is a DBE.
- 15. DBE Dollar Amount** - Enter the subcontracted dollar amount of the work to be performed or service to be provided. Include the prime contractor if the prime is a DBE. See LAPM Chapter 9 for how to count full/partial participation.
- 16. Total Claimed DBE Participation** - \$: Enter the total dollar amounts entered in the "DBE Dollar Amount" column. %: Enter the total DBE participation claimed ("Total Claimed DBE Participation Dollars" divided by item "Bid Amount"). If the total % claimed is less than item "Contract DBE Goal," an adequately documented Good Faith Effort (GFE) is required (see Exhibit 15-H DBE Information - Good Faith Efforts of the LAPM).
- 17. Preparer's Signature** - The person completing the DBE commitment form on behalf of the contractor's firm must sign their name.
- 18. Date** - Enter the date the DBE commitment form is signed by the contractor's preparer.
- 19. Preparer's Name** - Enter the name of the person preparing and signing the contractor's DBE commitment form.
- 20. Phone** - Enter the area code and phone number of the person signing the contractor's DBE commitment form.
- 21. Preparer's Title** - Enter the position/title of the person signing the contractor's DBE commitment form.

LOCAL AGENCY SECTION

- 22. Local Agency Contract Number** - Enter the Local Agency contract number or identifier.
- 23. Federal-Aid Project Number** - Enter the Federal-Aid Project Number(s).
- 24. Bid Opening Date** - Enter the date contract bids were opened.
- 25. Contract Award Date** - Enter the date the contract was executed.
- 26. Award Amount** – Enter the contract award amount as stated in the executed contract.
- 27. Local Agency Representative's Signature** - The person completing this section of the form for the Local Agency must sign their name to certify that the information in this and the Contractor Section of this form is complete and accurate.
- 28. Date** - Enter the date the DBE commitment form is signed by the Local Agency Representative.
- 29. Local Agency Representative's Name** - Enter the name of the Local Agency Representative certifying the contractor's DBE commitment form.
- 30. Phone** - Enter the area code and phone number of the person signing the contractor's DBE commitment form.
- 31. Local Agency Representative Title** - Enter the position/title of the Local Agency Representative certifying the contractor's DBE commitment form.

EXHIBIT 15-H: PROPOSER/CONTRACTOR GOOD FAITH EFFORTS

Cost Proposal Due Date _____ PE/CE

Federal-aid Project No(s). _____ Bid Opening Date _____ CON

The _____ established a Disadvantaged Business Enterprise (DBE) goal of _____ for this contract. The information provided herein shows the required good faith efforts to meet or exceed the DBE contract goal.

Proposers or bidders submit the following information to document their good faith efforts within five (5) calendar days from cost proposal due date or bid opening. Proposers and bidders are recommended to submit the following information even if the Exhibit 10-O1: Consultant Proposal DBE Commitments or Exhibit 15-G: Construction Contract DBE Commitment indicate that the proposer or bidder has met the DBE goal. This form protects the proposer’s or bidder’s eligibility for award of the contract if the administering agency determines that the bidder failed to meet the goal for various reasons, e.g., a DBE firm was not certified at bid opening, or the bidder made a mathematical error.

The following items are listed in the Section entitled “Submission of DBE Commitment” of the Special Provisions, **please attach additional sheets as needed:**

- A. The names and dates of each publication in which a request for DBE participation for this project was placed by the bidder (please attach copies of advertisements or proofs of publication):

Publications	Dates of Advertisement

- B. The names and dates of written notices sent to certified DBEs soliciting bids for this project and the dates and methods used for following up initial solicitations to determine with certainty whether the DBEs were interested (please attach copies of solicitations, telephone records, fax confirmations, etc.):

Names of DBEs Solicited	Date of Initial Solicitation	Follow Up Methods and Dates

- C. The items of work made available to DBE firms including those unbundled contract work items into economically feasible units to facilitate DBE participation. It is the bidder's responsibility to demonstrate that sufficient work to facilitate DBE participation in order to meet or exceed the DBE contract goal.

Items of Work	Proposer or Bidder Normally Performs Item (Y/N)	Breakdown of Items	Amount (\$)	Percentage Of Contract
<hr/>				
<hr/>				
<hr/>				
<hr/>				

- D. The names, addresses and phone numbers of rejected DBE firms, the reasons for the bidder's rejection of the DBEs, the firms selected for that work (please attach copies of quotes from the firms involved), and the price difference for each DBE if the selected firm is not a DBE:

Names, addresses and phone numbers of rejected DBEs and the reasons for the bidder's rejection of the DBEs:

Names, addresses and phone numbers of firms selected for the work above:

- E. Efforts (e.g. in advertisements and solicitations) made to assist interested DBEs in obtaining information related to the plans, specifications and requirements for the work which was provided to DBEs:

F. Efforts (e.g. in advertisements and solicitations) made to assist interested DBEs in obtaining bonding, lines of credit or insurance, necessary equipment, supplies, materials, or related assistance or services, excluding supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate:

G. The names of agencies, organizations or groups contacted to provide assistance in contacting, recruiting and using DBE firms (please attach copies of requests to agencies and any responses received, i.e., lists, Internet page download, etc.):

Name of Agency/Organization	Method/Date of Contact	Results

H. Any additional data to support a demonstration of good faith efforts: