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**PUBLIC WORKS DEPARTMENT  
10300 TORRE AVENUE  
CUPERTINO, CALIFORNIA 95014**

**PROJECT MANUAL**

**FOR THE**

# **Pumpkin-Fiesta Storm Drain Improvement Project**

**Bid Date:**

**Tuesday, April 25, 2023 at 2:00 pm**

**Project Number: 2022-01**

**PROJECT MANUAL FOR  
Pumpkin-Fiesta Storm Drain Improvement Project  
PROJECT NO. 2022-01**

**APPROVED BY:**



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**Chad Mosley**  
**Interim Director of Public Works**

## PROJECT DIRECTORY

Project Name: **Pumpkin-Fiesta Storm Drain Improvement Project**

Project Number: **2022-01**

Location: Fiesta Lane between November and September Drives, September Drive between Fiesta Lane and Festival Court, and Festival Drive between Festival Court and Highway 85

City Representative:

**City of Cupertino**

Suyesh Shrestha  
Public Works Department  
10300 Torre Avenue  
Cupertino, CA 95014  
PH: (408) 777-3172  
e-mail: [SuyeshS@cupertino.org](mailto:SuyeshS@cupertino.org)

Address for Stop Notices:

**City of Cupertino**

Suyesh Shrestha  
Public Works Department  
10300 Torre Avenue  
Cupertino, CA 95014  
PH: (408) 777-3172  
e-mail: [SuyeshS@cupertino.org](mailto:SuyeshS@cupertino.org)

Engineer of Record:

**BKF Engineers**

Sravan Paladugu  
255 Shoreline Drive, Suite 200  
Redwood City, CA 94065  
(650) 482-6300

Project Name: **Pumpkin-Fiesta Storm Drain Improvement Project**

Project Number: **2022-01**

### SEALS PAGE

The Technical Specifications and Plans have been prepared by or under the direction of the following person(s).

#### CIVIL ENGINEERING



2/10/2023

SRAVAN PALADUGU  
REGISTERED CIVIL ENGINEER

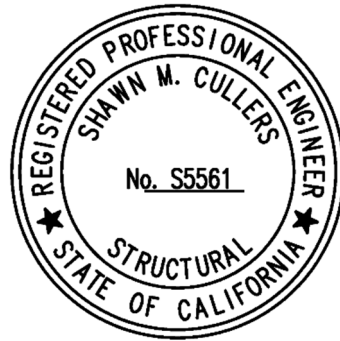


#### STRUCTURES



2/10/23

SHAWN M. CULLERS  
REGISTERED STRUCTURAL ENGINEER



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**Attachment A-Geotechnical Report - For Reference Only**

## Notice Inviting Bids

1. **Bid Submission.** City of Cupertino ("City") will accept electronically submitted bids for its Pumpkin-Fiesta Storm Drain Improvement Project ("Project"), by or before Tuesday, April 25th, 2023, at 2:00 p.m., via electronic submission to the City's "Business Opportunities" online portal in the manner set forth in Section 1 of the Instructions to Bidders, at which time the bids will be opened by the City.
2. **Project Information.**
  - 2.1 **Location and Description.** The Project is located at Fiesta Lane between November and September Drives, September Drive between Fiesta Lane and Festival Court, and Festival Drive between Festival Court and Highway 85 and is described as follows: Removal of approximately 870 linear feet of existing storm drain pipes, removal of 6 existing storm drain manholes. Installation of approximately 380 linear feet of various size box culvert, installation of 3 storm drain manholes, installation of 3 transition structures, installation of 2 closure pieces, installation of 1 junction structure, installation of approximately 400 linear feet of 36" RCP pipe, reconnection of drain inlets, slurry sealing of the roadway, and other associated work.
  - 2.2 **Time for Final Completion.** The Project must be fully completed within 114 calendar days from the start date set forth in the Notice to Proceed. City anticipates that the Work will begin on or about May 23, 2023, but the anticipated start date is provided solely for convenience and is neither certain nor binding.
  - 2.3 **Estimated Cost.** The estimated construction cost is \$1,200,000.00.
3. **License and Registration Requirements.**
  - 3.1 **License.** This Project requires a valid California contractor's license for the following classification(s): Classification A, General Engineering, or C34 (pipeline)
  - 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://apps.cupertino.org/bidmanagement/index.aspx>. A printed copy of the Contract Documents are not available.
5. **Bid Security.** Each bidder must submit bid security equal to 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, in the manner set forth in Section 4 of the Instructions to Bidders. 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, 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.** These 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.

By: Kirsten Squarcia Date: 3/16/23

Kirsten Squarcia, City Clerk

Original Publication Date: 3/17/23

END OF NOTICE INVITING BIDS

## Instructions to Bidders

Each Bid Proposal submitted to the City of Cupertino ("City") for its Pumpkin-Fiesta Storm Drain Improvement Project ("Project") must be submitted in accordance with the following instructions and requirements:

### 1. Bid Submission.

- 1.1 General.** Each Bid Proposal must be signed and submitted to City, using the form provided in the Contract Documents, by or before the date and time set forth in Section 1 of the Notice Inviting Bids, or as amended by subsequent addendum, via electronic submission only as specified below in Section 1.2. Faxed, hand-delivered, mailed or emailed Bid Proposals will not be accepted, unless otherwise specified. Late submissions will not be considered. 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 Electronic Submission.** The Bid Proposal and all required forms and attachments must be submitted in PDF format on the City's "Business Opportunities" portal at <https://apps.cupertino.org/bidmanagement/index.aspx>. To submit a bid, (1) select the folder icon in the "Actions" column for the Project; (2) select the "Electronic Submission" tab; (3) when the log-in screen appears, enter the log-in credentials used to access the Contract Documents and/or create an account, as appropriate; (4) after logging in, carefully follow all instructions for electronic submission of the Bid Proposal and all required forms and attachments. Each bidder should familiarize itself with the City's "Business Opportunities" portal before the bid deadline. Electronic submission may take more time than anticipated. Each bidder should plan accordingly and afford itself ample time to upload its bid. Bids that are in the process of uploading but are not completely uploaded by the bid deadline will be automatically rejected by the portal. The portal will not allow submission after the bid deadline. On the next Working Day following the bid opening, the City will post the bid results to <https://apps.cupertino.org/bidmanagement/index.aspx>.
- 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 without opening its bid. (Labor Code §§ 1725.5 and 1771.1(a).)

- 2. Bid Proposal Form and Enclosures.** Each Bid Proposal must be completed legibly 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 a completed Subcontractor List and Non-Collusion Declaration using the forms included with the Contract Documents, a PDF copy of the bid security, and any additional forms required by the Notice Inviting Bids or Instructions to Bidders. In addition to

submitting a PDF copy of the bid security, each bidder must also send the original form of bid security to the City, as set forth in Section 4, below.

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 Corporation Code § 313.

4. **Bid Security.** Each bid must be guaranteed by bid security of ten percent of the maximum bid amount, in the form of a cashier's 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.

- 4.1 **Form of Security and Submission.** In addition to submitting a PDF copy of the bid security, the wet-inked original bid bond, cashier's or certified check, must be sent to the City via U.S. Mail or a reliable overnight delivery service in a sealed envelope addressed to City of Cupertino, Office of the City Clerk, 10300 Torre Avenue, Cupertino, CA 95014 and clearly labeled with the bidder's legal name and address, the Project title, and date and time of the bid deadline. The envelope containing the original form of bid security must be postmarked or otherwise dated to show that it was submitted to the United States Postal Service or overnight delivery service by or before the date of the bid deadline.

- 4.2 **Bid Guarantee.** 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; and submit the insurance certificates and endorsements 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 Suyesh Shrestha, Project Manager, at [SuyeshS@cupertino.org](mailto:SuyeshS@cupertino.org). 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.

- 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 Project 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://apps.cupertino.org/bidmanagement/index.aspx>.

**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 10300 Torre Avenue, Cupertino CA 95014 or sent via email at [SuyeshS@cupertino.org](mailto:SuyeshS@cupertino.org) before 5:00 p.m. no later than two Working Days following the date upon which the City posts the bid results ("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. If required by City, the protesting bidder must submit a non-refundable fee in the amount specified by City, based upon City's reasonable costs to administer the bid protest. Any such fee must be submitted to City no later than the Bid Protest Deadline, unless otherwise specified. 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 apparent low 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 5 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. Subcontractor Work Limits.** The prime contractor must perform at least 51% 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 51% self-performance requirement. The remaining Work may be performed by qualified Subcontractor(s).
- 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.** 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. For Reference Only.** The following documents are provided "For Reference Only," as defined in Section 3.4 of the General Conditions:

Attachment A  
Geotechnical Recommendations Report  
Haley & Aldrich, Inc.  
May 2022

END OF INSTRUCTIONS TO BIDDERS

## Bid Proposal

### Pumpkin-Fiesta Storm Drain Improvement Project

\_\_\_\_\_ (“Bidder”) hereby submits this Bid Proposal to City of Cupertino (“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 Bidder is awarded the Contract for the Project, 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; and
- 4.3 **Insurance Requirements.** Submit to City the insurance certificate(s) and endorsement(s) as required by the Contract Documents.
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      SY = Square Yard

BID ITEM	ITEM DESCRIPTION	EST. QTY.	UNIT	UNIT COST	EXTENDED TOTAL AMOUNT
1	Mobilization & Demobilization	1	LS	\$	\$
2	Storm Water Pollution & Dust Control	1	LS	\$	\$
3	Traffic Control & General Safety Measures	1	LS	\$	\$
4	Trench Safety Measures	1	LS	\$	\$
5	Remove & Disposal of Existing Storm Drain Pipes	867	LF	\$	\$
6	Remove & Disposal of Existing Storm Manholes	6	EA	\$	\$
7	Reinforced Concrete Box Culvert (4'x2')	182	LF	\$	\$
8	Reinforced Concrete Box Culvert (7'x3')	150	LF	\$	\$
9	Reinforced Concrete Box Culvert (7'x4')	48	LF	\$	\$
10	16" Steel Sleeve (Sanitary Sewer)	30	LF	\$	\$
11	48" Manhole	3	EA	\$	\$
12	Cast-in-Place Concrete Closure Piece	2	EA	\$	\$
13	Junction Structure	1	EA	\$	\$
14	Transition Structure #1	1	EA	\$	\$
15	Transition Structure #2	1	EA	\$	\$
16	Transition Structure #3	1	EA	\$	\$
17	12" RCP Class IV	10	LF	\$	\$
18	36" RCP Class IV	404	LF	\$	\$
19	Reconnect Catch Basin Lateral Pipes	9	EA	\$	\$
20	Slurry Seal	3410	SY	\$	\$

TOTAL BASE BID:      Items 1 through \_\_\_\_\_ 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

### Subcontractor List

For each Subcontractor that will perform a portion of the Work in an amount in excess of one-half of 1% of the Bidder's total Contract Price,<sup>1</sup> the bidder must list a description of the Work, the name of the Subcontractor, its California contractor license number, the location of its place of business, its DIR registration number, and the portion of the Work that the Subcontractor is performing based on a percentage of the Base Bid price.

DESCRIPTION OF WORK	SUBCONTRACTOR NAME	CALIFORNIA CONTRACTOR LICENSE NO.	LOCATION OF BUSINESS	DIR REG. NO.	PERCENT OF WORK

END OF SUBCONTRACTOR LIST

<sup>1</sup> For street or highway construction this requirement applies to any subcontract of \$10,000 or more.

### 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.

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 City of Cupertino ("City") for work on the Pumpkin-Fiesta Storm Drain Improvement 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; and
  - 2.4 **Insurance.** The insurance certificate(s) and endorsement(s) required by the Contract Documents, and any other documents required by the Instructions to Bidders or Notice of Potential Award.
3. **Enforcement.** If Bidder fails to execute the Contract and to submit the bonds and insurance certificates 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.

*[Signatures are on the following page.]*

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

### PUMPKIN-FIESTA STORM DRAIN IMPROVEMENT 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 disbarred from bidding under state or federal law?  
\_\_\_\_\_ Yes        \_\_\_\_\_ No

If yes, provide additional information on a separate sheet regarding the disqualification or disbarment, 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 disbarred, and the month and year in which the disqualification or disbarment 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 Three 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 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 City of Cupertino ("City") and \_\_\_\_\_ ("Contractor"), for work on the Pumpkin-Fiesta Storm Drain Improvement 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.
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. Contractor agrees to carry out its work in compliance with any applicable local, State or Federal order regarding COVID-19.
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 114 calendar days from the commencement date given in the Notice to Proceed ("Contract Time"). By signing below, Contractor expressly waives any claim for delayed early completion.
6. **Liquidated Damages.** If Contractor fails to complete the Work within the Contract Time, City will assess liquidated damages in the amount of \$4,200 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:**

Department of Public Works  
10300 Torre Avenue  
Cupertino, CA 95014  
(408) 777-3354  
Attn: Suyesh Shrestha, Project Manager  
SuyeshS@cupertino.org

Copy to: <Name/Title>  
<Email address>

**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 Santa Clara 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 Santa Clara 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 Corporation 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: \_\_\_\_\_

Attest:

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

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

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

**CONTRACTOR:**

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

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

Seal:

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

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

Second Signature (See Section 12.8):

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

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

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

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

END OF CONTRACT

## Payment Bond

City of Cupertino ("City") and \_\_\_\_\_ ("Contractor") have entered into a contract for work on the Pumpkin-Fiesta Storm Drain Improvement 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 delivered or transmitted 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 Santa Clara 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

END OF PAYMENT BOND

## Performance Bond

City of Cupertino ("City") and \_\_\_\_\_ ("Contractor") have entered into a contract for work on the Pumpkin-Fiesta Storm Drain Improvement 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 Santa Clara 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

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 electrical engineering design 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 Cupertino and his or her authorized delegates.

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

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

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

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

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

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

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

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

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

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

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

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

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

**Project** means the public works project referenced in the Contract.

**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.

Holidays observed by the City and furlough days are:

- a. New Year's Day, January 1;
- b. Martin Luther King Jr.'s Birthday, third Monday in January;
- c. Lincoln's Birthday, February 12;
- d. Presidents' Day, third Monday in February;
- e. Memorial Day, last Monday in May;
- f. Independence Day, July 4;
- g. Labor Day, first Monday in September;
- h. Veterans' Day, November 11;
- i. Thanksgiving Day, as designated by the President;
- j. The Day following Thanksgiving Day;

- k. Christmas Day, December 25;
- l. City Closure, December 24, 26, 27, 28, 29, 30 and 31: and
- m. Each day appointed by the Governor of California and formally recognized by the Santa Clara County Board of Supervisors as a day of mourning, thanksgiving, or special observance.

**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 and 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 every other Contract Document, 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 Project records

relating to the Project or to investigate Contractor's plant or equipment during Contractor's normal business hours. 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 Article 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 at the time the Contract is signed.
- 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 protected 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 an equivalent form 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 orders 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 ten 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) Based on historic records for the Project location from the Western Regional Climate Center, Contractor's schedule should assume the following number of normal Weather Delay Days and precipitation for each month:

Month	# Normal Weather Delay Days	Precipitation
January	6	2.86

February	6	2.66
March	6	2.29
April	3	1.20
May	1	0.44
June	0	0.10
July	0	0.02
August	0	0.07
September	1	0.19
October	2	0.76
November	4	1.51
December	5	2.43
Total	34	14.53

(2) Contractor must fully comply with the applicable procedures in Articles 5 and 6 of the General Conditions regarding requests to modify the Contract Time.

(3) 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.

(4) 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 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, City will charge Contractor in the amount specified in the Contract for each 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 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, and which may include a not-to-exceed limit, 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, or 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 additional 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 the 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 that is used solely for the purpose of describing the type of item 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 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 locations during construction and/or fabrication and at any Worksite, including at shops and yards as well as at the Project site. 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 testing consultants retained by City, subject to the following exceptions:

(1) Contractor will be responsible for the costs of any subsequent 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 of the Work does not in any way relieve Contractor of its obligations to perform the Work as specified. Any Work done without the required inspection(s) will also 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.

(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, 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 the cost will be deducted 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 through 4216.5, which are incorporated by reference herein. Government Code § 4216.2 requires that, except in an emergency, Contractor must contact the appropriate regional notification center, or Underground Services Alert, at least two working days, but not more than 14 calendar days, before starting any excavation if the excavation will be conducted in an area that is known, or reasonably should be known, to contain subsurface installations. Contractor may not begin excavation until it has obtained and submitted to Engineer an inquiry identification number from Underground Services Alert.

**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 is available online at:  
<ftp://ftp.consrv.ca.gov/pub/omr/AB3098%20List/AB3908List.pdf>.

## 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 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 and 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 and 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 costs 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 to 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 (f) of Public

Contract Code § 22300 ("Escrow Agreement"), and if Contractor disputes that it is in default, its sole remedy is to comply with the dispute resolution procedures in Article 12 and the provisions therein. It is agreed that for purposes of this paragraph, an event of default includes City's rights pursuant to these Contract Documents to withhold or deduct sums from retention, including withholding or deduction for liquidated damages, incomplete or defective Work, stop payment notices, or backcharges. It is further agreed that if any individual authorized to give or receive written notice on behalf of a party pursuant to section (10) of the Escrow Agreement are unavailable to give or receive notice on behalf of that party due to separation from employment, retirement, death, or other circumstances, the successor or delegee of the named individual is deemed to be the individual authorized to give or receive notice pursuant to section (10) of the Escrow Agreement.

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

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

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

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

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

Section 8.3, Adjustment of Payment Application. If the amount due from Contractor to City exceeds the amount of Final Payment, City retains the right to recover the balance from Contractor or its sureties.

- 8.8 Release of Claims.** City may, at any time, require that payment of the undisputed portion of any progress payment or Final Payment be contingent upon Contractor furnishing City with a written waiver and release of all claims against City arising from or related to the portion of Work covered by those undisputed amounts subject to the limitations of Public Contract Code § 7100. Any disputed amounts may be specifically excluded from the release.
- 8.9 Warranty of Title.** Contractor warrants that title to all work, materials, or equipment incorporated into the Work and included in a request for payment will pass over to City free of any claims, liens, or encumbrances upon payment to Contractor.

## **Article 9 - Labor Provisions**

- 9.1 Discrimination Prohibited.** Discrimination against any prospective or present employee engaged in the Work on grounds of race, color, ancestry, national origin, ethnicity, religion, sex, sexual orientation, age, disability, or marital status is strictly prohibited. Contractor and its Subcontractors are required to comply with all applicable Laws prohibiting discrimination, including the California Fair Employment and Housing Act (Govt. Code § 12900 et seq.), Government Code § 11135, and Labor Code §§ 1735, 1777.5, 1777.6, and 3077.5.
- 9.2 Labor Code Requirements.**
- (A) **Eight Hour Day.** Pursuant to Labor Code § 1810, eight hours of labor constitute a legal day's work under this Contract.
- (B) **Penalty.** Pursuant to Labor Code § 1813, Contractor will forfeit to City as a penalty, the sum of \$25.00 for each day during which a worker employed by Contractor or any Subcontractor is required or permitted to work more than eight hours in any one calendar day or more than 40 hours per calendar week, except if such workers are paid overtime under Labor Code § 1815.
- (C) **Apprentices.** Contractor is responsible for compliance with the requirements governing employment and payment of apprentices, as set forth in Labor Code § 1777.5, which is fully incorporated by reference.
- (D) **Notices.** Pursuant to Labor Code § 1771.4, Contractor is required to post all job site notices prescribed by Laws.
- 9.3 Prevailing Wages.** Each worker performing Work under this Contract that is covered under Labor Code §§ 1720 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 a day, 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 §§ 1776 and 1812 and all implementing regulations, which are fully incorporated by this reference, including requirements for 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 a day, 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. City will notify Contractor in writing of its intent to occupy or make use of the Project or any portions of the Project, pursuant to this provision.

(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 dispute City's response 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 Worksites(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 to 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 that bids were due.
- 14.6 Survival.** The provisions that survive termination or expiration of this Contract include Contract Section 11, Notice, and subsections 12.1, 12.2, 12.3, 12.4, 12.5, and 12.6, of Section 12, General Provisions; and the following provisions in these General Conditions: Section 2.2(J), Contractor's Records, Section 2.3(C), Termination, Section 3.7,

Ownership, Section 4.2, Indemnity, Article 12, Dispute Resolution, and Section 11.2, Warranty.

END OF GENERAL CONDITIONS

## Special Conditions

1. **Authorized Work Days and Hours.**
  - 1.1 **Authorized Work Days and Hours**

Weekdays, excluding holidays observed by the City: 7:00 a.m.-5:00 p.m.

Non-weekday work, including holidays, requires date specific authorization a minimum of 2 working days prior to work. If authorized, the work hours are:

Saturday: 9:00 a.m.-5:00 p.m.

Sunday: 9:00 a.m.-4:00 p.m.
  - 1.2 **Worker Arrival and Parking.** Workers may arrive at the Project site no earlier than 7:00 a.m.
    - a. **Equipment and Material Delivery and Off-Haul Hours.** No equipment or material may be delivered or off-hauled except between the hours of 7:00 a.m. and 5:00 p.m. No equipment that has a safety backup beeper may be operated before 7:00a.m. on any day.
2. **Truck Restrictions.** There are truck route restrictions per City of Cupertino Truck Traffic Routes, Section 11.32 of the Cupertino Municipal Code.
3. **Connections to Existing Facilities.** Unless otherwise specified or indicated, Contractor will make all necessary connections to existing facilities, including structures, drain lines, and utilities such as water, sewer, gas, telephone, and electric. In each case, Contractor will receive permission from City or the owning utility prior to undertaking connections and coordinate as needed to accommodate the facilities operations. Contractor will protect facilities against deleterious substances and damage.
4. **Road Shutdown.** Contractor will execute the Work while roads are in operation except for the periods of permitted shutdown. For shutdown periods, Contractor will prepare and submit a detailed plan that includes shutdown schedule, planned sequence of work, milestones and projected times of completions of activities, any anticipated problems, Contractor's supervisory personnel, actions desired of City and staff, and contingency plans. Contractor will allow sufficient time for review and re-submittal of the shutdown plan until acceptable to City. Contractor will employ sufficient labor, superintendence, and equipment on a 24-hour, 7 days a week basis during shutdown and other operational disruptions to complete Work within the specified periods at no additional cost to the City. Once initiated, Work may proceed on extra shift or around-the-clock basis as necessary. When required to minimize treatment process interruptions while complying with specified sequencing constraints, Contractor will provide power, lighting, controls, instrumentation, and safety devices.
5. **Noise Limitation.** No non-construction noise will be allowed, this includes amplified music, radio or other noise not due to construction activities.
6. **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:

- 6.1 Name, 24-hour contact information, and qualifications of the proposed on-site superintendent;
  - 6.2 List of all key Project personnel and their complete contact information, including email addresses and telephone numbers during regular hours and after hours;
  - 6.3 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;
  - 6.4 If required, traffic control plans associated with the staging plans that are signed and stamped by a licensed traffic engineer;
  - 6.5 Draft baseline schedule for the Work as required under Section 5.2, to be finalized within ten days after City issues the Notice to Proceed;
  - 6.6 Breakdown of lump sum bid items, to be used for determining the value of Work completed for future progress payments to Contractor;
  - 6.7 Schedule with list of Project submittals that require City review, and list of the proposed material suppliers;
  - 6.8 Plan for coordination with affected utility owner(s) and compliance with any related permit requirements;
  - 6.9 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;
  - 6.10 Any other documents specified in the Special Conditions or Notice of Potential Award.
7. **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.
- 7.1 **Pollution Liability Insurance Waived.** The pollution liability insurance policy requirement set forth in subsection 4.3(A)(4) of the General Conditions is hereby waived and does not apply to this Contract.
  - 7.2 **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.
8. **Construction Manager Role and Authority.** The Construction Manager for this Project is TBD. The Construction Manager will assist City in the management of the construction

of the Project. The Construction Manager may perform services in the areas of supervision and coordination of the work of Contractor and/or other contractors, scheduling the Work, monitoring the progress of the Work, providing City with evaluations and recommendations concerning the quality of the Work, recommending the approval of progress payments to Contractor, or other services for the Project in accordance with the Construction Manager's contract with City.

- 8.1 Communications.** Contractor must submit all notices and communications relating to the Work directly to the Construction Manager in writing, as follows:

TBD

With a copy to the Engineer:

Suyesh Shrestha  
City of Cupertino Project Manager  
[SuyeshS@cupertino.org](mailto:SuyeshS@cupertino.org)  
(408)777-3172

- 8.2 On-Site Management and Communication Procedures.** The Construction Manager will provide and maintain a management team on the Project site to provide contract administration as an agent of City, and will establish and implement coordination and communication procedures among City, the Design Professional, Contractor, and others.

- 8.3 Contract Administration Procedures.** The Construction Manager will establish and implement procedures for reviewing and processing requests for clarifications and interpretations of the Contract Documents, Shop Drawings, samples, other submittals, schedule adjustments, Change Order proposals, written proposals for substitutions, payment applications, and maintenance of logs.

- 8.4 Pre-Construction Conference.** Contractor will attend the pre-construction conference, during which the Construction Manager will review the Contract administration procedures and Project requirements.

- 8.5 Contractor's Construction Schedule.** The Construction Manager will review Contractor's construction schedules and will verify that each schedule is prepared in accordance with the requirements of the Contract Documents.

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

- 9.1** Contractor must replace, with thermoplastic, any existing striping within and adjacent to the Project site that is damaged during the Work. Partially damaged striping must be replaced in its entirety.
- 9.2** Contractor must replace any survey monuments that are damaged or removed during the Work, with a Record of Survey filed by a licensed land surveyor as required by California law.
- 9.3** Before removing any traffic control or street signs on the Project site, Contractor must take photographs showing their original locations. Upon completion of each phase of construction, Contractor must temporarily reset the signs at those locations. Contractor must then replace the signs permanently upon completion

of the Work and the cost of their removal and replacement must be included in the Bid Proposal.

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

**10. Lines and Grades Verification**

All Work must be done to the lines, grades, and elevations indicated on the Plans and Specifications, and in accordance with all applicable codes and laws. Contractor is required to verify forms and other work comply with lines, grades and elevations. Prior to pouring or placing any concrete or asphalt Contractor must have a California licensed land surveyor or civil engineer field verify lines, grades and elevations prior to proceeding with the placement of concrete or asphalt. The land surveyor or civil engineer must have at least five years of relevant experience, and must be acceptable to the City. Contractor must provide City verification of the licensing and experience for each proposed land surveyor or civil engineer. Contractor must provide City with inspection results for form and grade work. Contractor must remedy any non-compliant Work at no additional cost to City.

- 11 Notification of Residents, Schools and Businesses** – The Contractor shall notify, in writing, residents, businesses and schools within a 300 foot radius of project limits at a minimum of two times prior to start of construction. The first notice shall be given to all residents, businesses and schools within the project area **five working days** prior to any construction operation. The second notice shall be given to residents, businesses and schools **two working days** prior to any construction operation. Both notices shall be in writing and submitted to the Engineer for review and approval. Sample notice is below. Notices shall include the project name, describe the nature and duration of the Contractor's operations, and provide a toll-free telephone number or (408) area code number at which a Contractor's representative may be contacted **24 hour per day** for problems or emergencies encountered by residents and/or businesses. Answering machines and voice mail shall not be permitted. Then notice will also contain the City's Construction Management contact information. A separate notice shall be given at least **two working days** prior to any anticipated service/utility disruption or temporary closure of access to any driveway. The notice shall indicate the duration of the disruption. The Contractor shall submit a written request to the Engineer regarding the temporary closure of access to any driveway. No driveway access shall be closed by the Contractor at any time without prior written authorization from the Engineer. If construction operations are delayed for any reason beyond the duration stipulated in the notices, the Contractor shall re-issue written notices that explain the delay and provide a revised schedule. All written notices to residents, schools, businesses, agencies, etc. shall be submitted to the City for review and approval. Provide the City with a schedule of the notification deliveries so that the City can confirm that the notification was completed. Payment for compliance with this section shall be deemed included in the various other items of work, and no additional compensation will be allowed therefore.

**SAMPLE NOTICE:**

**NOTICE TO RESIDENTS / BUSINESS OWNERS**

Date: [MONTH] [DAY], [YEAR]

Subject: [NAME OF PROJECT] – [One Week OR Two Day] Notice

This notice is to inform you that the City of Cupertino, Department of Public Works, has contracted with **[CONTRACTOR NAME]** to **[SCOPE OF WORK]** along **[STREET NAME]** from **[ADJACENT CROSS STREET]** to **[ADJACENT CROSS STREET]**.

This **[SCOPE OF WORK]** will mainly occur on **[WEEKDAYS, SEE "SCHEDULE OF WORKING DAYS/HOURS"]** from **[START TIME]** to **[END TIME]** and is scheduled to start in your area **APPROXIMATELY seven days from the date of this notice and will continue from [START DATE] until [END DATE]**. Please be aware that there may be construction activities that cause traffic delays.

**[CONTRACTOR NAME]** will make every effort to maintain normal traffic access and minimize disruption in your neighborhood. No Parking / Tow-Away signs will be posted in affected areas two working days in advance of enforcement. Access to driveways will be maintained at ALL times during the construction.

Prior to activities in your immediate area, you will be sent a notification **TWO WORKING DAYS** before work begins. **[CONTRACTOR NAME]** and the City of Cupertino, Department of Public Works, apologize for any inconvenience due to these activities. If you have any questions or need assistance as these activities progress, please call the number(s) listed below:

**[CONTRACTOR NAME]**

**[NAME OF PROJECT MANAGER, CONTRACTOR]**

Project Manager

**(XXX) XXX-XXXX (24-hour number)**

**City of Cupertino**

**(NAME OF CONSTRUCTION MANAGEMENT FIRM IF ONE)**

**(PERSON'S NAME FROM CONSTRUCTION MANAGEMENT FIRM)**

**(XXX) XXX-XXXX (24-hour number)**

City Office: **(408)777-3354** Department of Public Works

Thank you for your patience and cooperation,

**[NAME OF PROJECT MANAGER, CONTRACTOR]**, Project Manager  
**[NAME OF CONSTRUCTION FIRM]**

## **12. Construction and Demolition Debris Management Plan**

A completed construction and demolition (C&D) Debris Management Plan must be submitted using the City's Green Halo on-line application. All debris disposal and recycling from the construction project must be tracked throughout the duration of the project. The contractor must use Green Halo [cupertino.wastetracking.com](http://cupertino.wastetracking.com) to create their Plan and to submit all construction waste generation tonnage information. No additional compensation will be paid for implementation of the Debris Management Plan and failure to meet all plan requirements may result in work stoppage, fines, and/or backcharges. For additional information, visit [www.cupertino.org/greendev](http://www.cupertino.org/greendev)

## **13. Additional City Holiday**

Juneteenth (June 19) is a City Holiday and is not a Working Day

END OF SPECIAL CONDITIONS

**100% TECHNICAL PROVISIONS  
FOR  
PUMPKIN-FIESTA STORM DRAIN IMPROVEMENT  
PROJECT**

**CUPERTINO, CALIFORNIA**

**DATE: FEBRUARY, 2023**

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## **APPENDIX A**

## SECTION 01 00 25 – MEASUREMENT AND PAYMENT

### PART 1 - GENERAL

#### 1.1 BID SCHEDULE

BID ITEM	APPROX. QTY.	UNIT	DESCRIPTION	UNIT PRICE	EXT. PRICE
1	1	LS	<b>Mobilization</b>	\$	\$
2	1	LS	Storm Water Pollution & Dust Control	\$	\$
3	1	LS	Traffic Control & General Safety Measures	\$	\$
4	1	LS	Trench Safety Measures	\$	\$
5	904	LF	Remove & Disposal of Existing Storm Drain Pipes	\$	\$
6	6	EA	Remove & Disposal of Existing Storm Manholes	\$	\$
7	182	LF	Reinforced Concrete Box Culvert (4'x2')	\$	\$
8	150	LF	Reinforced Concrete Box Culvert (7'x3')	\$	\$
9	48	LF	Reinforced Concrete Box Culvert (7'x4')	\$	\$
10	30	LF	16" Steel Casing (Sewer)	\$	\$
11	3	EA	48" Manhole	\$	\$
12	2	EA	Cast-in-Place Concrete Closure Piece	\$	\$
13	1	EA	Junction Structure	\$	\$
14	1	EA	Transition Structure #1	\$	\$
15	1	EA	Transition Structure #2	\$	\$
16	1	EA	Transition Structure #3	\$	\$
17	43	LF	12" RCP Class IV	\$	\$
18	404	LF	36" RCP Class IV	\$	\$
19	9	EA	Reconnect Catch Basin Lateral Pipes	\$	\$
20	3,410	SY	Slurry Seal	\$	\$

#### 1.2 REQUIREMENT

Payment for the various items of the Bid Schedule, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the

items of work being described, as necessary to complete the various items of the Work all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of permits and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the California Division of Industrial Safety and the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). No separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenant items of work.

### **1.3 BID ITEM NO. 1 – MOBILIZATION AND DEMOBILIZATION**

The contract lump-sum price paid for Bid Item No. 1, Mobilization and Demobilization, shall include full compensation for furnishing all labor, materials, tools and equipment, temporary facilities, movement onto the sites, sanitation facilities, cost of bonds, and insurances for both the prime and subcontractors, removal of temporary facilities at the completion of the projects, and all other related mobilization and demobilization costs. Mobilization bid price shall not exceed ten percent (10%) of the total bid.

Payment for this Item 1 shall be made as follows:

- A. Fifty percent (50%) of the mobilization bid price, less retention, will be paid on the initial billing, provided that all equipment is on-site and bond insurance fees are paid.
- B. Forty percent (40%) of the mobilization bid price, less retention, will be paid on a prorated basis during the remaining life of the contract.
- C. Ten percent (10%) of the mobilization bid price, plus any remaining amount left from the prorated payments, less retention, will be paid upon satisfactory completion of punch list items, cleaning up, and removal of all temporary facilities and equipment from the project sites.

### **1.4 BID ITEM NO. 2 – STORM WATER POLLUTION AND DUST CONTROL**

The contract lump sum price paid for Storm Water Pollution and Dust Control shall constitute full compensation for furnishing all labor, equipment, materials, and incidentals for doing all work involved in Storm Water Pollution Measures, in accordance with these Specifications, complete and in place, including preparation of storm water control plan, hiring Qualified SWPPP Practitioner (QSP) and Qualified SWPPP Developer (QSD), performing all the work involved and necessary for the planning, transportation, implementation, monitoring, and maintenance of all storm water pollution prevention and erosion control measures as specified in these Specifications.

### **1.5 BID ITEM NO. 3 – TRAFFIC CONTROL AND GENERAL SAFETY MEASURES**

The contract lump-sum price paid for Bid Item No. 2, Traffic Control and General Safety Measures, shall constitute the full compensation for all labor, materials, tools, and equipment required to provide a safe working environment above ground for both workers and the general public through effective use of traffic control devices, including, but not limited to, preparation of traffic control plans, notices, signs, barricades, delineators, sign relocations, flag holders, auxiliary police services, hiring and coordinating with City approved electrical contractors for signal modifications, replacing traffic signal loops within 72-hours, and all incidentals as shown on the Plans, as specified in these specifications, and as required by the Engineer.

Bid Item 3 includes traffic control requirements for the entire project. Contractor must prepare and submit a Traffic Control Plan to the City for review and approval before the beginning of construction. No payment for traffic control will be made until the Contractor has developed and submitted to the City a satisfactory traffic control plan. Contractor shall prepare to keep one lane open at all times where possible, determined at the discretion of the City.

**1.6 BID ITEM NO. 4 – TRENCH SAFETY MEASURES**

The contract lump-sum price paid for Bid Item No. 4, Trench Safety Measures, shall constitute the full compensation for all labor, materials, tools, and equipment required to provide a safe working environment in trenches for workers as required by codes, and regulations, including, but is not limited to, shoring, dewatering, and all incidentals required to perform the task as shown on the Plans, as specified in these specifications, and as required by the Engineer.

Bid Item 4 includes trench safety measures for the entire project. Contractor must prepare and submit a shoring and dewatering plan to the City for review and approval before the beginning of construction. No payment for Bid Item 4 will be made until the Contractor has developed and submitted to the City a satisfactory shoring and dewatering plan.

**1.7 BID ITEM NO. 5 – REMOVAL AND DISPOSAL OF EXISTING STORM DRAIN PIPE**

The contract price measured and paid on a per lineal foot basis for Bid Item No. 5, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment required for removal and disposal of existing storm drain pipe that have less than 48-inches of inside diameter, including, but is not limited to, verifying and confirming location of all existing utilities prior to excavation, potholing locations shown on drawings, saw cutting pavement and curb and gutter, trenching, excavation, removal of existing concrete pipe, off-haul and disposal of pipe and all excess material at legal facility, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.8 BID ITEM NO. 6 – REMOVAL AND DISPOSAL OF EXISTING STORM MANHOLES**

The contract price measured and paid on a per each basis for Bid Item No. 6, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment required for removal and disposal of existing storm drain manholes, including, but is not limited to, verifying and confirming location of existing utilities prior to excavation, saw cutting pavement and curb and gutter, trenching, excavation, removal of existing concrete pipe, off-haul and disposal of pipe and all excess material at legal facility, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.9 BID ITEM NO. 7 – FURNISH AND INSTALL REINFORCED CONCRETE BOX (4'X2')**

The contract price measured and paid on a per lineal foot basis for Bid Item No. 7, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment to furnish and install 4-feet wide by 2-feet rise pre-cast reinforced concrete box, including, but is not limited to, verifying and confirming location of existing utilities prior to excavation, saw cutting pavement and curb and gutter, trenching, excavation, hand digging and/or vacuum excavating carefully around existing underground utilities, protection of existing thrust blocks, temporary support for utilities crossings, concrete casement of sewer lateral, preparing suitable foundation for placement of bedding, bedding and compaction, installing reinforced concrete box in place with watertight joints, backfill and compaction, restoration of

pavement and concrete surfaces, off-haul and disposal of all excess material, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.10 BID ITEM NO. 8 – FURNISH AND INSTALL REINFORCED CONCRETE BOX (7’X3’)**

The contract price measured and paid on a per lineal foot basis for Bid Item No. 8, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment to furnish and install 7-feet wide by 3-feet rise pre-cast reinforced concrete box, including, but is not limited to, verifying and confirming location of existing utilities prior to excavation, saw cutting pavement and curb and gutter, trenching, excavation, hand digging and/or vacuum excavating carefully around existing underground utilities, protection of existing thrust blocks, temporary support for utilities crossings, concrete casement of sewer lateral, preparing suitable foundation for placement of bedding, bedding and compaction, installing reinforced concrete box in place with watertight joints, backfill and compaction, restoration of pavement and concrete surfaces, off-haul and disposal of all excess material, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.11 BID ITEM NO. 9 – FURNISH AND INSTALL REINFORCED CONCRETE BOX (7’X4’)**

The contract price measured and paid on a per lineal foot basis for Bid Item No. 9, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment to furnish and install 7-feet wide by 4-feet rise pre-cast reinforced concrete box, including, but is not limited to, verifying and confirming location of existing utilities prior to excavation, saw cutting pavement and curb and gutter, trenching, excavation, hand digging and/or vacuum excavating carefully around existing underground utilities, protection of existing thrust blocks, temporary support for utilities crossings, concrete casement of sewer lateral, preparing suitable foundation for placement of bedding, bedding and compaction, installing reinforced concrete box in place with watertight joints, backfill and compaction, restoration of pavement and concrete surfaces, off-haul and disposal of all excess material, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.12 BID ITEM NO. 10 – FURNISH AND INSTALL 16” STEEL SLEEVE**

The contract price measured and paid on a per lineal foot basis for Bid Item No. 10, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment to install the 16” steel casing and 8” HDPE pipe inside steel casing, including, but is not limited to, coordinating with Cupertino Sanitary District, preparing and submitting a work plan for District review and approval, coordinating with homeowners, installing temporary sewer flow diversion including providing plugs, pumps, pipe, generators, and standby emergency equipment, for above grade installation of bypass system, access ramps for bypass lines, saw cutting, excavation, hand digging and/or vacuum excavating carefully around existing underground utilities, protection of existing thrust blocks, support of crossing wet utilities, removal of existing 8” PVC pipe, placement of bedding and compaction, installation of steel sleeve, welding joints, installing the new HDPE pipe, fusing the new HDPE pipe where necessary, hydrostatic testing and televising the new installed HDPE pipe, installation of casing sspacers, casing end seals, backfill and compaction, pavement restoration, off-haul and disposal of all excess material including Class III spoils, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.13 BID ITEM NO. 11 – FURNISH AND INSTALL 48” MANHOLE**

The contract price measured and paid on a per each basis for Bid Item No. 11, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment to furnish and install 48” pre-cast reinforced concrete manhole, including, but is not limited to, verifying and confirming location of existing utilities prior to excavation, saw cutting pavement and curb and gutter, trenching, excavation, hand digging and/or vacuum excavating carefully around existing underground utilities, protection of existing thrust blocks, temporary support for utilities crossings, preparation of subgrade, placement of bedding and compaction, installing of precast concrete manhole sections with frame and cover, installing watertight seals, connecting new and existing storm drain pipes, installing concrete collars, grouting, backfill and compaction, restoration of pavement and concrete surfaces, off-haul and disposal of all excess material, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.14 BID ITEM NO. 12 – INSTALL CAST-IN-PLACE CLOSURE PIECE**

The contract price measured and paid on a per each basis for Bid Item No. 12, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment necessary for installation of cast-in-place closure piece, including, but is not limited to, preparing and submitting for review structural design drawings and calculations signed and stamped by a licensed structural engineer, verifying and confirming location of existing utilities prior to excavation, saw cutting pavement and curb and gutter, trenching, excavation, hand digging and/or vacuum excavating carefully around existing underground utilities, protection of existing thrust blocks, temporary support for utilities crossings, preparation of subgrade, placement of aggregate base layer, backfilling and compaction, placement of concrete forms, steel reinforcement, dowels, connecting reinforcement to precast box culvert, placement of waterstops, Portland cement concrete placement, form removal, grouting, backfill and compaction, restoration of pavement and concrete surfaces, off-haul and disposal of all excess material, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.15 BID ITEM NO. 13 – FURNISH AND INSTALL JUNCTION STRUCTURE**

The contract price measured and paid on a per each basis for Bid Item No. 13, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment necessary for installation of precast or cast-in-place Junction Structure, including, but is not limited to, preparing and submitting for review structural design drawings and calculations signed and stamped by a licensed structural engineer, verifying and confirming location of existing utilities prior to excavation, saw cutting pavement and curb and gutter, trenching, excavation, hand digging and/or vacuum excavating carefully around existing underground utilities, protection of existing thrust blocks, temporary support for utilities crossings, preparation of subgrade, placement of aggregate base layer, backfilling and compaction, placement of concrete forms, steel reinforcement, dowels, tying of reinforcement to precast box and pipe connections, placement of waterstops, Portland cement concrete placement, form removal, grouting, installing manhole riser with frame and cover, backfill and compaction, restoration of pavement and concrete surfaces, off-haul and disposal of all excess material, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.16 BID ITEM NO. 14 – FURNISH AND INSTALL TRANSITION STRUCTURE # 1**

The contract price measured and paid on a per each basis for Bid Item No. 14, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment necessary for

installation of precast or cast-in-place Transition Structure#1, including, but is not limited to, preparing and submitting for review structural design drawings and calculations signed and stamped by a licensed structural engineer, verifying and confirming location of existing utilities prior to excavation, saw cutting pavement and curb and gutter, trenching, excavation, hand digging and/or vacuum excavating carefully around existing underground utilities, protection of existing thrust blocks, temporary support for utilities crossings, preparation of subgrade, placement of aggregate base layer, backfilling and compaction, placement of concrete forms, steel reinforcement, dowels, tying of reinforcement to precast box and pipe connections, placement of waterstops, Portland cement concrete placement, form removal, grouting, installing manhole riser with frame and cover, backfill and compaction, restoration of pavement and concrete surfaces, off-haul and disposal of all excess material, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.17 BID ITEM NO. 15 – FURNISH AND INSTALL TRANSITION STRUCTURE # 2**

The contract price measured and paid on a per each basis for Bid Item No. 15, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment necessary for installation of precast or cast-in-place Transition Structure#2, including, but is not limited to, preparing and submitting for review structural design drawings and calculations signed and stamped by a licensed structural engineer, verifying and confirming location of existing utilities prior to excavation, saw cutting pavement and curb and gutter, trenching, excavation, hand digging and/or vacuum excavating carefully around existing underground utilities, protection of existing thrust blocks, temporary support for utilities crossings, preparation of subgrade, placement of aggregate base layer, backfilling and compaction, placement of concrete forms, steel reinforcement, dowels, tying of reinforcement to precast box and pipe connections, placement of waterstops, Portland cement concrete placement, form removal, grouting, installing manhole riser with frame and cover, backfill and compaction, restoration of pavement and concrete surfaces, off-haul and disposal of all excess material, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.18 BID ITEM NO. 16 – FURNISH AND INSTALL TRANSITION STRUCTURE # 3**

The contract price measured and paid on a per each basis for Bid Item No. 16, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment necessary for installation of precast or cast-in-place Transition Structure#2, including, but is not limited to, preparing and submitting for review structural design drawings and calculations signed and stamped by a licensed structural engineer, verifying and confirming location of existing utilities prior to excavation, saw cutting pavement and curb and gutter, trenching, excavation, hand digging and/or vacuum excavating carefully around existing underground utilities, protection of existing thrust blocks, temporary support for utilities crossings, preparation of subgrade, placement of aggregate base layer, backfilling and compaction, placement of concrete forms, steel reinforcement, dowels, tying of reinforcement to precast box and pipe connections, placement of waterstops, Portland cement concrete placement, form removal, grouting, installing manhole riser with frame and cover, backfill and compaction, restoration of pavement and concrete surfaces, off-haul and disposal of all excess material, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.19 BID ITEM NO. 17 – FURNISH AND INSTALL 12” REINFORCED CONCRETE PIPE**

The contract price measured and paid on a per lineal foot basis for Bid Item No. 17, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment to furnish and install 12” reinforced concrete pipe, including, but is not limited to, verifying and confirming location of existing utilities prior to excavation, saw cutting pavement and curb and gutter, trenching, excavation, hand digging and/or vacuum excavating carefully around existing underground utilities, protection of existing thrust blocks, temporary support for utilities crossings, preparing suitable foundation for placement of bedding, bedding and compaction, installing reinforced concrete pipe in place with watertight joints, installing concrete collar, backfill and compaction, restoration of pavement and concrete surfaces, off-haul and disposal of all excess material, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.20 BID ITEM NO. 18 – FURNISH AND INSTALL 36” REINFORCED CONCRETE PIPE**

The contract price measured and paid on a per lineal foot basis for Bid Item No. 18, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment to furnish and install 36” reinforced concrete pipe, including, but is not limited to, verifying and confirming location of existing utilities prior to excavation, saw cutting pavement and curb and gutter, trenching, excavation, hand digging and/or vacuum excavating carefully around existing underground utilities, protection of existing thrust blocks, temporary support for utilities crossings, concrete casement of sewer lateral, preparing suitable foundation for placement of bedding, bedding and compaction, installing reinforced concrete pipe in place with watertight joints, backfill and compaction, restoration of pavement and concrete surfaces, off-haul and disposal of all excess material, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.21 BID ITEM NO. 19 – RECONNECT CATCH-BASIN LATERAL PIPES**

The contract price measured and paid on a per each basis for Bid Item No. 19, shall constitute the full compensation for furnishing all labor, materials, tools, and equipment to reconnect existing catch-basin lateral pipes, including, but is not limited to, saw cutting pavement and curb and gutter, trenching, excavation, bedding and compaction, connecting existing storm drain pipes, placement of concrete forms, steel reinforcement, dowels, tying of reinforcement to manhole or precast box, placement of waterstops, Portland cement concrete placement, form removal, grouting, installing concrete collars, and all incidentals, complete in place, as shown on the Plans and Standard Detail, as specified in these specifications, and as required by the Engineer.

**1.22 BID ITEM NO. 20 – SLURRY SEAL**

The contract price measured and paid on a per square yard basis for Bid Item No. 20 shall constitute the full compensation for furnishing all labor, materials, tools, and equipment for placing slurry seal, but is not limited to, covering and protecting existing utility lids, cleaning and filling surface cracks, and all other necessary work in accordance with the Plans, Standard Details, these Specifications, and as required by City. Slurry seal will be measured by the actual square yard satisfactorily completed.

NOTE TO BIDDER: The bid unit price shall not be subject to adjustment should the actual quantity differ by more than 25% of the Bid Schedule quantity.

**END OF SECTION**

## **SECTION 01 57 23 – STORM WATER POLLUTION CONTROL**

### **PART 2 - GENERAL**

#### **2.1 RELATED DOCUMENTS**

- A. State Water Resources Control Board Construction General Permit for Storm Water Discharges associated with construction and land disturbance activities, adopted Order 2009-0009-DWQ (As amended by 2010-0014-DWQ and 2012-0006-DWQ)

#### **2.2 RELATED SECTIONS**

- A. Section 02 40 00 Demolition
- B. Section 31 21 00 Utility Trenching and Backfill

#### **2.3 SUMMARY**

- A. All construction or demolition activity, including, but not limited to, clearing, grubbing, grading, or excavation, or any other activity that results in a land disturbance shall be subject to the State Water Resources Control Board Construction General Permit Order No. 2009-0009-DWQ (As amended by 2010-0014-DWQ and 2012-0006-DWQ)
- B. In compliance with the State and Federal regulations on construction storm water management and urban runoff pollution control, no pollutants will be allowed to enter the storm drainage system.
- C. The Contractor shall prepare a site specific Storm Water Pollution Plan (SWPPP) and file the Notice of Intent and the Notice of Termination at the end of the project.
- D. The Contractor shall coordinate with the City to ensure the delivery of all engineering, material, labor and equipment for planning, documenting, submitting, monitoring, testing, installing, implementation and maintenance of all surface-water pollution prevention and erosion control measures. This work includes but is not necessarily limited to:
  - A. Implementing the site specific Storm Water Pollution Prevention Plan (SWPPP).
  - B. Furnishing, placing, and installing effective measures for preventing runoff of soil, silts, gravel, hazardous chemicals or other materials prohibited by the Regional Water Quality Control Board (RWQCB) from entering the storm water drainage system.
  - C. Management of on-site construction materials in such a manner as to prevent said materials from contacting storm water or wash water and running off into the storm drain system.
  - D. Complying with applicable standards and regulations specified herein.
  - E. Maintaining the most current revised SWPPP plan at the Contractor's work site.
  - F. Reviewing any changes in the SWPPP plan at the weekly progress meetings. The Contractor shall submit a numbered checklist of the current status of each prevention measure on the job site.
- E. In this section, the term "storm drain system" shall include: storm water conduits; storm drain inlets; and other storm drain structures, street gutters, channels, and ditches.

- F. Contractor shall have storm water pollution prevention measures in place and conduct inspections daily or as required by RWQCB requirements. Contractor's QSP shall develop a Rain Event Action Plan as required by the requirements, and Contractor shall bear the costs of all Likely Precipitation Events, and all Qualifying Rain Events. It is the responsibility of the Contractor to be prepared for a rain event in the non-rainy and rainy season, and to be aware of weather predictions. The City is not responsible for informing the Contractor of rain predictions.

## 2.4 DEFINITIONS

- A. LRP: Legally Responsible Party, the owner of the property, the Owner. As the LRP, it is the intention of the Owner to ensure through this Contract that the Contractor shall properly follow, implement, and execute all provisions of the State Water Resources Control Board Construction General Permit for Storm Water Discharges on the behalf of the Owner, and that the Contractor shall include all such costs within their bid.
- B. Data Submitter. Data Submitter is any individual authorized by the LRP or an Approved Signatory to enter data on behalf of the LRP. The Owner will authorize and link the Contractor as a Data Submitter, to allow Contractor to upload and submit the required documents to the SMARTS system.
- C. PRD: Permit Registration Documents, which consist of the Notice of Intent, Risk Assessment, Post-Construction Calculations, a Site Map, the SWPPP, a signed certification statement by the LRP, and the annual fee.
- D. QSD: Qualified SWPPP Developer, a certified person responsible for preparing, amending and certifying the project SWPPP; in this case the Owner's Representative.
- E. QSP: Qualified SWPPP Practitioner, a certified person responsible for non-storm water and storm water visual observations, sampling and analysis, and for ensuring full compliance with the General Permit and implementation of all elements of the SWPPP.
- F. RWQCB: Regional Water Quality Control Board, one of nine Regional Boards of SWRCB.
- G. SMARTS: Storm Water Multiple Application and Report Tracking System.  
<https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp>
- H. SWRCB: State Water Resources Control Board is the State
- I. SWPPP: Storm Water Pollution Prevention Plan, to be developed and certified by a QSD and to be implemented by a QSP. QSP shall direct Contractor on all aspects of the SWPPP.

## 2.5 SUBMITTALS AND RESPONSIBILITIES

- A. Follow submittal procedure outlined in Section 2.5 - General Conditions.
- B. The Contractor shall develop and submit a site specific State of California Storm Water Pollution Prevention Plan (SWPPP) in PDF format and upload to the State Water Resources Control Board's SMART system. The City will review the submittal and approve it in the SMARTS system, for review by the SWRCB. The Preparation of the

City of Cupertino  
Pumpkin-Fiesta Storm Drain Improvement Project

SWPPP shall be in accordance with the State Regional Water Quality Control Board Order No. 2009-0009-DWQ (As amended by 2010-0014-DWQ and 2012-0006-DWQ).

- D. Permit Registration Documents (PRDs) as defined in Attachment B of the Construction General Permit include the Notice of Intent, Risk Assessment, Post-Construction Calculations, a Site Map, the SWPPP, a signed certification statement by the LRP, and the first annual fee. The PRDs shall be electronically filed to the State SMARTS system by the Contractor on behalf of the City. The City shall supply the signed certification statement. The City will electronically review and approve the PRDs to the State Water Resources Board via the SMARTS system, after uploaded to the SMARTS by the Contractor.
- E. No construction work shall begin until the Contractor receives written notification from the City that the Permit Registration Documents components have been deemed complete by the SMARTS system and a Waste Discharge Identification (WDID) number has been emailed to the City by the system.
- F. The Contractor shall ensure that all elements of the project SWPPP will be implemented by a Qualified SWPPP Practitioner (QSP). The QSP must meet the Construction General Permit certification requirements.
- G. The Contractor shall implement, maintain and be responsible for collection and input of data and for the effectiveness of the SWPPP measures in accordance with the Risk Level as determined by the Risk Assessment procedure as described in the General Permit Appendix 1. The Contractor will determine the Risk Level.
- H. The Contractor shall maintain a rain gauge at the site and record daily (Monday through Friday) rainfall amounts until the project is complete.
- I. The project SWPPP shall be prepared to address the following:
  - A. All known/potential pollutants and their sources associated with construction activities.
  - B. All non-storm water discharges are identified and either eliminated, controlled, or treated.
  - C. Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in storm water discharges and authorized non-storm water discharges during construction.
  - D. Stabilization BMPs installed to reduce or eliminate pollutants after construction are completed, effective, and maintained.
- J. The project SWPPP shall be made available at the construction job site during working hours while construction is occurring and shall be made available upon request by the City or State Inspector.
- K. The Contractor shall notify the City if the QSP is no longer associated with the work. The City shall be notified and a qualified replacement shall be named within twenty-four (24) hours.
- L. The Contractor shall provide SWPPP Amendment documents on a regular basis to the City in electric PDF format and submit those files as required to the State SMARTS system on behalf of the City. The contractor will inform the City after documents are uploaded to the system so the City may process them in the system as required. SWPPP Amendments shall be provided at a minimum of once every three (3) months. If a

SWPPP Amendment is not needed, the Contractor and QSP shall send notification to the City stating "Amendment is not necessary" for the period of construction.

- M. The Contractor shall provide all documentation required for Annual Reporting and the Notice of Termination to the SMARTS system in PDF format in a timely manner as required by the SWRCB. The Contractor will inform the City when documents are ready for City certification in the SMARTS system.

## **2.6 PERMIT VIOLATIONS**

- A. If there is a Permit violation, the Contractor shall notify the City immediately and corrections shall be made as necessary to comply with the General Permit.
- B. The Contractor is responsible for any fines, and additional sampling, testing and monitoring that result from their negligence to comply with the General Permit requirements without any compensation from the City. If the City is forced to pay any fines or fees to the SWRCB due to the negligence of the Contractor to comply with the General Permit requirements, the costs shall be deducted from the Contractor's contract value.
- C. If the Regional Water Quality Board or City inspector is at the site, the Contractor shall notify the City within twenty-four (24) hours and shall provide a written notice of any deficiencies noted and/or changes requested by the inspector.
- D. Violation of the General Permit may cause the City to issue a stop-work notice and take necessary actions to require the Contractor to correct and comply with the Permit requirements and regulations. All costs related to the stop-work action and corrective work to come into compliance with the General Permit shall be at the sole expense of the Contractor.

## **PART 3 - PRODUCTS**

### **3.1 PRODUCTS AND MATERIALS**

- A. Products and materials used in the implementation of this work shall be as identified by the approved SWPPP plan determined by the Contractor.

## **PART 4 - EXECUTION**

### **4.1 EXECUTION AND IMPLEMENTATION**

- A. Execution and implementation of this work shall be as identified by the approved SWPPP plan determined by the City, and executed by the Contractor's QSP.

END OF SECTION

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## **SECTION 02 40 00 – DEMOLITION**

### **PART 1 GENERAL**

#### **1.1 SECTION INCLUDES**

- A. Removing above-grade site improvements within limits indicated.
- B. Disconnecting, capping or sealing, and abandoning site utilities in place.
- C. Disconnecting, capping or sealing, and removing site utilities.
- D. Disposing, recycling, reusing, and/or salvaging of objectionable material.

#### **1.2 RELATED DOCUMENTS**

- A. “Geotechnical Recommendations Report, Pumpkin Fiesta Phase 1 Storm Drain”, prepared by Haley and Aldrich, Inc., dated May 2022.
- B. Section 31 21 00 Utility Trenching and Backfill

#### **1.3 DEFINITIONS**

- A. ANSI: American National Standards Institute.
- B. CAL-OSHA: California Occupational Safety and Health Administration.
- C. CA-CHPS: California Collaborative for High Performance Schools

#### **1.4 SUBMITTALS**

- A. Follow Submittal procedure outlined in Section 2.5 - General Conditions.

#### **1.5 PROJECT CONDITIONS**

- A. Except for materials indicated to be stockpiled or to remain the City's property, cleared materials are the Contractor's property. Remove cleared materials from site and dispose, recycle, reuse, and/or salvage the materials in a lawful manner. If possible, identify an organization within 1,000 miles that will purchase or accept the donation of construction waste for reuse. This organization must intend to reuse the waste as-is, or sell the material for the intent of re-use (CA-CHPS Criteria).
- B. Salvageable Improvements: Carefully remove items indicated to be salvaged and store where indicated on plans or where designated by the City. Avoid damaging materials designated for salvage.

- C. Unidentified Materials: If unidentified materials are discovered, including hazardous materials that will require additional removal other than is required by the Contract Documents, immediately report the discovery to the City. If necessary, the City will arrange for any testing or analysis of the discovered materials and will provide instructions regarding the removal and disposal of the unidentified materials.

## **PART 2 PRODUCTS**

### **2.1 SOIL MATERIALS**

- B. Backfill excavations resulting from demolition operations with approved on-site or import materials conforming to structural backfill defined in "Geotechnical Recommendations Report, Pumpkin Fiesta Phase 1 Storm Drain", prepared by Haley and Aldrich, Inc., dated May 2022.

## **PART 3 EXECUTION**

### **3.1 PREPARATION**

- A. Protect and maintain benchmarks and survey control points during construction.
- B. Protect existing site improvements to remain during construction.
- C. Clear the site of any existing pavements, vegetation, organic topsoil, debris, existing undocumented loose or soft fill, and other deleterious material within the proposed improvement areas. Removed fill soil may be evaluated by the Geotechnical Engineer for possible reuse and placement as engineered fill. Holes resulting from the removal of underground obstructions extending below the proposed finish grade should be cleared and backfilled with properly compacted engineered fill or other material approved by the Geotechnical Engineer. Backfilling operations for any excavations to remove deleterious material should be carried out under the observation of the Geotechnical Engineer.

### **3.2 RESTORATION**

- A. Restore damaged improvements to their original condition, as acceptable to the City.

### **3.3 UTILITIES**

- A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed or abandoned.
- B. Arrange to shut off indicated utilities with utility companies or verify that utilities have been shut off.
- C. Existing Utilities: If encountered, do not interrupt utilities serving facilities occupied by the City or others unless authorized in writing by the City, and then only after arranging to provide temporary utility services according to requirements indicated. Utility pipelines less than four inches in diameter to be abandoned may be left in place provided they will not be in close

proximity to new foundation elements or interfere with new utilities. Said pipes should be plugged at the ends with concrete or sand-cement slurry. Larger utility pipelines or pipelines that underlie new foundations should be removed and replaced with engineered fill, or left in place and completely grouted with flowable sand-cement slurry or other approved Controlled Density Fill.

- D. Coordinate utility interruptions with utility company affected.
- E. Do not proceed with utility interruptions without the permission of the City and utility company affected. Notify City and utility company affected two working days prior to utility interruptions.
- F. Excavate and remove underground utilities that are indicated to be removed
- G. Securely close ends of abandoned piping with tight fitting plug or wall of concrete minimum 6-inches thick.

### 3.4 **SITE IMPROVEMENTS**

- A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, and gutters, as indicated. Where concrete slabs, curb, gutter and asphalt pavements are designated to be removed, remove bases and subbase to surface of underlying, undisturbed soil.
- C. Unless the existing full-depth joints coincide with line of pavement demolition, neatly saw-cut to full depth the length of existing pavement to remain before removing existing pavement. Saw-cut faces vertically.
- D. Remove driveways, curbs, gutters and sidewalks by saw cutting to full depth. If saw cut falls within 30-inches of a construction joint, expansions joint, score mark or edge, remove material to joint, mark or edge.

### 3.5 **BACKFILL**

- A. Place and compact material in excavations and depressions remaining after site clearing in conformance with Section 31 20 00 Earth Moving.

### 3.6 **DISPOSING**

- A. Remove surplus obstructions, demolished materials, and waste materials, including trash and debris, and legally dispose of them off the City's property. In addition to disposing the materials, consider recycling or donating/selling the materials to a reuse organization within 1000 miles.

**END OF SECTION**

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**SECTION 03 30 00 – PORTLAND CEMENT CONCRETE**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Materials for Portland cement concrete.
- B. Aggregate and aggregate grading for Portland cement concrete.
- C. Water for Portland cement concrete.
- D. Admixtures for Portland cement concrete.
- E. Proportioning for Portland cement concrete.
- F. Mixing and transporting Portland cement concrete.
- G. Formwork for cast in place Portland cement concrete.
- H. Embedded materials for Portland cement concrete.
- I. Steel reinforcement for Portland cement concrete.
- J. Placing and finishing Portland cement concrete.
- K. Curing Portland cement concrete.
- L. Protecting Portland cement concrete.

**1.02 RELATED DOCUMENTS**

- A. ASTM:
  - 1. A 82, Cold Drawn Steel Wire for Concrete Reinforcement.
  - 2. A 185, Steel Welded Wire Fabric, Plain for Concrete Reinforcement.
  - 3. A 615, Deformed and Plain Billet Steel Bars, for Concrete Reinforcement.
  - 4. C 94, Specification for Ready-mixed Concrete.
  - 5. C 114, Method for Chemical Analysis of Hydraulic Cement.
  - 6. C 150. Portland Cement.
  - 7. C 618, Fly Ash and Raw or Calcined Natural Pozzolan for use as Natural Admixture in Portland Cement.
  - 8. C 1751, Preformed Expansion Joint Fillers for Concrete. Paving and Structural Construction (Non-extruded and Resilient Bituminous Types).
- B. Caltrans Standard Specifications:
  - 1. Section 51: Concrete Structures.
  - 2. Section 52: Reinforcement
  - 3. Section 73: Concrete Curbs and Sidewalks.
  - 4. Section 90: Portland Cement Concrete.

**1.03 DEFINITIONS**

- A. ASTM: American Society for Testing Materials

**1.04 SUBMITTALS**

- A. Submittal procedure shall be as outlined in Section 2.5 - General Conditions.
- B. Concrete Mix Design: Have all concrete mixes designed by a testing laboratory and approved by the Consulting Engineer. Conform all mixes, unless otherwise noted, to the applicable building code requirement, regardless of other minimum requirements listed herein or on the drawings. Submit mix designs for review before use. Show proportions and specific gravities of cement, fine and coarse aggregate, and water and gradation of combined aggregates. Concrete mix designs for structures including transition structures and junction structures must conform to the applicable sections of the Caltrans Standard Specifications.

## **1.05 QUALITY ASSURANCE**

- A. Concrete shall be subject to quality assurance in accordance with Section 90 of the Caltrans Standard Specifications and as modified herein.
  - 1. Slump tests: Have available, at job site, equipment required to perform slump tests. Make one slump test for each cylinder sample, from same concrete batch. Allowable maximum slump shall be 4 inches for walls and 3 inches for slabs on grade. Slump and penetration of structural concrete for junction boxes and collars shall be in conformance with Section 90-1.02G(6)
- B. Certifications:
  - 1. Provide Owner's Representative at the time of delivery with certificates of compliance signed by both Contractor and Supplier containing the following statements:
    - a. Materials contained comply with the requirements of the Contract Documents in all respects.
    - b. Proportions and mixing comply with the design mix approved by the Consulting Engineer. Design mix shall have been field tested in accordance with the herein requirements of the Caltrans Standard Specifications and produces the required compressive strength under like conditions.
    - c. Statement of type and amount of any admixtures.
  - 2. Provide Owner's Representative, at time of delivery, with certified delivery ticket stating volume of concrete delivered and time of mixing, or time of load-out in case of transit mixers.
- C. Conform to the applicable provisions of Section 51, 73 and 90 of the Caltrans Standard Specification and these Technical Specifications.
  - 1. Conform construction of Portland cement concrete surface improvements (including curbs, gutters, medians, valley gutters, walks) to the requirements of Section 73 of the Caltrans Standard Specifications unless otherwise required in these Technical Specifications or shown on the Plans.
  - 2. Construct "V" ditches in accordance with Section 72-4 of the Caltrans Standard Specifications; except that finishing shall be in accordance with Caltrans Standard Specification Section 73 instead of 53, or as otherwise required in these Technical Specifications or shown on the Plans.
  - 3. Conform other concrete structure (including junction structures and collars) construction of Portland cement concrete to the requirements of Section 51 and Section 90 of the Caltrans Standard Specifications unless otherwise required in these Technical Specifications or shown on the Plans.

## **1.06 DESIGNATION**

- A. General: Whenever the 28-day compressive strength is designated herein or on the Plans is 3,626psi or greater, the concrete shall be considered to be designated by compressive strength. The 28-day compressive strength shown herein or on the plans which are less than 25 MPa are shown for design information only and are not considered a requirement for acceptance of the concrete. Whenever the concrete is designated by class or as minor concrete herein or on the Plans, the concrete shall contain the cement per cubic yard shown in Section 90-2 of the Caltrans Standard Specifications.
- B. Unless noted otherwise herein or on the Plans, the minimum compressive strength for Portland Cement Concrete at 28 days for this Project shall be 3,626 psi.
- C. Structural concrete at junction structures and collars is designated by compressive strength. Prequalify structural concrete at junction structures and collars per Section 90-1.01D(5)(b).

## **PART 2 - PRODUCTS**

### **2.01 PORTLAND CEMENT**

- A. General: Type II (modified) cement conforming to the requirements of ASTM C 150, with the following modifications:
  - 1. Cement shall not contain more than 0.60% by weight of alkalis, calculated as the percentage of Na<sub>2</sub>O plus 0.658 times the percentage of K<sub>2</sub>O when determined by either 4 intensity flame photometry or by the atomic absorption method. The instrument and procedure used shall be qualified as to precision and accuracy in accordance with the requirements of ASTM C 114.
  - 2. The autoclave expansion shall not exceed 0.50%.
  - 3. Mortar containing the Portland cement to be used and the sand, when tested in accordance with Test Method No. Calif. 527, shall not expand in water more than 0.010% and shall have an air content less than .048%.
  - 4. Allowable tri-calcium Aluminate (C<sub>3</sub>A) by weight shall not exceed 5%. Allowable tetracalcium aluminato ferrite plus twice the tricalcium aluminate (C<sub>4</sub>AF+2C<sub>3</sub>A) by weight shall not exceed 25%. The sulfate expansion test (ASTM C 452) may be used in lieu of the above chemical requirements, provided the sulfate expansion does not exceed 0.040% at 14 days (max.).
  - 5. Except for structure concrete junction boxes and collars, Contractor may substitute pozzolan for Portland cement in amounts up to 15% of the required mix unless high early strength concrete is specified. Pozzolan shall consist of Class F Fly Ash meeting the requirements of ASTM C 618.
  - 6. For structure concrete at junction boxes and collars, cementitious material including supplemental cementitious material, must conform with Section 90-1.02 of Caltrans Standard Specifications.
- B. Cement and Supplemental Cementitious Materials for structures, including transition structures and junction structures, must conform to requirements of the Caltrans Standard Specifications.
- C. Cement for Surface Improvements: Provide a coloring equivalent to ¼ pound of lampblack per cubic yard. Add to the concrete at the central mixing plant.
- D. Liquiblack, as supplied by Concrete Corporation of Redwood City, California, may be used in lieu of lampblack. One pint of liquiblack shall be considered equal to one pound of lampblack.

### **2.02 AGGREGATE AND AGGREGATE GRADING**

- A. General: Conform to the requirements of Section 90-1.02C of the Caltrans Standard Specifications.
- B. Aggregate Size and Gradation: Conform to the requirements of section 90-1.02C(4)(d) of the Caltrans Standard Specifications for 25-mm (1-inch) maximum combined aggregate.

### **2.03 WATER**

- A. General: Conform to the requirements of section 90-1.02D of the Caltrans Standard Specifications for mixing and curing Portland cement concrete and for washing aggregates.

### **2.04 CLASSIFICATION OF PORTLAND CEMENT CONCRETE**

- A. Unless noted otherwise herein or on the Plans, the minimum compressive strength for Portland Cement Concrete at 28 days for this Project shall be 3,626 psi.

### **2.05 EXPANSION JOINT MATERIAL**

- A. Material for expansion joints in Portland cement concrete improvements shall be premolded expansion joint fillers conforming to the requirements of ASTM Designation D 1751.

Expansion joint material shall be shaped to fit the cross section of the concrete prior to being placed. Suppliers certificates showing conformance with this specification shall be delivered with each shipment of materials delivered to the job site. Unless noted otherwise herein or on the Plans expansion joint thickness shall be as follows:

1. Curbs, Curb Ramps, Island Paving, Sidewalks, Driveways and Gutter Depressions: ¼-inch.
2. Concrete Slope Protection, Gutter Lining, Ditch Lining and Channel Lining: ½-inch.
3. Structures: As indicated.

## **2.06 REINFORCEMENT AND DOWELS**

- A. Bar reinforcement for concrete improvements shall be deformed steel bars of the size or sizes called for on the plans conforming to the requirements of ASTM Designation A 615 for Grade 60 bars. Size and shape for bar reinforcement shall conform to the details shown or called for on the Plans. Substitution of wire mesh reinforcement for reinforcing bars will not be allowed.
- B. Bar reinforcement at junction structures and collars must be in conformance with the applicable requirements of Section 52 of the Caltrans Standard Specifications.
- C. Slip dowels, where noted or called for on the plans or detail drawings shall be smooth billet-steel bars as designated and conforming to the requirements of ASTM Designation A 615 for Grade 60 bars. Ends of bars inserted in new work shall be covered with a cardboard tube sealed with cork; no grease or oil shall be used.
- D. Mesh for reinforcement for concrete improvements shall be cold drawn steel wire mesh of the size and spacing called for on the plans conforming to the requirements of ASTM Designation A 82 for the material and ASTM Designation A 185 for the mesh. Size and extent of mesh reinforcement shall conform to the details shown or called for on the plans.
- E. Tie wire for reinforcement shall be eighteen (18) gauge or heavier, black, annealed conforming to the requirements of ASTM Designation A 82.
- F. Suppliers certificates showing conformance with this specification shall be delivered with each shipment of materials delivered to the job site.

## **2.07 ACCESSORY MATERIALS**

- A. Conform water stops and other items required to be embedded in of Portland Cement Concrete structures to the applicable requirements of Section 51 of the Caltrans Standard Specifications unless otherwise specifically noted or called for on the Plans or detail drawings.
- B. Curing Compounds:
  1. Regular Portland Cement Concrete: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
  2. Color Conditioned Decorative Portland Cement Concrete: Apply in accordance with the manufacturer's written instructions.

## **2.08 FORMS**

- A. Conform to the requirements of Section 51-1.03 and Section 90-1.03B(5) of the Caltrans Standard Specifications.

## **2.09 PRECAST CONCRETE STRUCTURES**

- A. Conform to the following Sections of Caltrans Standard Specifications:
  1. 51-7, Minor Structures.
  2. 70-5.02, Flared End Sections.

## **PART 3 - EXECUTION**

### **3.01 STRUCTURAL EXCAVATION**

- A. Structural excavation may be either by hand, or by machine and shall be neat to the line and dimension shown or called for on the plans. Excavation shall be sufficient width to provide adequate space for working therein, and comply with CAL-OSHA requirements.
- B. Where an excavation has been constructed below the design grade, refill the excavation to the bottom of the excavation grade with approved material and compact in place to 95% of the maximum dry density.
- C. Remove surplus excavation material remaining upon completion of the work from the job site, or condition it to optimum moisture content and compact it as fill or backfill on the site, if the material is approved by the City Engineer.

### **3.02 SOIL STERILANT**

- A. Furnish and apply to areas indicated in accordance with Section 31 20 00.

### **3.03 BRACING AND SHORING**

- A. Conform to California and Federal OSHA requirements.
- B. Place and maintain such bracing and shoring as may be required to support the sides of the excavations for the proper protection of workmen; to facilitate the work; to prevent damage to the facility being constructed; and to prevent damage to adjacent structures or facilities. Remove all bracing and shoring upon completion of the work.
- C. Be solely responsible for all bracing and shoring and, if requested by the Owner's Representative, submit details and calculations to the Owner's Representative. The Owner's Representative may forward the submittal to the Consulting Engineer and/or the California Division of Industrial Safety for their review. The Contractor's submittal shall include the basic design, assumed soils conditions and estimation of forces to be resisted, together with plans and specifications of the materials and methods to be used, and shall be prepared by a civil engineer or structural engineer registered in California. No excavations related to the proposed facility shall precede a response to the submittal by the Owner's Representative.
- D. Be solely responsible for installing and extracting the sheathing in a manner which will not disturb the position or operation of the facility being constructed or adjacent utilities and facilities.

### **3.04 PLACING CONCRETE FORMS**

- A. Form concrete improvements with a smooth and true upper edge. Side of the form with a smooth finish shall be placed next to concrete. Construct forms rigid enough to withstand the pressure of the fresh concrete to be placed without any distortion.
- B. Thoroughly clean all forms prior to placement and coat forms with an approved form oil in sufficient quantity to prevent adherence of concrete prior to placing concrete.
- C. Carefully set forms to the alignment and grade established and conform to the required dimensions. Rigidly hold forms in place by stakes set at satisfactory intervals. Provide sufficient clamps, spreaders and braces to insure the rigidity of the forms.
- D. Provide forms for back and face of curbs, lip of gutters and edge of walks, valley gutters or other surface slabs that are equal to the full depth of the concrete as shown, noted or called for on the Plans. On curves and curb returns provide composite forms made from benders or thin planks of sufficient ply to ensure rigidity of the form.

### **3.05 PLACING STEEL REINFORCEMENT**

- A. 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 plans. The length of lapped splices shall be as follows:

1. Reinforcing bars No. 8, or smaller, shall be lapped at least 45 bar diameters of the smaller bar joined, and reinforced bars Nos. 9, 10, and 11 shall be lapped at least 60 bar diameters of the smaller bars joined, except when otherwise shown on the plans.
  2. Splice locations shall be made as indicated on the plans.
- B. Accurately place reinforcement as shown on the plans and hold firmly and securely in position by wiring at intersections and splices, and by providing 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. Provide supports and ties of such strength and density to permit walking on reinforcing without undue displacement.
- C. Place reinforcing to provide the following minimum concrete cover:
1. Surfaces poured against earth: 3-inches.
  2. Formed surfaces exposed to earth or weather: 2-inches.
  3. Slabs, walls, not exposed to weather or earth: 1-inch.
- D. Minimum spacing, center of parallel bars shall be two and one half (2-1/2) times the diameter of the larger sized bar. Accurately tie reinforcing securely in place prior to pouring concrete. Placing of dowels or other reinforcing in the wet concrete is not permitted.

### **3.06 MIXING AND TRANSPORTING PORTLAND CEMENT CONCRETE**

- A. Transit mix concrete in accordance with the requirements of ASTM Designation C 94. Transit mix for not less than ten (10) minutes total, not less than three (3) minutes of which shall be on the site just prior to pouring. Mix continuous with no interruptions from the time the truck is filled until the time it is emptied. Place concrete within one hour of the time water is first added unless authorized otherwise by the Owner's Representative.
- B. Do not hand mix concrete for use in concrete structures.

### **3.07 PLACING PORTLAND CEMENT CONCRETE**

- A. Thoroughly wet subgrade when concrete is placed directly on soil. Remove all standing water prior to placing concrete.
- B. Do not place concrete until the subgrade and the forms have been approved.
- C. Convey concrete from mixer to final location as rapidly as possible by methods that prevent separation of the ingredients. Deposit concrete as nearly as possible in final position to avoid re-handling.
- D. Place and solidify concrete in forms without segregation by means of mechanical vibration or by other means as approved by the Owner's Representative. Continue vibration until the material is sufficiently consolidated and absent of all voids without causing segregation of material. The use of vibrators for extensive shifting of fresh concrete will not be permitted.
- E. Concrete in certain locations may be pumped into place upon prior approval by the Owner's Representative. When this procedure requires redesign of the mix, such redesign shall be submitted for approval in the same manner as herein specified for approval of design mixes.

### **3.08 PLACING ACCESSORY MATERIALS**

- A. Place water stops and other items required to be embedded in of Portland cement concrete structures at locations shown or required in accordance with Section 51-2.04 of the Caltrans Standard Specifications unless otherwise specifically noted or called for on the Plans.
- B. Curing Compounds:
1. Regular Portland Cement Concrete: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
  2. Color Conditioned Decorative Portland Cement Concrete: Apply LITHOCHROME color wax in accordance with the manufacturer's instructions.

**3.09 EXPANSION JOINTS**

- A. Construct expansion joints incorporating premolded joint fillers at twenty (20) foot intervals in all concrete curbs, gutters, sidewalks, median/island paving, valley gutters, driveway approaches and at the ends of all returns. At each expansion joint install one-half inch by twelve inch (1/2" x 12") smooth slip dowels in the positions shown or noted on the detail drawings.
- B. Orient slip dowels at right angles to the expansion joint and hold firmly in place during the construction process by means of appropriate chairs.

**3.10 WEAKENED PLANE JOINTS**

- A. Construct weakened plane joints in concrete curbs, gutters, sidewalks, median/island paving and valley gutters between expansion joints at ten (10) foot intervals throughout, or as otherwise indicated. Depth of joint score depth to be one-fourth (25%) the thickness of the concrete.
  - 1. Sawed Joints: Form weakened plane joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch wide joints into concrete when cutting action will not tear, abrade or otherwise damage surface and before concrete develops random contraction cracks.

**3.11 FINISHING CONCRETE**

- A. Finish curb and gutter in conformance with the applicable requirements of Section 73-2.03 of the Caltrans Standard Specifications as modified herein.
- B. Where monolithic curb, gutter and sidewalk is specified, separate concrete pours will not be allowed.
- C. Provide a medium broom finish to all horizontal surfaces unless otherwise shown.

**3.12 FORM REMOVAL**

- A. Remove forms without damage to the concrete. Remove all shores and braces below the ground surface, before backfilling.
- B. Do not backfill against concrete until the concrete has developed sufficient strength to prevent damage.
- C. Leave forms for cast-in-place walls in place at least 72 hours after pouring.
- D. Leave edge forms in place at least 24 hours after pouring.

**3.13 CONSTRUCTION**

- A. Form, place and finish concrete walkways, island paving, valley gutters and driveway approaches in conformance with the applicable requirements of Section 73-2.03 of the Caltrans Standard Specifications as modified herein.
- B. Form, place and finish structural concrete at junction structures and collars in conformance with the applicable requirements of Section 51 of the Caltrans Standard Specifications.
- C. Construct new concrete curb, curb and gutter and valley gutters against existing asphalt concrete by removing a minimum of 12-inches of the asphalt concrete to allow placement of curb or gutter forms. Patch pavement with a 6-inch deep lift of asphalt concrete after gutter form is removed.

**3.14 CONNECTING TO EXISTING CONCRETE IMPROVEMENTS**

- A. New curb, gutter, or sidewalk is to connect to existing improvements to remain by saw cutting to existing sound concrete at the nearest score line, expansion joint or control joint. Drill and insert ½-inch diameter by 12-inch long dowels at 24-inches on center into existing improvements. Install pre-molded expansion joint filler at the matching joint.
- B. A cold joint to the existing curb is not acceptable.

**3.15 FIELD QUALITY CONTROL**

- A. Finish subgrade for concrete improvements shall be subject to approval prior to placement of forms.
- B. No concrete shall be placed prior to approval of forms.
- C. Concrete improvements constructed shall not contain "bird baths" or pond water and shall be smooth and ridge free.
- D. Conform the finish grade at top of curb, flow line of gutter, and the finish cross section of concrete improvements to the design grades and cross sections.
- E. Variation of concrete improvements from design grade and cross section as shown or called for on the plans shall not exceed the tolerances ACI 117 and as follows:
  - 1. Elevation:  $\frac{1}{4}$  inch.
  - 2. Thickness: Plus  $\frac{3}{8}$  inch, minus  $\frac{1}{4}$  inch.
  - 3. Surface: Gap below 10-foot-long, unleveled straightedge not to exceed  $\frac{1}{4}$  inch.
  - 4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch.
  - 5. Vertical Alignment of Tie Bars and Dowels:  $\frac{1}{4}$  inch.
  - 6. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge:  $\frac{1}{2}$  inch.
  - 7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge:  
Length of dowel  $\frac{1}{4}$  inch per 12 inches.
  - 8. Joint Spacing: 3 inches, unless otherwise indicated.
  - 9. Contraction Joint Depth: Plus  $\frac{1}{4}$  inch, no minus.
  - 10. Joint Width: Plus  $\frac{1}{8}$  inch, no minus.
- F. Variation of concrete improvements from design grade and cross section as shown or called for on the plans shall not exceed the tolerances established in Sections 73-1.05 and/or 73-1.06 of the Caltrans Standard Specifications.

**3.16 RESTORATION OF EXISTING IMPROVEMENTS**

- A. Replace in kind all pavement or other improvements removed or damaged due to the installation of concrete improvements.
- B. Remove, landscaping or plantings damaged or disturbed due to the installation of concrete improvements. Replace in kind.

**END OF SECTION**

## **SECTION 31 10 00 - Site Clearing**

### **PART 1 - GENERAL**

#### **1.1 SECTION INCLUDES**

- A. Removal of existing trees and vegetation
- B. Clearing vegetation, debris, trash and other materials within limits indicated
- C. Grubbing of vegetation within limits indicated
- D. Stripping of topsoil within limits indicated
- E. Removing above-grade site improvements within limits indicated
- F. Disconnecting, capping or sealing, and abandoning site utilities in place
- G. Disconnecting, capping or sealing, and removing site utilities
- H. Disposing of objectionable material

#### **1.2 RELATED SECTIONS**

- A. Section 31 21 00 Utility Trenching and Backfill Section
- B. 32 12 16, Asphalt Paving

#### **1.3 RELATED DOCUMENTS**

- A. Geotechnical Report: "Geotechnical Recommendations Report, Pumpkin Fiesta Phase 1 Storm Drain", prepared by Haley and Aldrich, Inc., dated May 2022.
- B. ANSI A300: Industry Standards for Tree Care Practices
- C. Applicable Publications
  - A. "Trees and Building Sites," official publication of the International Society of Arboriculture.
  - B. "Arboriculture," the care of trees and shrubs by Dr. Richard Harris.

#### **1.4 DEFINITIONS**

- A. ANSI: American National Standards Institute
- B. CAL-OSHA: California Occupational Safety and Health Administration
- C. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of weeds, roots, and other deleterious materials.

## **1.5 SUBMITTALS**

- A. Follow submittal procedure outlined in Section 2.5 – General Conditions
- B. Photographs or videotape, sufficiently detailed, of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.

## **1.6 QUALITY ASSURANCE**

- A. Do not remove or prune trees without first securing a permit from the appropriate agency.
- B. Prune to the standards of the International Society of Arborists and to ANSI A300.

## **1.7 PROJECT CONDITIONS**

- A. Except for materials indicated to be stockpiled or to remain the City's property, cleared materials are the Contractor's property. Remove cleared materials from site and dispose of in lawful manner.
- B. Salvageable Improvements: Carefully remove items indicated to be salvaged and store where indicated on plans or where designated by the City's Representative. Avoid damaging materials designated for salvage.
- C. Unidentified Materials;
  - A. If unidentified materials are discovered, including hazardous materials that will require additional removal other than is required by the Contract Documents, immediately report the discovery to the City.
  - B. If necessary, the City will arrange for any testing or analysis of the discovered materials and will provide instructions regarding the removal and disposal of the unidentified materials.

## **PART 2 - PRODUCTS**

### **2.1 SOIL MATERIALS**

- A. Backfill excavations resulting from demolition operations with on-site or import materials conforming to engineered fill defined in Section 31 20 00, Earth Moving.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Protect and maintain benchmarks and survey control points during construction.
- B. Locate and clearly flag trees and vegetation to remain or to be relocated.
- C. Protect existing site improvements to remain during construction.

### **3.2 TREE REMOVAL**

- A. Remove trees designated for removal prior to the construction of new improvements in the vicinity:
  - A. When demolishing trees indicated to be removed within areas for new pavement or hardscape, remove tree, stump to a depth of two (2) feet below finish grade, and all roots located in the top twelve (12) inches of soil. Remove wood chips created from grinding process down to remaining stump then refill void and re-compact to 80% relative compaction. Use import soil as indicated in specifications for this purpose. Import soil and compaction in future paved areas shall be in accordance with Section 32 12 16, Asphalt Paving.
  - B. When demolishing trees indicated to be removed within new landscaped areas, removal shall be done in one of the following ways:
    - a. For trees located in accessible areas, remove tree and grind stump to four (4) inches below finish grade. Backfill the void and re-compact to 80% relative compaction. Use import soil as indicated in specifications for this purpose. Do not remove existing roots.
    - b. For trees located in inaccessible areas, cut stump flush with finish grade, and cover with 3 inches of bark mulch. Do not grind the stump and do not remove existing roots.
- B. Perform tree removal work in a safe and proper manner, adhering to CAL-OSHA tree work protection standards and ANSI A300 Standards.
- C. All trees to be demolished shall be removed in such a way as to not damage branches, trunks, or root systems of adjacent trees.

### **3.3 RESTORATION**

- A. Restore damaged improvements to their original condition, as acceptable to the City.
- B. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, as directed by the City.
  - A. Employ a qualified arborist, licensed in jurisdiction where the Project is located, to submit details of proposed repairs and to repair damage to trees and shrubs.
  - B. Replace trees that cannot be repaired and restored to full-growth status, as determined by the City.

### **3.4 UTILITIES**

- A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed or abandoned.
- B. Arrange to shut off indicated utilities with utility companies or verify that utilities have been shut off.

- C. Existing Utilities: Do not interrupt utilities serving facilities occupied by City or others unless authorized in writing by the City, and then only after arranging to provide temporary utility services according to requirements indicated.
- D. Coordinate utility interruptions with utility company affected.
- E. Do not proceed with utility interruptions without the permission of the City and utility company affected. Notify City and utility company affected two working days prior to utility interruptions.
- F. Excavate and remove underground utilities that are indicated to be removed.
- G. Fill abandoned piping with cement slurry.
- H. Securely close ends of abandoned piping with tight fitting plug or cement slurry minimum 6 inches thick.

### **3.5 CLEARING AND GRUBBING**

- A. Areas to be graded shall be cleared of existing vegetation, rubbish, existing structures, and debris.
- B. Remove obstructions, shrubs, grass, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions and grubbing roots.
- C. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
- D. Use only hand methods for grubbing within drip line of remaining trees.

### **3.6 SITE STRIPPING**

- A. Strippings and spoils shall be disposed at an off-site location, per geotechnical recommendations.
- B. Remove vegetation before stripping soil.
- C. Surface soils that contain organic matter should be stripped. In general, the depth of required stripping will be relatively shallow (i.e. less than 2 inches); deeper stripping and grubbing may be required to remove isolated concentrations of organic matter or roots. The actual stripping depth should be established by the geotechnical engineer at the time of construction.
- D. Remove trash, debris, weeds, roots, and other waste materials.
- E. Stockpile soil materials designated to remain on site at a location approved by the City at a location away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.
- F. Do not stockpile soil within drip line of remaining trees.

**3.7 SITE IMPROVEMENTS**

- A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.

**3.8 BACKFILL**

- A. Place and compact material in excavations and depressions remaining after site clearing in accordance with Section 31 20 00, Earth Moving.

**3.9 DISPOSAL**

- A. Remove surplus soil material, unsuitable soil, obstructions, demolished materials, and waste materials, including trash and debris, and legally dispose of them off the City's property.

**END OF SECTION**

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## **SECTION 31 21 00 – UTILITY TRENCHING AND BACKFILL**

### **PART 4 - GENERAL**

#### **4.1 SECTION INCLUDES**

- A. Excavation, bedding, and backfill for underground storm drain, sanitary sewer, and water piping, underground HVAC piping, electrical conduit, telephone conduit, gas piping, cable TV conduit, etc., and associated structures.
- B. Provide labor, material, equipment, and services necessary to complete the backfilling and compacting as necessary for this project. Section includes, but is not limited to:
  - A. Select Backfill Material
  - B. Aggregate Base
  - C. Detectable Tape
  - D. Trench Excavation
  - E. Pipe Bedding
  - F. Trench Backfill
  - G. Trench Surfacing

#### **4.2 RELATED SECTIONS**

- A. Section 33 30 00 – Sanitary Sewer System
- B. Section 33 41 00 – Storm Utility Drainage Piping
- C. Section 31 23 19 – Dewatering

#### **4.3 RELATED DOCUMENTS**

- A. ASTM
  - A. D1557, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.
  - B. D2321, Standard Practice for Underground Installation of Thermoplastic Pipe for Sewer and Other Gravity-Flow Applications.
- B. California Building Code, Title 24, Part 2 - Basic Building Regulations
- C. Caltrans Standard Specifications, 2018.
  - A. Section 19, Earthwork
  - B. Section 26, Aggregate Bases
- D. CAL/OSHA, Title 8
- E. "Geotechnical Recommendations Report, Pumpkin Fiesta Phase 1 Storm Drain", prepared by Haley and Aldrich, Inc., dated May 2022.

#### **4.4 DEFINITIONS**

- A. AC: Asphalt Concrete
- B. ASTM: American Society for Testing and Materials
- C. Base: The layer placed between the subgrade and surface pavement in a paving system.
- D. Bedding: Material from bottom of trench to bottom of pipe
- E. CDF: Controlled Density Fill
- F. DIP: Ductile Iron Pipe
- G. Engineered Fill:
  - A. Soil or soil-rock material approved by the City and transported to the site by the Contractor in order to raise grades or to backfill excavations.
  - B. Contractor shall provide sufficient tests, and a written statement that all materials brought onto the project site comply with specification requirements.
- H. Excavation: Consists of the removal of material encountered to subgrade elevations
- I. Initial Backfill: Material from bottom of pipe to 12 inches above top of pipe
- J. PCC: Portland Cement Concrete
- K. RCP: Reinforced Concrete Pipe
- L. Relative Compaction: In-place dry density of soil expressed as percentage of maximum dry density of same materials, as determined by laboratory test procedure ASTM D1557.
- M. Springline of Pipe: Imaginary line on surface of pipe at a vertical distance of  $\frac{1}{2}$  the outside diameter measured from the top or bottom of the pipe.
- N. Structural Backfill: Soil materials approved by the Geotechnical Engineer and used to fill excavations resulting from removal of existing below grade facilities, including trees.
- O. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below base.
- P. Subsequent Backfill: Material from 12 inches above top of pipe to subgrade of surface material or subgrade of surface facility or to finish grade.
- Q. Trench Excavation: Removal of material encountered above subgrade elevations and within horizontal trench dimensions.

- A. Authorized Trench Over-Excavation: Excavation below trench subgrade elevations or beyond indicated horizontal trench dimensions as shown on plans or authorized by the Geotechnical Engineer.
- B. Unauthorized Trench Over-Excavation: Excavation below trench subgrade elevations or beyond indicated horizontal trench dimensions without authorization by the Geotechnical Engineer. Unauthorized excavation shall be without additional compensation.
  
- R. Utility Structures:
  - A. Storm drainage manholes, catch basins, drop inlets, curb inlets, vaults, etc.
  - B. Sanitary sewer manholes, vaults, etc.
  - C. Water vaults, etc.

#### **4.5 SUBMITTALS**

- A. Follow submittal procedures outlined in Section 2.5 – General Conditions,
- B. Test Reports: Submit the following report for import material directly to the City from the Contractor's testing services:
  - A. Compaction test reports for aggregate base.
- C. Samples:
  - A. Do not import materials to Project without written approval of the Geotechnical Engineer and the City.
  - B. Provide materials from same source throughout work. Change of source requires approval of the Geotechnical Engineer and the City.

#### **4.6 QUALITY ASSURANCE**

- A. Conform all work and materials to the recommendations or requirements of the Geotechnical Report and meet the approval of the Geotechnical Engineer.
- B. Conform all work to the appropriate portion(s) of the Caltrans Standard Specifications, Section 19, Earthwork.
- C. Percentage of compaction specified shall be the minimum acceptable. The percentage represents the ratio of the dry density of the compacted material to the maximum dry density of the material as determined by the procedure set forth in ASTM D 1557.
- D. The Geotechnical Engineer will perform observations and tests required to enable them to form an opinion of the acceptability of the trench backfill. Correct the trench backfill that, in the opinion of the Geotechnical Engineer, does not meet the requirements of these Technical Specifications and the Geotechnical Report.
- E. Soil Testing:

- A. Contractor to engage a geotechnical testing agency, to include compaction testing and for quality control testing during fill operations.
- B. Test results will be submitted to the City.

#### **4.7 PROJECT CONDITIONS**

- A. Promptly notify the City of surface or subsurface conditions differing from those disclosed in the Geotechnical Report. First notify the City verbally to permit verification and extent of condition and then in writing. No claim for conditions differing from those anticipated in the Contract Documents and disclosed in the Geotechnical Report will be allowed unless Contractor has notified the City in writing of differing conditions prior to contractor starting work on affected items.
- B. Barricade open excavations and post with warning lights.
  - A. Operate warning lights and barricades as required.
  - B. Protect structures, utilities, sidewalks, pavements, and other facilities immediately adjacent to excavations, from damages caused by settlement, lateral movement, undermining, washout, and other hazards.
  - C. Protect open, trenches, and utility structure excavations with fences, covers and railings to maintain safe pedestrian and vehicular traffic passage.
- C. Stockpile on-site and imported backfill material temporarily in an orderly and safe manner.
- D. Environmental Requirements:
  - A. Protect existing storm drainage system from silt and debris resulting from construction activities. If contamination occurs, remove contamination at no cost to the District.
  - B. Protect existing streams, ditches and storm drain inlets during work on this project.
- E. Protection of Subgrade: Do not allow equipment to pump or rut subgrade, stripped areas, footing excavations, or other areas prepared for project.
- F. Transport all excess soils materials by legally approved methods to disposal areas.
  - A. Coordinate with the Engineer.
  - B. Any additional fill requirements shall be the responsibility of the Contractor.

#### **4.8 EXISTING UTILITIES**

- A. Locate existing underground utilities in the areas of work. For utilities that are to remain in place, provide adequate means of protection during excavation operations.
  - A. Locating of existing underground utilities shall include but not be limited to pot-holing prior to the start of construction.
- B. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult City and/or utility agency immediately for directions.
  - A. Cooperate with the City and public and private utility companies in keeping their respective services and facilities in operation.
  - B. Repair damaged utilities to the satisfaction of the agency with jurisdiction.
- C. Do not interrupt existing utilities serving facilities occupied and used by the City or others, except when permitted in writing by the City and then only after acceptable temporary utility services have been provided.

## **PART 5 - PRODUCTS**

### **5.1 GENERAL**

- A. Utility trenches may be backfilled with approved native soil above the utility bedding and shading materials compacted to the recommended compaction presented in the Geotechnical Report. If rocks larger than four inches in maximum size are encountered, these should be removed from the fill prior to placement in the utility trenches.
- B. Utility bedding and shading compaction requirement should be in conformance with the recommendations of pipe manufacturers.
- C. Import materials will be subject to approval of the Geotechnical Engineer.
- D. Pea gravel, rod mill, or other similar self-compacting material shall not be used as trench backfill.
- E. For approval of imported fill material, notify the City at least 3 days in advance of intention to import material.

### **5.2 PIPE BEDDING AND INITIAL BACKFILL**

- A. ASTM D2321, Class IA, IB or II.
  - A. Clean and free of clay, silt or organic matter.
- B. Permeable Material: In accordance with Section 68-2.02F of Caltrans Standard Specifications, Class 1, Type A or Class 2.
- C. Class 2 Aggregate Base: In accordance with Section 26 of Caltrans Standard Specifications,  $\frac{3}{4}$  inch maximum.
- D. Sand: In accordance with Section 19-3.02F of Caltrans Standard Specifications.

### **5.3 SELECT BACKFILL**

- A. Select backfill material shall be gravel, free of clay or organic matter and shall conform to the following gradation:

Sieve Size	Percentage Passing
1 inch	100
$\frac{3}{4}$ inch	90 – 100
No. 4	35 – 60
No. 200	2 - 9

- B. For gas pipe and fuel piping select backfill shall be clean, graded building sand conforming to the following gradation:

Sieve Size	Percentage Passing
No. 4	100
No. 200	0 -5

#### **5.4 WARNING TAPE**

- A. Polyethylene plastic and metallic core or metallic-faced, acid- and alkali-resistant, polyethylene plastic warning tape manufactured specifically for warning and identification of buried utility lines. Provide tape on rolls, 3 inch minimum width, color coded as specified below for the intended utility with warning and identification imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, "CAUTION, BURIED (intended service) LINE BELOW" or similar wording. Color and printing shall be permanent, unaffected by moisture or soil.
  - A. Warning Tape Color Codes
    - a. Red: Electric
    - b. Yellow: Gas, Oil; Dangerous Materials
    - c. Orange: Telephone and Other Communications
    - d. Blue: Water Systems
    - e. Green: Sewer Systems
    - f. White: Steam Systems
    - g. Gray: Compressed Air
  - B. Warning Tape for Metallic Piping: Acid and alkali-resistant polyethylene plastic tape conforming to the width, color, and printing requirements specified above. Minimum thickness of tape shall be 0.003 inch. Tape shall have a minimum strength of 1500 psi lengthwise, and 1250 psi crosswise, with a maximum 350 percent elongation.
  - C. Detectable Warning Tape for Non-Metallic Piping: Polyethylene plastic tape conforming to the width, color, and printing requirements specified above. Minimum thickness of the tape shall be 0.004 inch. Tape shall have a minimum strength of 1500 psi lengthwise and 1250 psi crosswise. Tape shall be manufactured with integral wires, foil backing, or other means of enabling detection by a metal detector when tape is buried up to 3 feet deep. Encase metallic element of the tape in a protective jacket or provide with other means of corrosion protection.

#### **5.5 DETECTION WIRE FOR NON-METALLIC PIPING**

- A. Detection wire shall be insulated single strand, solid copper with a minimum of 12 AWG.

#### **5.6 SUBSEQUENT BACKFILL**

- A. Conform to on-site or imported structural backfill in "Geotechnical Recommendations Report, Pumpkin Fiesta Phase 1 Storm Drain", prepared by Haley and Aldrich, Inc., dated May 2022.

#### **5.7 CONTROLLED DENSITY FILL (CDF) (IN TRENCHES)**

- A. Provide non-structural CDF, from bottom of trench to finish subgrade of subbase or base material, that can be excavated by hand and produce unconfined compressive 28-day strengths from 50-psi to a maximum of 150-psi. Provide aggregate no larger than 3/8 inch top size. The 3/8 inch aggregate shall not comprise more than 30% of the total aggregate content.
- B. Cement: Conform to the standards as set forth in ASTM C150, Type II Cement.

- C. Fly Ash: Conform to the standards as set forth in ASTM C618, for Class F pozzolan. Do not inhibit the entrainment of air with the fly ash.
- D. Air Entraining Agent: Conform to the standards as set forth in ASTM C260.
- E. Aggregates need not meet the standards as set forth in ASTM C33. Any aggregate, producing performances characteristics described herein will be accepted for consideration. The amount of material passing a #200 sieve shall not exceed 12% and no plastic fines shall be present.
- F. Provide CDF that is a mixture of cement, Class F pozzolan, aggregate, air entraining agent and water. CDF shall be batched by a ready mixed concrete plant and delivered to the job site by means of transit mixing trucks.
- G. The Contractor shall determine the actual mix proportions of the controlled density fill to meet job site conditions, minimum and maximum strengths, and unit weight. Entrained air content shall be a minimum of 4.0%. The actual entrained air content shall be established for each job with the materials and aggregates to be used to meet the placing and unit weight requirements. Entrained air content may be as high as 20% for fluidity requirements.
- H. Mix design shall meet the Geotechnical Engineer's approval.

#### **5.8 CONCRETE STRUCTURE BEDDING AND BACKFILL**

- A. Precast Structures: Same materials to the same heights as specified for pipe bedding and backfill, or other material approved by the Geotechnical Engineer.
- B. Poured-in-Place Structures:
  - A. Bedding: Bedding shall meet the approval of the Geotechnical Engineer. In general, bedding is not required, pour bases against undisturbed native earth in cut areas and against engineered fill compacted to 90% relative compaction in embankment areas.
  - B. Side Backfill: On-site or imported structural fill meeting the requirements given in Section 31 20 00, Earth Moving.

### **PART 6 - EXECUTION**

#### **6.1 GENERAL**

- A. Comply with the recommendations of the Geotechnical Engineer.
- B. Protect existing trees to remain. No grading is permitted under the drip line of protected trees.
- C. Excavations for appurtenant structures, such as, but not limited to, manholes, transition structures, junction structure, vaults, valve boxes, catch basins, thrust blocks, and boring pits, shall be deemed to be in the category of trench excavation.
- D. Unless otherwise indicated in the Plans, all excavation for pipelines shall be open cut.
- E. Prior to commencement of work, become thoroughly familiar with site conditions.

- F. In the event discrepancies are found, immediately notify the City in writing, indicating the nature and extent of differing conditions.
- G. Backfill excavations as promptly as work permits.
- H. Do not place engineered fill or backfill until rubbish and deleterious materials have been removed and areas have been approved by the City.
- I. Place acceptable soil material in layers to required subgrade elevations, for each area classification listed below.
- J. In excavations, use satisfactory excavated or borrow material.
- K. Under grassed areas, use satisfactory excavated or borrow material.

## **6.2 SITE PREPARATION**

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, which are to remain, from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Protect existing storm drainage system from silt and debris resulting from construction activities. If contamination occurs, remove contamination at no cost to the City.

## **6.3 EXISTING UTILITIES**

- A. Identify the location of existing utilities.
  - A. Prior to trenching, the Contractor shall excavate at locations specifically indicated on the Plans, if any, and where new lines cross other utilities of uncertain depth and determine the elevation of the utility in question to ensure that the new line will clear the potential obstruction.
  - B. The Contractor shall contact Underground Service Alert (USA) at 1-800-227-2600 for assistance in locating existing utilities.
  - C. If, after the excavation, a crossing utility does present an obstruction, then the line and grade of the new line will be adjusted as directed by the City to clear the utility.
- B. Protect all existing utilities to remain in operation.
- C. Movement of construction machinery and equipment over existing pipes and utilities during construction shall be at Contractor's risk.
- D. Excavation made with power-driven equipment is not permitted within 2 feet of any known utility or subsurface structure.

- A. Use hand or light equipment for excavating immediately adjacent to known utilities or for excavations exposing a utility or buried structure.
  - B. Start hand or light equipment excavation on each side of the indicated obstruction and continue until the obstruction is uncovered or until clearance for the new grade is assured.
  - C. Support uncovered lines or other existing work affected by excavation until approval for backfill is obtained.
  - D. Report damage of utility line or subsurface structures immediately to the City.
- E. Backfill trenches resulting from utility removal in lifts of 8 inches maximum.

#### **6.4 TRENCH EXCAVATION**

- A. General
  - A. Excavation shall include removal of all water and materials that interfere with construction. The Contractor shall remove any water which may be encountered in the trench by pumping or other methods during the pipe laying, bedding and backfill operations. Material shall be sufficiently dry to permit approved jointing.
  - B. Excavation shall include the construction and maintenance of bridges required for vehicular and pedestrian traffic, support for adjoining utilities.
  - C. The Contractor shall be responsible to safely direct vehicular and pedestrian traffic through or around his/her work area at all times.
  - D. The Contractor shall relocate, reconstruct, replace or repair, at his/her own expense, all improvements which are in the line of construction or which may be damaged, removed, disrupted or otherwise disturbed by the Contractor.
- B. Existing Paving and Concrete:
  - A. Existing pavement over trench shall be sawcut, removed, and hauled away from the job. Existing pavement shall be neatly sawcut along the limits of excavations.
  - B. Existing concrete over the trench shall be sawcut to a full depth in straight lines, at a minimum distance of 12 inches beyond the edge of the trench, either parallel to the curb or at right angles to the alignment of the sidewalk.
  - C. Boards or other suitable material shall be placed under equipment outrigging to prevent damage to paved surfaces.
- C. Trench Width:
  - A. The maximum allowable trench widths at the top of the all pipe materials outside diameter of barrel pipe plus 18 inches. shall be as follows:
    - a. The maximum trench width shall be inclusive of all shoring.
    - b. If the maximum trench width is exceeded, the State's representative may direct the Contractor to encase or cradle the pipe in concrete at no additional charge.
  - B. For pipes 3 inch diameter and larger, the free working space on each side of the pipe barrel shall not be less than 6 inches.
- D. Excavation Width at Springline of Pipe:

- A. Up to a nominal pipe diameter of 24 inches: Minimum of twice the outside pipe diameter, or as otherwise allowed or required by the Geotechnical Engineer.
- B. Nominal pipe diameter of 30 inches through 36 inches: Minimum of the outside pipe diameter plus 2 feet, or as otherwise allowed or required by the Geotechnical Engineer.
- C. Nominal pipe diameter of 42 inches through 60 inches: Minimum of the outside pipe diameter plus 3 feet, or as otherwise allowed or required by the Geotechnical Engineer.
- E. Open Trench:
  - A. The maximum length of open trench shall be 300 feet or the distance necessary to accommodate the amount of pipe installed in a single day, whichever is greater. No trench shall be left open at the end of the day.
  - B. Provisions for trench crossings and free access shall be made at all street crossings, driveways, water gate valves, and fire hydrants.
  - C. Excavate by hand or machine. For gravity systems begin excavation at the outlet end and proceed upstream. Excavate sides of the trench parallel and equal distant from the centerline of the pipe. Hand trim excavation. Remove loose matter.
  - D. Excavation Depth for Bedding: Minimum of 6 inches below bottom of pipe or as otherwise allowed or required by the Geotechnical Engineer, except that bedding is not required for nominal pipe diameters of 2 inches or less.
  - E. Over-Excavations: Backfill trenches that have been excavated below bedding design subgrade, with approved bedding material.
  - F. Where forming is required, excavate only as much material as necessary to permit placing and removal of forms.
  - G. Grade bottom of trench to provide uniform thickness of bedding material and to provide uniform bearing and support for pipe along entire length. Remove stones to avoid point bearing.
- F. Excavated Material:
  - A. All excavated material not required for backfill shall be immediately removed and properly disposed of in a legal manner by the Contractor.
  - B. Material excavated in streets and roadways shall be laid alongside the trench no closer than 2 feet from the trench edge and kept trimmed to minimize inconvenience to public traffic.
  - C. Provisions shall be made whereby all storm and wastewater can flow uninterrupted in gutters or drainage channels.
- G. Be solely responsible for dewatering trenches and excavations and subsequent control of ground and surface water. Provide and maintain such pumps or other equipment as may be necessary to control ground water and seepage to the satisfaction of the Geotechnical Engineer and the City until backfilling is completed.
- H. Dewater during backfilling operation so that groundwater is maintained a least one foot below level of compaction effort.
- I. Obtain the Geotechnical Engineer's approval for proposed control of water and dewatering methods.
- J. Reroute surface water runoff away from open trenches and excavations. Do not allow water to accumulate in trenches and excavations.
- K. Maintain dewatering system in place until dewatering is no longer required.

## **6.5 BRACING AND SHORING**

- A. Conform to California and Federal OSHA requirements.
- B. Place and maintain such bracing and shoring as may be required to support the sides of the excavations for the proper protection of workmen; to facilitate the work; to prevent damage to the pipes and appurtenances being constructed; and to prevent damage to adjacent structures or facilities. Remove all bracing and shoring upon completion of the work.
- C. Be solely responsible for all bracing and shoring and, if requested by the City, submit details and calculations to the City. The City may forward the submittal to the Geotechnical Engineer, the Consulting Engineer and/or the California Division of Industrial Safety for their review. The Contractor's submittal shall include the basic design, assumed soils conditions and estimation of forces to be resisted, together with plans and specifications of the materials and methods to be used, and shall be prepared by a civil engineer or structural engineer registered in California. No excavations in trench section or around structures shall precede a response to the submittal by the City.
- D. Be solely responsible for installing and extracting the sheathing in a manner which will not disturb the line, grade, or backfill compaction or operation of the utility being installed or adjacent utilities and facilities.

## **6.6 PIPE BEDDING**

- A. Obtain approval of bedding material from the Geotechnical Engineer.
- B. Carefully place and compact bedding material to the elevation of the bottom of the pipe in layers not exceeding 8 inches in loose thickness. Compact bedding material at optimum water content to 92% relative compaction in pavement areas and 90% relative compaction in all other areas, unless specified otherwise on the Plans or by the Geotechnical Engineer. Compact by pneumatic tampers or other mechanical means approved by the Geotechnical Engineer. Jetting or ponding of bedding material will not be permitted.
- C. Stabilization of Trench Bottom: When the trench bottom is unstable due to wet or spongy foundation, trench bottom shall be stabilized with gravel or crushed rock. The State's inspector will determine the suitability of the trench bottom and the amount of gravel or crushed rock needed to stabilize a soft foundation. Soft material shall be removed and replaced with gravel or crushed rock as necessary.
- D. Placement of Bedding Material: The trench bottom shall be cleaned to remove all loose native material prior to placing select backfill material. Sufficient select backfill material shall be placed in trench and tamped to bring trench bottom up to grade of the bottom of pipe. The relative compaction of tamped material shall be not less than 90 percent. It is the intention of these requirements to provide uniform bearing under the full length of pipe to a minimum width of 60 percent of the external diameter.

## **6.7 BACKFILLING**

- A. Initial Backfill:
  - A. Obtain approval of backfill material from Geotechnical Engineer.
  - B. Bring initial backfill up simultaneously on both sides of the pipe, so as to prevent any displacement of the pipe from its true alignment. Carefully place and compact initial backfill

material to an elevation of 12 inches above the top of the pipe in layers not exceeding 8 inches in loose thickness. Compact bedding material at optimum water content to 92% relative compaction in pavement areas and 90% relative compaction in all other areas, unless specified otherwise on the Plans or by the Geotechnical Engineer. Compact by pneumatic tampers or other mechanical means approved by the Geotechnical Engineer. Jetting or ponding of initial backfill material will not be permitted.

- B. Pipe Detection: In trenches containing pressurized plastic pipes, tracer wire shall be placed directly above the pipe and shall be connected to all valves, existing exposed tracer wires, and other appurtenances as appropriate.
- C. Subsequent Backfill:
  - A. Above the level of initial backfill, the trench shall be backfilled with non-expansive native material from trench excavation or with imported select backfill material (Contractor's option). Subsequent backfill shall be free of vegetable matter, stones or lumps exceeding 3 inches in greatest dimension, and other unsatisfactory material.
  - B. Bring subsequent backfill to subgrade or finish grade as indicated. Carefully place and compact subsequent backfill material to the proper elevation in layers not exceeding 8 inches in loose thickness. Compact bedding material at optimum water content to 90% relative compaction, except that the upper 36 inches in areas subject to vehicular traffic shall be compacted to at least 95% relative compaction, unless specified otherwise on the Plans or by the Geotechnical Engineer. Compact by pneumatic tampers or other mechanical means approved by the Geotechnical Engineer. Jetting or ponding of subsequent backfill material will not be permitted.
  - C. Utility trenches should be completely sealed with concrete, clayey soil, sand-cement slurry, or controlled density fill where the utility enters the building under the perimeter foundation.
- D. Do not use compaction equipment or methods that produce horizontal or vertical earth pressures that may cause excessive pipe displacement or damage the pipe. Jetting of trench backfill is not permitted.
- E. Utility backfill shall be inspected and tested by the Geotechnical Engineer during placement. Cooperate with the Geotechnical Engineer and provide working space for such tests in operations. Backfill not compacted in accordance with these specifications shall be re-compacted or removed as necessary and replaced to meet the specified requirements, to the satisfaction of the Geotechnical Engineer and the City prior to proceeding with the Project.
- F. Compaction testing shall be in accordance with California Test Method ASTM D1556 or D1557.

## **6.8 CLEANUP**

- A. Upon completion of utility earthwork all lines, manholes catch basins, inlets, water meter boxes and other structures shall be thoroughly cleaned of dirt, rubbish, debris and obstructions of any kind to the satisfaction of the City.

**END OF SECTION**

## **SECTION 31 23 19 – DEWATERING**

### **PART 1 - GENERAL**

#### **1.01 SCOPE OF WORK**

- A. The Contractor shall provide all labor, materials, and equipment necessary to dewater trench and structure excavations, in accordance with the requirements of the Contract Documents. The Contractor shall secure all necessary permits to complete the requirements of this section. The Contractor shall refer to Section 31 21 00, Utility Trenching and Backfill for other dewatering requirements.

#### **1.02 RELATED SECTIONS**

- A. Section 31 20 00, Utility Trenching and Backfill

#### **1.03 CONTRACTOR SUBMITTALS**

- A. Follow submittal procedure outlined in Section 2.5 - General Conditions,
- B. Prior to commencement of excavation, the Contractor shall submit a detailed plan and operation schedule for dewatering of excavations. The Contractor may be required to demonstrate the system proposed and to verify that adequate equipment, personnel and materials are provided to dewater the excavations at all locations and times. The Contractor's dewatering plan is subject to review by the Engineer.

#### **1.04 QUALITY CONTROL**

- A. It shall be the sole responsibility of the Contractor to control the rate and effect of the dewatering in such a manner as to avoid all objectionable settlement and subsidence.
- B. All dewatering operations shall be adequate to assure the integrity of the finished project and shall be the responsibility of the Contractor.
- C. Where critical structures or facilities exist immediately adjacent to areas of proposed dewatering, reference points shall be established and observed at frequent intervals (at least weekly) to detect any settlement which may develop. The responsibility for conducting the dewatering operation in a manner which will protect adjacent structures and facilities rests solely on the Contractor. The cost of repairing any damage to adjacent structures and restoration of facilities shall be the responsibility of the Contractor.
- D. It is the Contractor's responsibility to obtain all necessary local, state, and federal permits, permissions, and approvals for the selected discharge location.

### **PART 2 - PRODUCTS**

#### **2.01 EQUIPMENT**

- A. Dewatering, where required, may include the use of well points, sump pumps, temporary pipelines for water disposal, rock or gravel placement, and other means. Standby pump equipment shall be maintained on the jobsite.

### **PART 3 - EXECUTION**

### **3.01 GENERAL REQUIREMENTS**

- A. The Contractor shall provide all equipment necessary for dewatering. It shall have on hand, at all times, sufficient pumping equipment and machinery in good working condition and shall have available, at all time, competent workmen for the operation of the pumping equipment. Adequate standby equipment shall be kept available at all times to insure efficient dewatering and maintenance of dewatering operation during power failure.
- B. Place dewatering system into operation to lower water to specified levels before excavating below ground-water level. Dewatering shall be continuous until such times as water can be allowed to rise in accordance with the provisions of this section or other requirements.
- C. At all times, site grading shall promote drainage. Surface runoff shall be diverted from excavations. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and be pumped or drained by gravity from the excavation to maintain a bottom free from standing water.
- D. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.
- E. If foundation soils are disturbed or loosened by the upward seepage of water or an uncontrolled flow of water, the affected areas shall be excavated and replaced with drain rock at no cost to PG&E. Drain rock layer shall be approved Class II Permeable Material.
- F. The Contractor shall maintain the water level below the bottom of excavation in all work areas where groundwater occurs during excavation, construction, backfilling, and up to acceptance.
- G. Flotation shall be prevented by the Contractor by maintaining a positive and continuous removal of water. The Contractor shall be fully responsible and liable for all damages which may result from failure to adequately keep excavations dewatered.
- H. If well points or wells are used, they shall be adequately spaced to provide the necessary dewatering and shall be sand packed and/or other means shall be used to prevent pumping of fine sands or silts from the subsurface. A continual check by the Contractor shall be maintained to ensure that the subsurface soil is not being removed by the dewatering operation. If well points or wells are used, a permit from the County of Napa shall be obtained by the Contractor. Wells, well points and piezometers shall be installed and removed or abandoned in accordance with County of Napa requirements.
- I. Dewatering wells, well points, sump pumps, or other means shall be used to remove water and continuously maintain groundwater at a level at least two feet below the bottom of excavations before the excavation work begins at each location. Water shall be removed and excluded until backfilling is complete and all field soils testing have been completed.
- J. Dewatering Design Criteria: The Contractor shall design its dewatering systems to meet the following minimum requirements:
  - 1. Provide stable excavation walls and bottom in accordance with California and Federal OSHA requirements.
  - 2. Provide reasonably dry base of excavation.

3. Prevent boiling of the excavation bottom.
  4. Filter native soil and prevent loss of soil through piping action.
  5. Preserve the undisturbed bearing capacity of subgrade soils at the bottom of the excavation.
  6. Draw down the groundwater level below and beyond the excavation bottom and sidewalls where shoring is not designed to resist hydrostatic pressures.
- K. The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted backfill and prevent floatation or movement of structures, pipelines and sewers.
- L. Discharge of removed groundwater shall be in accordance with the Contractor's SWPPP and State and Federal regulations. Water removed from excavations shall be discharged to a sedimentation tank(s). Proposed locations for temporary staging of tank(s), if necessary, shall be included in the Contractor submitted dewatering plan that shall be approved by the City. Groundwater shall be tested for contaminants prior to discharge. All discharges shall be approved by the local and State jurisdiction.
- M. It is the Contractor's responsibility to obtain all necessary local, state, and federal permits, permissions, and approvals for the selected discharge location.
- N. Discharge of groundwater removed by the dewatering system may be allowed to the Sanitation District wastewater collection system. Groundwater must meet specific quality and quantity requirements before discharge to the sewer is allowed. The Contractor shall coordinate with the Sanitation District and obtain approval for discharge to the sewer. If the Contractor elects to discharge elsewhere, it is the Contractor's responsibility to obtain all necessary local, state, and federal permits, permissions, and approvals for the selected discharge location.
- O. Dewatering of trenches and other excavation shall be considered as incidental to the construction of the Work and all costs thereof shall be included in the various contract prices of the Bid Forms, unless a separate bid item has been established for dewatering.

**END OF SECTION**

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**SECTION 32 11 00 – PAVEMENT BASE COURSE**

**PART 1 - GENERAL**

**PART 2 - PRODUCTS**

**2.1 AGGREGATE BASE**

- A. Material: Class 2 in accordance with Caltrans Standard Specification Section 26, Aggregate Bases.

**2.2 CEMENT TREATED BASE**

- A. Material: Class A or B maximum in accordance with Caltrans Standard Specification Section 27, Cement Treated Bases.

**2.3 LIME STABILIZED SOILS**

- A. Material: In accordance with Caltrans Standard Specification Section 24-2, Lime Stabilized Soil.

**PART 3 - EXECUTION**

**3.1 GENERAL**

- A. Placement and compaction of material by flooding, ponding, or jetting will not be permitted.

**3.2 WET WEATHER CONDITIONS**

- A. Do not place or compact subgrade if above optimum moisture content.
- B. If the Geotechnical Engineer allows work to continue during wet weather conditions, conform to supplemental recommendations provided by the Geotechnical Engineer.

**3.3 AGGREGATE BASE**

- A. Watering, Spreading and Compacting: In accordance with Caltrans Standard Specification Section 26-1.03D, Spreading and 26-1.03E, Compacting.
- B. Aggregate base should be compacted and moisture conditioned per the requirements listed in the Geotechnical Report.

**3.4 CEMENT TREATED BASE**

- A. Proportioning and Mixing Plant-Mixed: In accordance with Caltrans Standard Specification Section 27-1.03D.

### **3.5 LIME STABILIZATION**

- A. Lime stabilization shall conform to Caltrans Standard Specification Section 24, Stabilized Soils, and the following:
  - A. Add lime in the amount specified by the Geotechnical Engineer.
  - B. Lime treat subgrade soils from back of curb to back of curb to a depth specified by the Geotechnical Engineer.
  - C. Mix in two mixing periods, both with the tines lowered to the same depth. Both mixing periods shall be monitored and verified by the Geotechnical Engineer. The second mixing shall occur at about 24 hours after the initial mixing.
  - D. Compact and grade the lime mixed subgrade immediately after the second mixing.
  - E. Compact the lime treated subgrade to 93 percent as determined by ASTM D1557.
  - F. After application of the curing seal, do not allow traffic on the lime treated material for a period of 7 days in lieu of the 3 days specified in Caltrans Standard Specifications, Section 24.
  - G. Proof-roll the stabilized subgrade after compacting to confirm that a non-yielding surface has been achieved. Yielding areas, if any, shall be mitigated. Mitigation could consist of over-excavation, utilization of stabilization fabric, or chemical treatment. Each case shall be addressed individually in the field by the Geotechnical Engineer.

### **3.6 DISPOSAL**

- A. Lawfully dispose of all unsuitable and excess or surplus material off-site at no cost to the City.

**END OF SECTION**

## **SECTION 32 12 16 - ASPHALT PAVING**

### **PART 1 - GENERAL**

#### **1.1 SECTION INCLUDES**

- A. Hot Mix Asphalt
- B. Tack coat
- C. Hot Mix Asphalt paving
- D. Hot Mix Asphalt overlay
- E. Speed bumps
- F. Asphalt curbs
- G. Pavement grinding
- H. Adjusting manholes, valves, monument covers and other structures to grade

#### **1.2 RELATED SECTIONS**

- A. Section 31 21 00 Utility Trenching and Backfill
- B. Section 32 11 00, Pavement Base Course

#### **1.3 RELATED DOCUMENTS**

- A. Geotechnical Report: "Geotechnical Recommendations Report, Pumpkin Fiesta Phase 1 Storm Drain", prepared by Haley and Aldrich, Inc., dated May 2022.
- B. ASTM
  - A. D979: Standard Practice for Sampling Bituminous Paving Mixtures
  - B. D1188: Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples
  - C. D2041: Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
  - D. D2726: Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
  - E. D2950: Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods
  - F. D3549: Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimens.
- C. Caltrans Standard Specifications, 2015
  - A. Section 20: Landscape
  - B. Section 39: Asphalt Concrete
  - C. Section 92: Asphalt Binder

D. Section 94: Asphaltic Emulsions

**1.4 DEFINITIONS**

- A. ASTM: American Society for Testing Materials.
- B. Caltrans: State of California, Department of Transportation

**1.5 QUALITY ASSURANCE**

- A. Testing Agency: City will engage a qualified independent testing agency to perform field inspections and tests and to prepare test reports.
  - A. Testing agency will conduct and interpret tests and state in each report whether tested work complies with or deviates from specified requirements.
- B. Additional testing if required, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.
- C. Thickness of hot mix asphalt: In-place compacted thickness of asphalt courses will be determined according to ASTM D3549.
- D. Surface Smoothness: Finished surface of each asphalt course will be tested for compliance with smoothness tolerances.
- E. In-Place Density: Samples of uncompacted paving mixtures and compacted pavement will be secured by testing agency according to ASTM D979.
  - A. Reference maximum theoretical density will be determined by averaging results from 4 samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D2041, and compacted according to job-mix specifications.
  - B. In-place density of compacted pavement may be determined by testing core samples according to ASTM D1188 or ASTM D2726.
    - a. One core sample may be taken for every 1000 square yard or less of installed pavement, but in no case will fewer than 3 cores be taken.
    - b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D2950 and correlated with ASTM D1188 or ASTM D2726.

**1.6 SUBMITTALS**

- A. Follow submittal procedure outlined in Section 2.5 - General Conditions.
- B. Job-Mix Designs: Certificates signed by manufacturers certifying that each hot mix asphalt mix complies with requirements.
- C. Material Certificates: Certificates signed by manufacturers certifying that each material complies with requirements.

## **1.7 PROJECT CONDITIONS**

- A. Environmental Limitations:
  - A. Tack Coat: Minimum surface temperature of 60 F at application.
  - B. Asphalt Base Course: Minimum surface temperature of 40 F and rising at application.
  - C. Asphalt Surface Course: Minimum surface temperature of 60 F at application.

## **PART 2 - PRODUCTS**

### **2.1 HOT MIX ASPHALT**

- A. Type A in accordance with Caltrans Standard Specifications Section 39-2, Hot Mix Asphalt.
- B. Hot Mix Asphalt Materials:
  - A. Asphalt Binder: Grade PG 64-10 in accordance with Caltrans Standard Specification Section 92, Asphalt Binders.
  - B. Tack Coat: Grade SS1 in accordance with Caltrans Standard Specification Section 94, Asphaltic Emulsions.
- C. Aggregates: Gradation for virgin aggregate and recycled asphalt pavement (RAP) shall be in accordance with Caltrans Standard Specification Section 39-2.02, Type A Hot Mix Asphalt.

AC Lift Thickness	Max Aggregate
$\frac{3}{4}" - 1\frac{1}{2}"$	$\frac{1}{2}"$
$2" - 2\frac{1}{2}"$	$\frac{1}{2}"$
- D. Soil Sterilant: In accordance with Caltrans Standard Specifications Section 20-5.03, Inert Ground Covers and Mulches.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.
- B. Proof-roll subbase using heavy, pneumatic-tired rollers to locate areas that are unstable or that require further compaction.
- C. If necessary, perform subgrade preparation or remediation in accordance with Section 31 20 00, Earth Moving.
- D. Notify City in writing of any unsatisfactory conditions. Do not begin paving until these conditions have been satisfactorily corrected.

### **3.2 PAVEMENT GRINDING**

- A. Clean existing paving surface of loose or deleterious material immediately before pavement grinding.

- B. Grind conforms as indicated.

### **3.3 SOIL STERILANT**

- A. Furnish and apply to areas per manufacturer's specifications.

### **3.4 SURFACE PREPARATION FOR AGGREGATE BASE MATERIALS**

- A. General: Immediately before placing asphalt materials remove loose and deleterious material from substrate surfaces and ensure that prepared subgrade is ready to receive paving in accordance with Caltrans Standard Specification Section 39-2.01C(3)(b) and in accordance with Section 32 11 00, Pavement Base Course.
- B. Tack Coat: Apply uniformly and at specified rates between HMA layers, to vertical surfaces of curbs, gutters and construction joints, and to existing pavement, including planed surfaces, in accordance with Caltrans Standard Specification Section 39-2.01C(3)(f).
  - A. Allow tack coat to cure undisturbed before paving.
  - B. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

### **3.5 SURFACE PREPARATION FOR PAVEMENT AT HOT MIX ASPHALT OVERLAYS**

- A. Pavement Irregularities: Level with hot mix asphalt, Type A, ½ inch max aggregate.
- B. Pavement Cracks:
  - A. Less than ¼ inch wide: Clean of all dirt by compressed air jet, spray and seal with RS-1 asphaltic emulsion.
  - B. Wider than ¼ inch: Clean of all dirt by compressed air jet, spray and seal with RS-1 asphaltic emulsion and skin patch.
- C. Clean surface of all material, such as leaves, dirt, sand, gravel, water and vegetation prior to applying binder of paving asphalt to existing surface.

### **3.6 HOT MIX ASPHALT SPREADING AND COMPACTING EQUIPMENT**

- A. Provide spreading and compacting equipment in accordance with Caltrans Standard Specification Section 39-2.01C(2).

### **3.7 HOT MIX ASPHALT PLACEMENT**

- A. Place, spread and compact hot mix asphalt to required grade, cross section, and thickness in accordance with Caltrans Standard Specification Sections 39-2.01C(2), 39-2.01C(3), and 39-2.01C(8).
- B. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

### **3.8 JOINTS**

- A. Construct joints to ensure continuous bond between adjoining paving sections in accordance with Caltrans Standard Specification Sections 39-2.01C(4)
  - A. Construct joints free of depressions with same texture and smoothness as other sections of asphalt course.
  - B. Clean contact surfaces and apply tack coat.
  - C. Offset longitudinal joints in successive courses a minimum of 6 inches.
  - D. Offset transverse joints in successive courses a minimum of 24 inches.
  - E. Compact joints as soon as hot mix asphalt will bear roller weight without excessive displacement.

### **3.9 COMPACTION**

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact in accordance with Caltrans Standard Specification Sections 39-2.01C(2).
- B. Compaction Requirements: Average Density to be 92 percent of reference maximum theoretical density according to ASTM D2041, but not less than 90 percent nor greater than 96 percent.
- C. Finish Rolling: Finish roll paved surfaces to remove roller marks while asphalt is still warm.
- D. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while still hot, with back of rake or smooth iron. Compact thoroughly using tamper or other satisfactory method.
- E. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh asphalt. Compact by rolling to specified density and surface smoothness.
- F. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

### **3.10 HOT MIX ASPHALT CURBS AND DIKES**

- A. Construction: Place over compacted surfaces in accordance with Caltrans Standard Specification Section 39-2.01C(9). Apply a light tack coat prior to construction, unless pavement surface is still tacky and free of dust.
- B. Shape: Place hot mix asphalt to curb cross section indicated.

### **3.11 SPEED BUMPS**

- A. Construct speed bumps over compacted pavement surfaces in accordance with Caltrans Standard Specification Section 39-2. Apply a light tack coat prior to construction, unless pavement surface is still tacky and free of dust.

- B. Place asphalt concrete by hand using a template/screed designed to result in speed bump cross-section indicated after compaction.
- C. Compact speed bumps with 8 ton static roller.

**3.12 ADJUSTING MANHOLES, VALVES, MONUMENT COVERS AND OTHER STRUCTURES TO GRADE**

- A. Remove pavement, using vertical cuts, as needed to remove frame and provide for concrete collar. Do not damage adjacent pavement.
  - A. Circular Covers: Cut circle with radius 6 inches larger than cover and concentric with cover.
  - B. Rectangular Covers: Cut rectangle 6 inches larger than cover on all sides.
- B. Install grade rings or blocking as needed to raise cover to finish grade.
- C. Pour concrete collar:
  - A. Bottom of Collar: Top of existing collar or 6 inches below top of proposed collar, whichever is at a higher elevation.
  - B. Top of Collar: Bottom of existing asphalt pavement.
  - C. Apply tack coat to all exposed surfaces.
  - D. Fill excavation with hot mix asphalt and, while still hot, compact flush with adjacent surface.

**3.13 INSTALLATION TOLERANCES**

- A. Hot Mix Asphalt Pavement:
  - A. Course thickness and surface smoothness shall be in accordance with Caltrans Standard Specification Section 39-2.01A(4)(i)(iii)
  - B. Total Thickness: Not less than indicated.
- B. Trench Patch:
  - A. Compacted surface: Within 0.01 foot of adjacent pavement.
  - B. Do not create ponding.
- C. Adjust Covers:
  - A. Compacted surface: Up to 0.01 foot higher, and no lower, than adjacent pavement.
  - B. Do not create ponding.

**END OF SECTION**

## **SECTION 32 13 75 – CONCRETE CURBS AND GUTTERS**

### **PART 4 - GENERAL**

**4.1** section includes

- A. Portland cement concrete curbs and gutters, sidewalk, curb ramps and driveways.

**4.2 RELATED SECTIONS**

- A. Section 31 21 00 Utility Trenching and Backfill
- B. Section 32 11 00, Pavement Base Course

**4.3 RELATED DOCUMENTS**

- A. "Geotechnical Recommendations Report, Pumpkin Fiesta Phase 1 Storm Drain", prepared by Haley and Aldrich, Inc., dated May 2022..
- B. American society for Testing and Materials (ASTM)
  - A. A1064 – Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
  - B. D1751 – Standard Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
- C. Caltrans Standard Specifications, 2018
  - A. Section 51: Concrete Structures
  - B. Section 72: Slope Protection
  - C. Section 73: Concrete Curbs and Sidewalks
  - D. Section 90: Concrete

**4.4 DEFINITIONS**

- A. ASTM: American Society for Testing Materials
- B. ACI: American Concrete Institute

**4.5 SUBMITTALS**

- A. Submittal procedures shall be as outlined in Section 2.5.
- B. Concrete Mix Design: Have all concrete mixes designed by a testing laboratory and approved by the City. Conform all mixes to the applicable building code requirement, regardless of other minimum requirements listed herein or on the drawings. Submit mix designs for review before use. Show proportions and specific gravities of cement, fine and coarse aggregate, and water and gradation of combined aggregates.

#### **4.6 QUALITY ASSURANCE**

- A. Concrete shall be subject to quality assurance in accordance with Section 90 of the Caltrans Standard Specifications.
- B. Certifications:
  - A. Provide City at the time of delivery with certificates of compliance signed by both Contractor and Supplier containing the following statements:
    - a. Materials contained comply with the requirements of the Contract Documents in all respects.
    - b. Proportions and mixing comply with the design mix approved by the Consulting Engineer. Design mix shall have been field tested in accordance with the herein requirements of the Caltrans Standard Specifications and produces the required compressive strength under like conditions.
  - B. Settlement of type and amount of any admixtures.
  - C. Provide City, at time of delivery, with certified delivery ticket stating volume of concrete delivered and time of mixing, or time of load-out in case of transit mixers.
- C. Conform to the applicable provisions of Sections 51, 73 and 90 of the Caltrans Standard Specification and these Technical Specifications.
  - A. Conform construction of portland cement concrete surface improvements (including curbs, gutters, medians, valley gutters, walks) to the requirements of Section 73 of the Caltrans Standard Specifications unless otherwise required in these Technical Specifications or shown on the Plans.
  - B. Construct "V" ditches in accordance with Section 72-5 of the Caltrans Standard Specifications; except that finishing shall be in accordance with Standard Specification Section 73, or as otherwise required in these Technical Specifications or shown on the Plans.

#### **4.7 DESIGNATION**

- A. General: Whenever the 28 day compressive strength is designated herein or on the Plans is 3,600 psi or greater, the concrete shall considered to be designated by compressive strength. The 28 day compressive strength shown herein or on the plans which are less than 3,600 psi are shown for design information only and are not considered a requirement for acceptance of the concrete. Whenever the concrete is designated by class or as minor concrete herein or on the Plans, the concrete shall contain the cement per cubic yard shown in Section 90-2 of the Caltrans Standard Specifications.
- B. Unless specified otherwise herein or on the Plans, portland cement concrete for curbs, gutters, sidewalks and their appurtenances such as island paving, curb ramps and driveways, shall be minor concrete as specified in Section 90-2 of the Caltrans Standard Specifications.

### **PART 5 - PRODUCTS**

#### **5.1 GENERAL**

- A. Comply with requirements of Section 03 30 10, Portland Cement Concrete.

## **5.2 PORTLAND CEMENT CONCRETE**

- A. Unless specified otherwise herein or on the Plans, portland cement concrete for items in this section shall be Minor Concrete as specified in Section 90-2 of the Caltrans Standard Specifications.
- B. Design mix to produce normal-weight concrete consisting of portland cement, aggregate, water-reducing or high-range water-reducing admixture (superplasticizer), air-entraining admixture, and water to produce the following properties:
  - A. Compressive Strength:
    - a. Typical: 3000 psi, minimum at 28 days, unless otherwise indicated.
    - b. Curbs & Gutters: 3500 psi, minimum at 28 days.
  - B. Slump Limit: 8 inches minimum for concrete containing high-range water-reducing admixture (superplasticizer, limited to flatwork only); 4 inches for other concrete.
  - C. Water/Cement Ratio: 0.5

## **5.3 CURBS AND GUTTERS FORMS**

- A. Use flexible spring-steel forms or laminated boards to form radius bends. Tolerance: Not to deviate more than 1/4 inch in 10 feet in grade and alignment.

## **5.4 EXPANSION JOINT MATERIAL**

- A. Material for expansion joints in portland cement concrete improvements shall be premolded expansion joint fillers conforming to the requirements of ASTM Designation D1751. Expansion joint material shall be shaped to fit the cross section of the concrete prior to being placed. Suppliers certificates showing conformance with this specification shall be delivered with each shipment of materials delivered to the job site.
- B. Unless noted otherwise herein or on the Plans expansion joint thickness shall be as follows:
  - A. Curbs, Curb Ramps, Island Paving, Driveways and Gutter Depressions: ¼ inch

## **5.5 REINFORCEMENT AND DOWELS**

- A. Comply with requirements of Section 03 30 10, Portland Cement Concrete.

## **PART 6 - EXECUTION**

### **6.1 GENERAL**

- A. Comply with requirements of Section 03 30 10, Portland Cement Concrete.
- B. Form, place and finish concrete curbs, gutters, walkways, island paving, valley gutters and driveway approaches in conformance with the applicable requirements of Section 73 of the Caltrans Standard Specifications as modified herein.
- C. Construct new concrete curb, curb and gutter and valley gutters against existing asphalt concrete by removing a minimum of 12 inches of the asphalt concrete to

allow placement of curb or gutter forms. Patch pavement with a 6 inch deep lift of asphalt concrete after gutter form is removed.

**6.2 SUBGRADE**

- A. Conform to Section 73-1.03B of Caltrans Standard Specifications.

**6.3 SOIL STERILANT**

- A. Furnish and apply an oxidation granular preemergent soil sterilant to prepared subgrade or after installation of rock or aggregate base uniformly at the rate recommended by the manufacturer.

**6.4 PLACING CONCRETE FORMS**

- A. Form concrete improvements with a smooth and true upper edge. Side of the form with a smooth finish shall be placed next to concrete. Construct forms rigid enough to withstand the pressure of the fresh concrete to be placed without any distortion.
- B. Thoroughly clean all forms prior to placement and coat forms with an approved form oil in sufficient quantity to prevent adherence of concrete prior to placing concrete.
- C. Carefully set forms to the alignment and grade established and conform to the required dimensions. Rigidly hold forms in place by stakes set at satisfactory intervals. Provide sufficient clamps, spreaders and braces to insure the rigidity of the forms.
- D. Provide forms for back and face of curbs, lip of gutters and edge of walks, valley gutters or other surface slabs that are equal to the full depth of the concrete as shown, noted or called for on the Plans. On curves and curb returns provide composite forms made from benders or thin planks of sufficient ply to ensure rigidity of the form.

**6.5 PLACING STEEL REINFORCEMENT**

- A. 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 plans. 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, and reinforced bars Nos. 9, 10, and 11 shall be lapped at least 60 bar diameters of the smaller bars joined, except when otherwise shown on the plans.
  - B. Splice locations shall be made as indicated on the plans.
- B. Accurately place reinforcement as shown on the plans and hold firmly and securely in position by wiring at intersections and splices, and by providing 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. Provide supports and ties of such strength and density to permit walking on reinforcing without undue displacement.

- C. Place reinforcing to provide the following minimum concrete cover:
  - A. Surfaces exposed to water: 4 inches
  - B. Surfaces poured against earth: 3 inches
  - C. Formed surfaces exposed to earth or weather: 2 inches
  - D. Slabs, walls, not exposed to weather or earth: 1 inch
- D. Minimum spacing, center of parallel bars shall be two and one half (2 ½) times the diameter of the larger sized bar. Accurately tie reinforcing securely in place prior to pouring concrete. Placing of dowels or other reinforcing in the wet concrete is not permitted.

#### **6.6 PLACING PORTLAND CEMENT CONCRETE**

- A. Thoroughly wet subgrade when concrete is placed directly on soil. Remove all standing water prior to placing concrete.
- B. Do not place concrete until the subgrade and the forms have been approved.
- C. Convey concrete from mixer to final location as rapidly as possible by methods that prevent separation of the ingredients. Deposit concrete as nearly as possible in final position to avoid re-handling.
- D. Place and solidify concrete in forms without segregation by means of mechanical vibration or by other means as approved by the City. Continue vibration until the material is sufficiently consolidated and absent of all voids without causing segregation of material. The use of vibrators for extensive shifting of fresh concrete will not be permitted.
- E. Concrete in certain locations may be pumped into place upon prior approval by the City. When this procedure requires redesign of the mix, such redesign shall be submitted for approval in the same manner as herein specified for approval of design mixes.

#### **6.7 EXPANSION JOINTS**

- A. Construct expansion joints incorporating premolded joint fillers at twenty (20) foot intervals in all concrete curbs, gutters, median/island paving, valley gutters, driveway approaches and at the ends of all returns. At each expansion joint install one-half inch by twelve inch smooth slip dowels in the positions shown or noted on the detail drawings.
- B. Orient slip dowels at right angles to the expansion joint and hold firmly in place during the construction process by means of appropriate chairs.

#### **6.8 WEAKENED PLANE JOINTS**

- A. Construct weakened plane joints in concrete curbs, gutters, median/island paving and valley gutters between expansion joints at ten (10) foot intervals throughout, or as otherwise indicated. Depth of joint score depth to be one-fourth (25%) the thickness of the concrete.

- B. Orient slip dowels at right angles to the expansion joint and hold firmly in place during the construction process by means of appropriate chairs.
- C. Grooved Joints: Form weakened plane joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of weakened plane joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

#### **6.9 FINISHING CONCRETE**

- A. Finish curb and gutter in conformance with the applicable requirements of Section 73 of the Caltrans Standard Specifications as modified herein.
- B. Where monolithic curb, gutter and sidewalk is specified, separate concrete pours will not be allowed.
- C. Provide a broom finish to all horizontal surfaces perpendicular to the path of travel on surfaces used by pedestrians:
  - A. Sloped Less than 6%: Provide a medium salt (medium broom) finish by drawing a soft bristle broom across concrete surface, perpendicular to line of traffic, to provide a uniform fine line texture.
  - B. Surfaces Sloped Greater than 6%: Provide a slip resistant (heavy broom finish) by striating surface 1/16 inch to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

#### **6.10 FORM REMOVAL**

- A. Remove forms without damage to the concrete. Remove all shores and braces below the ground surface, before backfilling.
- B. Do not backfill against concrete until the concrete has developed sufficient strength to prevent damage.
- C. Leave edge forms in place at least 24 hours after pouring.

#### **6.11 CONNECTING TO EXISTING CONCRETE IMPROVEMENTS**

- A. New curb or gutter is to connect to existing improvements to remain by saw cutting to existing sound concrete at the nearest score line, expansion joint or control joint. Drill and insert ½ inch diameter by 12 inch long dowels at 24 inches on center into existing improvements. Install pre-molded expansion joint filler at the matching joint.
- B. A cold joint to the existing curb is not acceptable.

#### **6.12 FIELD QUALITY CONTROL**

- A. Conform the finish grade at top of curb, flow line of gutter, and the finish cross section of concrete improvements to the design grades and cross sections.
- B. Variation of concrete improvements from design grade and cross section as shown or called for on the plans shall not exceed the tolerances established in Section 73 of the Caltrans Standard Specifications.

**6.13 RESTORATION OF EXISTING IMPROVEMENTS**

- A. Replace in kind all pavement or other improvements removed or damaged due to the installation of concrete improvements.
- B. Remove, landscaping or plantings damaged or disturbed due to the installation of concrete improvements. Replace in kind.

**END OF SECTION**

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## **SECTION 32 14 00 – SLURRY SEAL**

### **PART 1 - GENERAL**

#### **1.1 SECTION INCLUDES**

- A. The Contractor shall perform all work associated with Slurry Seal as shown and as specified herein including all labor, materials, equipment supplies, and facilities associated with providing a finished product satisfying all the requirements of the Contract Documents.

#### **1.2 CONTRACTOR SUBMITTALS**

- A. The Contractor shall submit, at least seven (7) working days before slurry seal placement commences, a laboratory report of test results and proposed mix design covering the specific materials to be used on the project. The percentage of asphaltic emulsion proposed in the mix design shall be within the percentage range specified herein.

#### **1.3 RELATED SECTIONS**

- A. Section 32 17 23, Pavement Markings

#### **1.4 RELATED DOCUMENTS**

- A. Caltrans Standard Specifications, 2018 Section 37, Bituminous Seal

### **PART 2 - PRODUCTS**

#### **2.1 SLURRY SEAL**

- A. Slurry seal shall be Type II in accordance with Section 37-3 of the Caltrans Standard Specifications with the exceptions noted in these specifications.

#### **2.2 AGGREGATE**

- A. Aggregate for Type II slurry seal shall be in accordance with Section 37-3.02A and 37-3.02B of the Caltrans Standard Specifications.

#### **2.3 ASPHALTIC EMULSION**

- A. Asphaltic emulsion shall be Grade PMCQS1h, complying with Section 37-3B(3) of the Caltrans Standard Specifications.
- B. The polymer within the asphalt emulsion shall be Neoprene, SBR, EVA, or SBS or approved equal. Solid polymer such as EVA, SBS, or approved equal shall be adequately blended into the asphalt prior to the asphalt prior to emulsification. If latex such as Neoprene, SBR or similar is used, the latex shall be "co-milled" into the emulsion through the water phase during manufacturing. Each load of polymer asphaltic emulsion shall have a certificate from the asphalt emulsion manufacturing indicating that either asphalt blending or "co-milling" process is used. The certificate shall also state the percentage of the solid rubber polymer added, by weight of the asphalt, as well as the composition of

the polymer. The addition of latex to the emulsion after emulsion manufacturing is prohibited.

## **2.4 WATER AND ADDITIVE**

- A. Water shall be of such quality that the asphalt will not separate from the emulsion before the slurry seal is in place in the work. If necessary for workability, a set-control agent that will not adversely affect the slurry seal may be used.

## **PART 3 - EXECUTION**

### **3.1 GENERAL REQUIREMENTS**

- A. The application of Type II slurry seal shall conform to Section 37-3.03 of the Caltrans Standard Specifications with the exceptions noted in these Specifications.
  - A. The slurry seal shall be placed at a rate to produce 10 to 13 pounds of aggregate per square yard for Type II slurry, as required in these Specifications. The complete mixture shall be such that the slurry seal mixture has proper workability and will permit traffic flow within two (2) hours after placement without the occurrence of bleeding, raveling, polishing, separation, or other distress within 30 days after its placement.
  - B. Asphaltic emulsion shall be added at a rate of between 10 to 15 percent by weight of the dry aggregate. The extract rate will be determined by the Engineer. The quantity of asphaltic emulsion to be used in the slurry seal mixture will be determined by the design asphalt binder content, as approved by the Engineer, and the asphalt solid content of the asphaltic emulsion furnished.
  - C. The Contractor shall sweep all slurry seal streets seven (7) days after the application of slurry seal with a power sweeper.

### **3.2 PROPORTIONAL MIXING**

- A. The proportional mixing of slurry seal shall conform to Section 37-3.03B and 37-3.03C of the Caltrans Standard Specifications.
- B. The mixer shall thoroughly blend all materials to form a homogenous mass before leaving the mixer.

### **3.3 SURFACE PREPARATION**

- A. All existing striping and pavement markers shall also be removed prior to the application of the slurry seal. The slurry shall be applied within 72 hours after the removal of pavement striping marker.
- B. The complete street surface shall be power swept from face of curb to face of curb prior to the application of slurry seal. The Contractor shall provide cleaning method necessary to remove all dirt, vegetation, and loose materials from the pavement.
- C. All material gathered shall be properly disposed of by the Contractor. The Contractor shall remove all plant material growing in the street or on the interface of the asphalt surface with the lip of concrete gutter prior to placing slurry.
- D. Immediately preceding the slurry seal application, the Contractor shall cover all grates, slotted manholes, and other appurtenances on the pavement that would allow the entry

of slurry; cover all manhole covers, water and gas valve box covers, monuments boxes, grates and other exposed facilitates with plastic oil resistant construction paper secured by tape or adhesive. The Contractor prior to the final set of the slurry shall uncover all covered manholes, valves, grates and boxes. All uncovered items shall be clean and meet the requirement of the Project Inspector.

- E. All catch basin grates and hoods adjacent to the work or within 50 feet shall be covered to prevent slurry from entering the catch basin.

#### **3.4 SPREADER BOX**

- A. The slurry mixture shall be spread by means of a controlled spreader box conforming to Section 37-3.03C of the Caltrans Standard Specifications.
- B. The spreader box shall be clean and free of all slurry seal and emulsion at the start of each working shift.

#### **3.5 SAND BLOTTER**

- A. A sand blotter shall be spread at selected driveways, intersections, and where required by the Engineer to accommodate pedestrian or vehicular traffic until the slurry set.

#### **3.6 APPLICATION OF SLURRY SURFACE**

- A. The surface shall be fogged with water directly preceding the spreader. The slurry mixture shall be of the desired consistency when deposited on the surface. Total time of mixing shall not exceed four (4) minutes. A sufficient amount of slurry shall be carried in all parts of the spreader at all times so that the complete coverage is obtained. No lumping, balling or unmixed aggregate shall be permitted. No segregation of the emulsion and aggregate fines from the coarse aggregate will be permitted. If coarse aggregate settles to the bottom of the mix, the slurry will be removed from the pavement. No excessive breaking of the emulsion will be allowed in the spread box. No streaks such as those caused by oversize aggregate will be left in the finished pavement.
- B. The entire pavement, including the area around curb return shall be covered from gutter lip to gutter lip. The ends of slurry seal streets shall be a clean, straight line created by placing 15 lb felt paper with a 30 in. minimum width to create the line.
- C. Longitudinal joints must correspond with lane lines. You may request other longitudinal joint patterns if they do not adversely affect the slurry seal.
- D. Spread slurry seal in full lane widths. Do not overlap slurry seal between adjacent lanes more than 3 inches.
- E. Use kraft paper at transverse joints and over previously placed slurry seal to prevent double placement. Remove the paper after use. Use hand tools to remove spillage.
- F. No excessive buildup, or unsightly appearance shall be permitted on longitudinal or transverse joints. Burlap drags shall be used and changed daily.
- G. Approved squeegees shall be used to spread slurry in non-accessible areas to the slurry mixer. Care shall be exercised in leaving no unsightly appearance from handwork.

- H. Slurry application will be stopped to allow sufficient time to allow slurry to cure prior to opening streets to traffic. Protect the slurry seal from damage until it has cured.
- I. All gutter spills must be cleaned immediately.

### **3.7 WEATHER LIMITATIONS**

- A. The slurry seal shall not be applied when either atmospheric or pavement temperature is 55 degrees Fahrenheit and falling but may be applied when either the atmospheric or pavement temperature is above 45 degrees Fahrenheit and rising. The slurry seal shall not be applied during periods of abnormally high relative humidity.

### **3.8 SLURRY REPAIR**

- A. In the event that the applied slurry seal surface violates the project requirements or has the following conditions:
  - A. Tire or wheel marks
  - B. Longitudinal ridges
  - C. Picked up or raveled areas
  - D. Transverse ridges or bumps
  - E. Washboarding or excessively rough sand blotters
- B. The slurry seal shall be repaired as follows:
  - A. The slurry seal shall be removed by a "PENHALL PROFILER" or equal and a full lane width pass of slurry seal applied in full compliance with these specifications.
  - B. The Engineer may omit removal of the affected slurry seal if it would not affect the repair.

### **3.9 STRIPING**

- A. Temporary striping and legends shall be placed on the newly slurry sealed streets prior to the release of streets to traffic. These materials must be submitted to the Engineer for approval prior to installation.
- B. Permanent striping shall be installed after seven (7) days but no later than ten (10) days after the slurry seal is complete in accordance with Section 32 17 23, Pavement Markings.

**END OF SECTION**

## **SECTION 32 17 23 – PAVEMENT MARKINGS**

### **PART 4 - GENERAL**

#### **4.1 SECTION INCLUDES**

- A. Removal of existing traffic stripes and pavement markers
- B. Removal of existing signs
- C. Cleaning and sweeping of streets before application of traffic stripes and pavement markings
- D. Materials and application for traffic stripes and pavement markings
- E. Materials and application for pavement markers
- F. Traffic control signs and street name signs

#### **4.2 RELATED SECTIONS**

- A. Section 32 12 16, Asphalt Paving

#### **4.3 RELATED DOCUMENTS**

- A. Caltrans Standard Specifications, 2018
  - A. Section 78, Incidental Construction
  - B. Section 81, Miscellaneous Traffic Control Devices
  - C. Section 82, Signs and Markers
  - D. Section 84, Markings
- B. Caltrans Standard Plans, 2018
  - A. Plan A20A through A20D: Pavement Markers and Traffic Lines, Typical Details
  - B. Plan A24A and A24B: Pavement Markings Arrows
  - C. Plan A24C: Pavement Markings, Symbols and Numerals
  - D. Plan A24D: Pavement Markings, Words
  - E. Plan A24E: Pavement Markings, Words, Limit and Yield Lines
  - F. Plan A24F: Pavement Markings, Crosswalks
  - G. Plan A73A: Object Markers
  - H. Plan A73B: Markers
  - I. Plan A73C: Delineators, Channelizers and Barricades
  - J. Plan A74: Survey Monuments
  - K. Plan RS1: Roadside Sign, Typical Installation Details No. 1
  - L. Plan RS2: Roadside Sign, Wood Post - Typical Installation Details No. 2
  - M. Plan RS3: Roadside Sign, Laminated Wood Box Post - Typical Installation Details No. 3
  - N. Plan RS4: Roadside Sign, Typical Installation Details No. 4
- C. The State of California Traffic Manual, 2014

- D. The regulations, standards, and tests of the State of California Department of Transportation Materials and Research Division, edition in effect at time of date on Plans.
- E. Professional Land Surveyor's Act, Business and Professions Code §§ 8700 – 8805

#### **4.4 SUBMITTALS**

- A. Submit product data for each of the following in accordance with Section 2.5 - General Conditions:
  - A. Traffic paint
  - B. Pavement markers and adhesives
  - C. Reflectorized markers and posts

#### **4.5 QUALITY ASSURANCE**

- A. Deliver certificates showing conformance with this specification to the Contractor with each shipment of materials and equipment to the Project site.
- B. Provide proper facilities for handling and storage of products to prevent damage. Where necessary, stack products off ground on level platform, fully protected from weather.

#### **4.6 PROJECT CONDITIONS**

- A. Do not apply traffic striping or pavement markings to the pavement until after approval to proceed has been given by the City.
- B. Thoroughly cure new asphalt concrete and portland cement concrete before application of stripes, markings or markers.

### **PART 5 - PRODUCTS**

#### **5.1 PAINTED STRIPES AND MARKINGS**

- A. Painted striping and marking materials shall be in accordance with Caltrans Standard Specifications Sections 84-2.02 and 84-2.02C, unless noted otherwise herein or on the Plans.
- B. Glass Beads shall be in accordance with Caltrans Standard Specification Section 84-2.02D, Glass Beads, unless noted otherwise herein or on the Plans.

#### **5.2 PAVEMENT MARKERS**

- A. Pavement Markers shall be in accordance with Caltrans Standard Specification Section 81-3, Pavement Markers, and as indicated on the Plans.
- B. Material

- A. Non-reflective Material shall be in accordance with Caltrans Standard Specification Section 81-3.02B, Non-Reflective Pavement Markers.
- B. Retroreflective Material shall be in accordance with Caltrans Standard Specification Section 81-3.02C, Retroreflective Pavement Markers.
- C. Adhesive:
  - A. Adhesive Material shall be in accordance with Caltrans Standard Specification Section 81-3.02D, Hot Melt Bituminous Adhesive.

### **5.3 TRAFFIC CONTROL SIGNS**

- A. General: Traffic control signs shall be in accordance with Caltrans Standard Specification Section 82-1, Signs and Markers.
- B. Sign Panels shall be in accordance with Caltrans Standard Specification Section 82-2, Sign Panels. Conform type (regulatory or warning), size, shape and pattern to the State of California, Department of Transportation, Traffic Manual, edition in effect at the date of the Plans.
- C. Posts:
  - A. Metal Posts shall be in accordance with Caltrans Standard Specification Section 82-3.02B, Metal Posts.
  - B. Wood Posts shall be in accordance with Caltrans Standard Specification Section 82-3.02C, Wood Posts.
- D. Mounting Hardware shall be in accordance with Caltrans Standard Specification 82-3.02E, Sign Panel Fastening and Mounting Hardware, unless otherwise specified.
- E. Post Foundations: Conform to Caltrans Standard Plans.

## **PART 6 - EXECUTION**

### **6.1 REMOVAL OF TRAFFIC STRIPES, PAVEMENT MARKINGS AND PAVEMENT MARKERS**

- A. Where blast cleaning is used for the removal of painted traffic stripes and pavement markings, or for removal of objectionable material, remove the residue, including dust and water, immediately after contact with the surface being treated. Remove by a vacuum attachment operating concurrently with the blast cleaning operation.
- B. Where grinding is used for the removal of thermoplastic traffic stripes and pavement markings; remove the residue by means of a vacuum attachment to the grinding machine. Do not allow the residue to flow across or be left on, the pavement.
- C. Where markings are to be removed by blast cleaning or by grinding, the removed area shall be approximately rectangular so that no imprint of the removed marking remains on the pavement.

- D. Contractor will be responsible for repairing any damage to the pavement during removal of pavement markers. Damage to the pavement, resulting from removal of pavement markers, shall be considered as any depression more than 1/4-inch deep.

## **6.2 TEMPORARY PAVEMENT MARKERS**

- A. If permanent pavement markers cannot be installed immediately, and the street or road is to be placed in service, install short term, temporary pavement markers on the new pavement prior to opening the street or road to traffic.
- B. Place markers, at a minimum, of 24 feet on centers, or as required by the governmental agency having jurisdiction, in the appropriate colors to delineate centerlines and travel lanes on multi-lane roadways.

## **6.3 PAINTED TRAFFIC STRIPES AND PAVEMENT MARKINGS**

- A. Apply in conformance with the manufacturer's instructions and the applicable requirements of Caltrans Standard Specification Section 84-3.03, 3.04 and 3.05 and Caltrans Standard Plans A20A through A20D, and A24A through A24F.

## **6.4 PAVEMENT MARKERS**

- A. Place in accordance with Caltrans Standard Specification Section 81-3.03, Construction.
- B. Pavement recesses are not required. Markers shall be installed accurately to the line established by the City. No markers shall be installed until the surface has been approved by the City.

## **6.5 TRAFFIC CONTROL SIGNS**

- A. Install in accordance with Caltrans Standard Specification Sections 82-2.03 and 82-3.03, Caltrans Standard Plan RS1, the applicable requirements of the State of California Department of Transportation Maintenance Manual and the details shown on the Plans. The horizontal locations shown on Caltrans Standard Plan RS1 shall not be applicable, the horizontal location shall be as shown on the Plans.
- B. Portland cement concrete for post foundations shall be of the configuration shown on the Plans.
- C. After erection, damage to traffic sign faces shall be touched up or the sign replaced.

## **6.6 PROTECTION**

- A. Protect the newly installed traffic stripes and pavement markings from damage until the material has cured.
- B. Replace any traffic stripes or pavement markings or markers broken, misaligned or otherwise disturbed prior to opening roadway to traffic.

**6.7 RESTORATION OF EXISTING IMPROVEMENTS**

- A. Existing signs striping or other markings removed or damaged due to the installation of new facilities shall be replaced in kind.
- B. Existing landscaping or planting removed, damaged or disturbed due to the installation of traffic control signs or street name signs shall be replaced in kind.

**END OF SECTION**

**SECTION 33 30 00 – SANITARY SEWER SYSTEM**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. Sanitary gravity sewers within public right-of-way.

**1.2 RELATED SECTIONS**

- A. Section 31 21 00, Utility Trenching and Backfill.

**1.3 RELATED DOCUMENTS**

- A. AASHTO
  - A. M199: Standard Specification for Precast Reinforced Concrete Manhole Sections
- B. ASTM
  - A. A615: Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
  - B. A139: Specification for Electric Fusion (Arc) Welded Steel Pipe (Sizes 4 inches and Over)
  - C. C143: Standard Test Method for Slump of Hydraulic-Cement Concrete.
  - D. C443: Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
  - E. C478: Standard Specification for Circular Precast Reinforced Concrete Manhole Sections.
  - F. C923: Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals.
  - G. C1173: Standard Specification for Flexible Transition Couplings for Underground Piping Systems.
  - H. C1244: Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill.
  - I. D3034: Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
  - J. D4101: Standard Specification for Propylene Injection and Extrusion Materials.
  - K. F477: Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
  - L. F1336: Standard Specification for Poly(Vinyl Chloride) (PVC) Gasket Sewer Fittings.
- C. AWWA
  - A. M23: PVC Pipe – Design and Installation
  - B. C200: Standard for Steel Water Pipe - 6-In. (150 mm) and Larger
  - C. C207: Steel Pipe Flanges for Waterworks Service – sizes 4 In. through 144 In
- D. Caltrans Standard Specifications, 2018
  - A. Section 51, Concrete Structures
  - B. Section 75 Miscellaneous Metal
  - C. Section 90, Concrete
- E. Federal Specification

- A. SS-S-00210 (GSA-FSS)
- F. Cupertino Sanitary District Standard Specifications

#### **1.4 DEFINITIONS**

- A. AASHTO: American Association of State Highway and Transportation Officials
- B. ASTM: American Society for Testing Materials
- C. AWWA: American Water Works Association
- D. HPDE: High Density Polyethylene Pipe
- E. PVC: Polyvinyl Chloride
- F. NPS: Nominal pipe size

#### **1.5 SUBMITTALS**

- A. Follow submittal procedure outlined in Section 2.5 - General Conditions.
- B. Product data for the following:
  - A. Piping materials and fittings
  - B. Special pipe couplings
  - C. Joint sealants
  - D. Cleanout plugs or caps
  - E. Steel pipe (including manufacturer name, location, and representative contact information)
- C. Shop drawings: Include plans, elevations, details and attachments for the following:
  - A. Precast concrete manholes, frames and covers.
  - B. Precast concrete clean out boxes and box covers.
- D. Shop drawings for steel pipe illustrating details of pipe, joint details, and miscellaneous items to be furnished and fabricated for the pipe. Dimensions, tolerances, wall thickness, properties and strengths, and other pertinent information shall be shown. These items shall be submittal for review prior to fabrication
- E. Full and complete information regarding location, type, size and extent of welds shall be shown on the Shop Drawings. The Shop Drawings shall distinguish between shop and field welds. Shop Drawings shall indicate by welding symbols or sketches the details of the welded joints and the preparation of parent metal required to make them. Joints or groups of joints in which welding sequence or technique are especially important shall be carefully controlled to minimize shrinkage stresses and distortion.
- F. Calculations confirming that steel pipe capacity is adequate to safely support all other anticipated loads, including earth and groundwater pressures, traffic loads, surcharge loads, handling loads, and any other loads that may be reasonably anticipated during jacking and during the service life of the pipe. Confirm that jointing method will support loading conditions.

- F. Design Mix Reports and Calculations: For each class of cast in place concrete.
- G. Field Test Reports: Indicate test results for compliance with performance.
- H. Certifications for HDPE fusing
- I. The submittals listed above shall be reviewed and approved by the Cupertino Sanitary District

## **1.6 DELIVERY, STORAGE AND HANDLING**

- A. Delivery and Storage
  - A. Piping: Inspect materials delivered to site for damage; store with minimum of handling. Store materials on site in enclosures or under protective coverings. Store plastic piping and jointing materials and rubber gaskets under cover out of direct sunlight. Do not store materials directly on the ground. Keep inside of pipes and fittings free of dirt and debris.
  - B. Metal Items: Check upon arrival; identify and segregate as to types, functions, and sizes. Store off the ground in a manner affording easy accessibility and not causing excessive rusting or coating with grease or other objectionable materials.
  - C. Steel pipe: Prior to delivery of pipe, end/internal bracing shall be furnished and installed, as recommended by the manufacturer, for protection during shipping, storage and handling.
- B. Handling
  - A. Handle pipe, fittings, and other accessories in such manner as to ensure delivery to the trench in sound undamaged condition. When handling lined pipe, take special care not to damage linings of pipe and fittings; if lining is damaged, make satisfactory repairs. Carry, do not drag, pipe to trench.
  - B. Handle precast concrete pipe, manholes and other precast structures according to manufacturer's written instructions.
  - C. Protect imported bedding and backfill material from contamination by other materials.

## **PART 2 - PRODUCTS**

### **2.1 PVC PIPE**

- A. Pipe:
  - A. 4 inch through 15 inch: ASTM D3034, SDR 26
- B. Bell and spigot joints
- C. Fittings:
  - A. 4 inch through 27 inch: ASTM F1336
- D. Joint Gasket: Elastomeric seal, ASTM F477
- E. Special Pipe Coupling: ASTM C1173. Rubber or elastomeric sleeve and band assembly fabricated to match outside diameters of pipes to be joined.

## 2.2 HDPE PIPE

- A. HDPE pipe and fittings shall be Driscoplex 4100 SDR 17 or approved equal, consisting of virgin high molecular weight polyethylene, specified under ASTM D3350 as having a minimum cell classification of PE345434C and soft white or gray interior surface (black color will not be allowed). Pipe shall have a manning "n" factor of 0.010 for gravity flow.

B.

HDPE SDR 17 Pipe Size (in)	Nominal Pipe OD (in)	Min. Wall Thickness (in)	Avg. ID (in)	Weight (lb/ft)
8	8.625	0.507	7.550	5.69

## 2.3 STEEL PIPE

### A. DESIGN CRITERIA:

1. The Contractor is fully responsible for the design of steel pipe that meets or exceeds the design requirements of this Specification.
2. Design of the pipe shall account for installation and service loads including:
  - a. External groundwater and earth loads
  - b. Traffic loads
  - c. Practical consideration for handling, shipping, and other construction operations
  - d. Any other live or dead loads reasonably anticipated.
3. Steel pipe shall have 1/4 inches minimum thickness steel cylinder pipe conforming to AWWA C200 with no coating or lining, subject to the following supplemental requirements:
  - a. The pipe shall be of the diameter shown on the Drawings, shall be furnished complete with welded or integral machined press-fit joints.
  - b. The inside diameter shall not be less than the nominal diameter specified or shown.
  - c. Except as otherwise provided herein, materials, fabrication and shop testing of straight pipe shall conform to the requirements of AWWA C200.
  - d. The pipe shall be:
    - 1) New, smooth wall carbon steel pipe which complies with ASTM A139, Grade B; or ASTM A283 Grade C;
    - 2) Have a minimum yield strength of 33,000 psi;
    - 3) Have a maximum carbon content of 0.25 percent
    - 4) Have a minimum elongation of 22 percent in a 2-inch gage length.
    - 5) Have a roundness such that the difference between the major and minor outside diameters not exceed 0.5 percent of the specified nominal outside diameter or 0.25 inch, whichever is less; and
    - 6) Have an outside circumference which is within 0.5 percent of the nominal circumference. Steel pipe must have a minimum allowable straightness deviation in any 10 foot length of 1/8 inch.
    - 7) Be square cut with dead-even lengths compatible with trenchless pipe installation.

- 8) Have enough strength to sustain vertical and internal loads.
- 4. Steel pipe joints shall be achieved by full penetration field butt welding or an integral machined press-fit connection (Permalok or Approved Equal) prior to installation of the pipe. Field butt welding a square end piece of steel pipe to a beveled end of steel pipe is acceptable. Integral machined press-fit connections shall be installed in accordance with the manufacturer's installation procedures and recommendations.

**B. Fabrication:**

- 1. Shop Fabrication:
  - a. Steel pipe shall be fabricated with longitudinal weld seams. Girth weld seams shall be ground flush.
- 2. Fabrication Tolerances:
  - a. Shall meet design criteria per Section 2.3 A
  - b. The minimum wall thickness at any point shall be at least 87.5% of the nominal wall thickness.
  - c. The outside diameter of the pipe shall be within 1.0% of the nominal outside diameter.

**2.4 GRAVITY PIPE CLEANOUTS**

- A. Piping: Same as sanitary sewer line, if possible
- B. Top Cap: Threaded and of same material as piping if possible
- C. Box Size: As required to provide access and allow easy removal and reinstallation of cap
- D. Box Types:
  - A. Non-Traffic Areas: Portland cement concrete box and box cover, light duty
  - B. Traffic Areas: Portland cement concrete box and box cover or steel or cast iron cover, heavy duty, both box and cover to be rated for AASHTO H20 loading.
- E. Box Cover Markings: "SANITARY SEWER" unless otherwise specified
- F. Available Manufacturers: Subject to compliance with requirements, box manufacturers offering products that may be incorporated into the Project include, but are not limited to the following:
  - A. Associated Concrete Products, Inc.
  - B. Brooks Products Inc.
  - C. Christy Concrete Products, Inc., or approved equal

**2.5 MANHOLES**

- A. Manholes shall be pre-cast concrete of the size and shape shown on the Plans and shall conform to ASTM C478. Equivalent poured-in-place structures may be used at the Contractor's option. Concrete shall consist of Caltrans Type I/II cement. Rate for AASHTO H20 loading in traffic areas.

- B. All interior concrete surfaces shall be coated with "Xypex Crystalline" or approved equivalent. Use of a water-resistant admix is acceptable, at Contractor option.
- C. Frames and Covers: As indicated and in accordance with Caltrans Standard Specification Section 75-2.02B. Manhole covers shall have the words "SANITARY SEWER" in letters not less than 2 inches cast into the cover. The clear opening for all manhole covers shall be 24 inches.
- D. Frames and lids for manholes shall be match-marked in pairs before delivery to the job site. The lids shall fit into their frames without rocking.
- E. Reinforcing Bars: Reinforcing bars shall be of intermediate grade billet steel conforming to ASTM A615 and shall be of the size shown on the Standard Details or in the Plans. Bars shall be of the round deformed type, free from injurious seams, flaws, or cracks, and shall be cleaned of all rust, dirt, grease and loose scales.
- F. Portland Cement Concrete: Concrete for manhole bases, inlets, and other concrete structures shall conform to the requirements of Caltrans Standard Specifications Section 90 and as specified herein. The concrete shall be Class "A" containing six (6) sacks of portland cement per cubic yard of concrete. The grading of the combined aggregate shall be in accordance with the Caltrans requirements of the three-quarter inch maximum. The consistency of the concrete shall be such that the slump does not exceed four inches, as determined by ASTM C143. The concrete shall have a minimum design compressive strength of 3,000 psi after 28 days.
- G. Steps: ASTM C478 or AASHTO M199. Manufacture from deformed, ½ inch steel reinforcement rod complying with ASTM A615 and encased in polypropylene complying with ASTM D4101. Include pattern designed to prevent lateral slippage off step. Acceptable manufacturer is Hanson Concrete Products, or equal.

## **2.6 JOINT SEALANT FOR STRUCTURES AND MANHOLES**

- A. Mortar: Caltrans Standard Specification Section 51-1.02F
  - A. Use to seal around pipes at connections to structures and manholes. Also use to seal joints between precast sections of structures and manholes.
- B. Gaskets: Preformed flexible rubber or plastic gasket
  - A. Rubber Gaskets: ASTM C443
  - B. Plastic Gaskets: Federal Specification SS-S-00210 (GSA-FSS), Type I, Rope Form; or alternate standard which may exist. Acceptable material is "Ram-Nek," as manufactured by the Henry Company, or equal

## **2.7 PIPE TO STRUCTURE CONNECTOR/SEAL**

- A. A flexible pipe to manhole connector shall be used for all pipe penetrations to pre-cast and/or cast-in-place concrete structures.
  - A. The seal shall provide a flexible, positive, watertight connection between pipe and concrete wastewater structures. The connector shall assure that a seal is made between (1) the connector and the structure wall, and (2) between the connector and the pipe. The seal between the connector and the manhole wall shall be made by casting the connector integrally with the structure wall during the manufacturing process in such a manner that it will not pull out during coupling. The seal between

connector and pipe will be made by way of a stainless steel take down band compressing the gasket against the outside diameter of the pipe.

- B. The connector shall be molded from materials whose physical/chemical properties meet or exceed the physical/chemical resistant properties outlined in ASTM C923. The connector and stainless steel hardware shall meet or exceed the performance requirements proscribed in ASTM C923.
- C. The connector shall be of size specifically designed for the pipe material being used and shall be installed in accordance with recommendations of the manufacturer.
- D. Connectors shall be Z-LOK or G3 connectors manufactured by A-LOK Products Inc. or approved equivalent.

### **PART 3 - EXECUTION**

#### **3.1 GRAVITY PIPE INSTALLATION**

- A. General: Install pipe, fittings, and appurtenances utilizing best practices, manufacturer's instructions, and in accordance with Section 6 and 7 of ASTM D 2321 for plastic pipe, Caltrans Standard Specification Section 65-2.03 for reinforced concrete pipe and chapter 11.3.3 of AWWA M41 for ductile iron pipe.
- B. Pipe Depth and Trench Configuration: Conform to typical trench section(s) indicated.
- C. Excavation, Bedding, Backfill, and Compaction: Section 31 21 00, Utility Trenching and Backfill.
- D. Handling: Carefully handle during loading, hauling, unloading and placing operations to avoid breakage or damage. Use strap type slings for lifting and placing; no chains or hooks will be permitted. Comply with the manufacturer's recommendations.
- E. Laying: Before lowering pipe into the trench, remove all stakes, debris, loose rock and other hard materials from the bottom of the trench. Lay accurately in conformance with lines and grades indicated. Start laying the pipeline at the low end and proceed upstream. Lay bell and spigot pipe with the bell end facing upstream. Lay pipe on a bed prepared by handwork, dug true to grade. Furnish firm bearing for pipe throughout its entire length with bell holes provided at the ends of each pipe length of sufficient size to permit making up the particular type of joint being used. Adjust pipe to line and grade by scraping away or filling and tamping material under the body of the pipe for the entire pipe length and not by blocking or wedging. After final positioning, hold pipe in place in trench with backfill material placed equally on both sides of the pipe at as many locations as required to hold the pipe section in place.
- F. Curved Alignment: When necessary to conform to the alignment specifically indicated, lay pipe on a curved alignment by means of asymmetrical closure of joints or bending of the pipe barrel. Use shorter lengths of pipe than the standard length if necessary to achieve curvature specified. Do not exceed the recommendations of the pipe manufacture for deflections at the joints or pipe bending.
- G. Closure: Close open ends of pipes and appurtenance at the end of each day's work or when work is not in progress.

### **3.2 INSTALLATION OF POLYVINYL CHLORIDE PIPING**

- A. Comply with the recommendations for pipe installation, joint assembly and appurtenance installation in AWWA M23.
- B. Comply with the applicable requirements of AWWA C600 for joint assembly, and with the recommendations of Appendix A to AWWA C111.
- C. Jointing:
  - A. Provide push-on joints with the elastomeric gaskets specified for this type joint, using either elastomeric-gasket bell-end pipe or elastomeric-gasket couplings.
  - B. For pipe-to-pipe push-on joint connections, use only pipe with push-on joint ends having factory-made bevel.
  - C. For push-on joint connections to metal fittings, valves, and other accessories, cut spigot end of pipe off square and re-bevel pipe end to a bevel approximately the same as that on ductile-iron pipe used for the same type of joint.
  - D. Use an approved lubricant recommended by the pipe manufacturer for push-on joints.
  - E. Assemble push-on joints for connection to fittings, valves, and other accessories in accordance with the applicable requirements of AWWA C600 for joint assembly.
  - F. Make compression-type joints/mechanical-joints with the gaskets, glands, bolts, nuts, and internal stiffeners previously specified for this type joint. Cut off spigot end of pipe for compression-type joint or mechanical-joint connections and do not re-bevel.
  - G. Assemble joints made with sleeve-type mechanical couplings in accordance with the recommendations of the coupling manufacturer using internal stiffeners as previously specified for compression-type joints.
- D. Pipe Anchorage:
  - A. Provide concrete thrust blocks or restrained joints for pipe anchorage, except where metal harness is indicated on the Plans.

### **3.3 INSTALLATION OF HIGH-DENSITY POLYETHYLENE PIPE**

- A. Pipe shall be butt welded in accordance with ASTM D2657. The joints shall be leak proof thermal butt joints. All fusing shall be done using tools recommended by the pipe supplier and approved by the Engineer. The fusing machine shall have hydraulic pressure control for fusing two pipe ends together. The ends of pipe shall be electrically heated and thermostatically controlled and shall contain a temperature gauge for monitoring temperature. The heating plate shall be subject to periodic inspection using a temperature stick to assure even heating.
- B. The tensile strength of yield of the butt fusion joints shall not be less than the pipe. The Contractor shall test a specimen of pipe cut across the butt fusion joints in accordance with ASTM D638.
- C. Any material may be rejected for failure to meet any of the requirements of these Technical Specification. The acceptance of any deviation from these specifications shall be subject to the approval of the Engineer.
- D. Joints between pipe sections shall be smooth on the inside and internal projection beads shall not be greater than 3/16 of an inch.

- E. The internal bead shall be removed with a tool specifically designed for that purpose during the fusing process.
- F. A copy of the required butt fusion parameters listed below shall be kept at the job site so that the temperature and pressures of the jointing process are known and can be checked on site:
  - A. The temperature at the surface of the heating plate (the fusion temperature);
  - B. The pressure used to push the pipe against the heating plate;
  - C. The time when the pipe ends are in contact with the heating plate but no pressure is being applied (soak time);
  - D. The pressure used to push the pipe ends together after heating (the fusion pressure);
  - E. The time of application of this butt fusion pressure (fusion cooling time);
  - F. Allowable bead height and width range;
- G. **COUPLINGS SHALL NOT BE USED TO CONNECT HDPE PIPE SECTIONS.**

### **3.4 SPECIAL PIPE COUPLINGS**

- A. General: Use where required to join piping and no other appropriate method is specified. Do not use instead of specified joining methods.
- B. Installation: Manufacturers' instructions

### **3.5 POURED-IN-PLACE CONCRETE**

- A. Concrete shall be mixed in accordance with applicable provisions of Section 90 of Caltrans Standard Specifications.
- B. Construction of concrete structures shall conform to applicable provisions of Section 51 of the Caltrans Standards Specifications. Unless otherwise noted herein or in the Plans, exposed surfaces of structures shall be Class 1 surface finish.
- C. Curing shall conform to applicable portions in Section 90 of Caltrans Standard Specifications. No pigment shall be used in curing compounds. All work shall be subject to inspection. No concrete shall be placed until the Project Manager has approved the forms and reinforcement.
- D. Concrete shall not be dropped freely where reinforcing bars will cause segregation, nor shall it be dropped freely more than six feet. Spouts, elephant trunks, or other approved means shall be used to prevent segregation.

### **3.6 GRAVITY PIPELINE AIR TESTING AND FLUSHING**

- A. All new sections of sanitary sewer shall be tested using the following procedures:
  - A. Test is conducted between two consecutive manholes, or as directed by the Project Manager.
  - B. The test section of the sewer shall be plugged at each end. One of the plugs used at the manhole shall be tapped and equipped for the air inlet connection for filling the line from an air compressor.

- C. All service laterals, stubs, and fittings into the sewer test section shall be properly capped or plugged and carefully braced against the internal pressure to prevent air leakage by slippage and blowout.
- D. Connect air hose to tapped plug selected for the air inlet. Connect the other end of the air hose to the portable air control equipment, which consists of valves and pressure gauges used to control the air entry rate into the sewer test section, and to monitor the air pressure in the pipeline. More specifically, the air control equipment includes a shut-off valve, pressure regulating valve, pressure reduction valve, and a monitoring pressure gauge having a pressure range from 0-5 psi. The gauge shall have minimum divisions of 0.10 psi and an accuracy of 0.40 psi.
- E. Connect another air hose between the air compressor (or other source of compressed air) and the air control equipment. This completes the test equipment set-up. Test operations may commence.
- F. Supply air to the test section slowly, filling the pipeline until a constant pressure of 3.5 psig is maintained. The air pressure must be regulated to prevent the pressure inside the pipe from exceeding 5.0 psig.
- G. When constant pressure of 3.5 psig is reached, throttle the air supply to maintain the internal pressure above 3.0 psig for at least 5 minutes. This time permits the temperature of the entering air to equalize with the temperature of the pipe wall. During this stabilization period, it is advisable to check all capped and plugged fittings with a soap solution to detect any leakage at these connections. If leakage is detected at any cap plug, release the pressure in the line and tighten all leaky caps and plugs. Start the test operation again by supplying air. When it is necessary to bleed off the air to tighten or repair a faulty plug, a new 5-minute interval must be allowed after the pipeline has been refilled.
- H. After the stabilization period, adjust the air pressure to 3.5 psig and shut-off or disconnect the air supply. Observe the gauge until the air pressure reached 3.0 psig. At 3.0 psig, commence timing with a stopwatch until the pressure drops to 2.5 psig, at which time the stop watch is stopped. The time required, as shown on the stopwatch, for a pressure loss of 0.5 psig is used to compute the air loss.
- I. If the time, in minutes and seconds, for the air pressure drop from 3.0 to 2.5 psi is greater than that shown in the following table for the designated pipe size, the section undergoing test shall have passed and shall be presumed to be free of defects. The test may be discontinued at any time.
- J. If the time, in minutes and seconds, for the 0.5 psig drop is less than that shown in the following table for the designated pipe size, the section of the pipe shall not have passed the test; therefore, adequate repairs must be made and the line retested.

Requirements for Air Testing:

Pipe Size (in inches)	Time	
	Minutes	Seconds
4	2	32

- K. For 8 inch and smaller pipe, only: if, during the 5 minute saturation period, pressure drops less than 0.5 psig after the initial pressurization and air is not added, the pipe section undergoing test shall have passed.
- L. Adjustment Required for Groundwater:
  - a. An air pressure correction is required when the ground water table is above the sewer line being tested. Under this condition, the air test pressure must be increased .433 psi for each foot the ground water level is above the invert of the pipe.

- b. Where ground water is encountered or is anticipated to be above the sewer pipe before the air testing will be conducted, the following procedure shall be implemented at the time the sewer main and manholes are constructed.
- 1) Install a ½ inch diameter pipe nipple (threaded one or both ends, approximately 10 inch long) through the manhole wall directly on top of one of the sewer pipes entering the manhole with threaded end of nipple extending inside the manhole.
  - 2) Seal pipe nipple with a threaded ½ inch cap.
  - 3) Immediately before air testing, determine the ground water level by removing the threaded cap from the nipple, blowing air through the pipe nipple to remove any obstruction, and then connecting a clear plastic tube to the pipe nipple.
  - 4) Hold plastic tube vertically permitting water to rise in it to the groundwater level.
  - 5) After water level has stabilized in plastic tube, measure vertical height of water, in feet, above invert of sewer pipe.
  - 6) Determine air pressure correction, which must be added to the 3.0 psig normal starting pressure of test, by dividing the vertical height in feet by 2.31. The result gives the air pressure correction in pounds per square inch to be added.
- B. After the line has passed the air test, it shall be balled and flushed with water to clean. A metal screen shall be used downstream at the point of connection to the existing system to collect and remove any rock or other debris that is flushed out during cleaning.

### **3.7 TESTING OF MANHOLES ON GRAVITY LINES**

- A. At the option of the Contractor, either the following hydrostatic or vacuum test shall be performed.
- A. Hydrostatic Test: In general, the following hydrostatic test is in conformance with that presented in Standard Specifications.
  - B. Insert inflatable plugs in all sewer inlets and outlets.
  - C. Fill the manhole with water to a point six inches below the base of the manhole frame.
  - D. Maintain the water at this point for one hour to allow time for absorption.
  - E. Begin one-hour test period. Measure the amount of water added in one-hour period to maintain the water level at six inches below the base of the manhole frame. Do not allow water level to drop more than 25% of the manhole depth.
  - F. Determine the allowable leakage by the following formula.

$$L = 0.0002 \times D \times H^{1/2}$$

L = Allowable leakage, gallons per minute.

D = Depth of manhole from top to bottom, feet.

H = Head of water in feet as measured from the surface of the water in the manhole to the sewer line invert or to the prevailing ground water surface outside the manhole. The lesser height governs.

- G. If the leakage exceeds the allowable, determine the cause, take remedial action and re-test the manhole. If the leakage is less than the allowable and leaks are observed, repair the leaks.
- B. Vacuum Test:

- A. General: Test in accordance with ASTM C1244.
- B. Test prior to backfilling around the manhole.
- C. Test Preparation: Plug all lift holes and pipes entering or exiting the manhole.
- D. Place test head inside the top section of the manhole's cone section and inflate in accordance with the manufacturer's instructions.
- E. Draw a vacuum of 10 inches of mercury and shut the pump off.
- F. With the valve closed, the time for the vacuum to drop 9 inches shall be measured.
- G. The manhole shall pass the test if the time is greater than 60 seconds for a 48 inch diameter manhole, 75 seconds for a 60 inch diameter manhole and 90 seconds for a 72 inch diameter manhole.
- H. If the manhole fails the initial test, make necessary repairs with a non-shrink grout while the vacuum is still being drawn. Retest until a satisfactory test is obtained. inch (gauge).

### **3.8 DEFLECTION TESTING**

- A. Upon completion of work, perform a deflection test on entire length of installed plastic pipeline. Completed work includes superimposed loads adjacent to and over the pipeline, such as compacted backfill and earthwork, and does not include paving, concrete curbs and gutters, sidewalks, walkways, and landscaping.
- B. Under external loads, deflection of pipe in the installed pipeline shall not exceed 4.5 percent of the average inside diameter of pipe.
- C. Determine whether the allowable deflection has been exceeded by use of a pull-through device or a deflection-measuring device.
- D. Pull-Through Device:
  - A. Provide a spherical, spheroidal, or elliptical ball, a cylinder, or circular sections fused to a common shaft.
    - a. Circular sections shall be so spaced on the shaft that distance from external faces of front and back sections will equal or exceed diameter of the circular section.
    - b. Pull-through device may also be of a design approved by the Uni-Bell Plastic Pipe Association, provided that the device meets the applicable requirements specified in this paragraph, including those for diameter of the device.
  - B. Ball, cylinder, or circular sections shall conform to the following:
    - a. A diameter, or minor diameter as applicable, of 95 percent of the average inside diameter of the pipe; tolerance of plus 0.5 percent will be permitted.
    - b. A homogeneous material throughout, with a density greater than 1.0 as related to water at 39.2 degrees F, and a surface Brinell hardness of not less than 150.
    - c. Center bored and through bolted with a ¼ inch minimum diameter steel shaft having a yield strength of not less than 70,000 pounds per square inch, with eyes or loops at each end for attaching pulling cables.
    - d. Each eye or loop shall be suitably backed with a flange or heavy washer such that a pull exerted on opposite end of shaft will produce compression throughout remote end.
- E. Pull-Through Device:
  - A. Pass the pull-through device through each run of pipe, either by pulling it through or flushing it through with water.

- B. If the device fails to pass freely through a pipe run, replace pipe which has the excessive deflection and completely retest in same manner and under same conditions as specified.
- F. Deflection measuring Device:
  - A. Sensitive to 1.0 percent of the diameter of the pipe being tested and accurate to 1.0 percent of the indicated dimension.
  - B. Obtain approval of deflection measuring device prior to use.
- G. Deflection Measuring Device Procedure:
  - A. Measure deflections through each run of installed pipe.
  - B. If deflection readings in excess of 4.5 percent of average inside diameter of pipe are obtained, retest pipe by a run from the opposite direction.
  - C. If retest continues to show a deflection in excess of 4.5 percent of average inside diameter of pipe, remove pipe which has excessive deflections, replace with new pipe, and completely retest in same manner and under same conditions.
- H. Warranty Period Test: Pipe found to have a deflection of greater than 5 percent of average inside diameter when deflection test is performed just prior to end of 1 year warranty period shall be replaced with new pipe and tested as specified for leakage and deflection.

### **3.9 CLEANING**

- A. Thoroughly clean sewer lines and manholes of sediments, dirt, debris, and obstructions of any kind.

### **3.10 TELEVISION INSPECTION**

- A. After completion of the pipe installation, service connections, flushing and cleaning, and prior to placement of pavement, the sewer line shall be televised with a color closed-circuit television with tilt-head camera recorded in DVD format. The original disc and log sheets shall be provided to the City for review.
- B. The following observations from television inspections will be considered defects in the construction of sewer pipelines and will require correction prior to placement of pavement:
  - A. Low spot (1 inch or greater - mainlines only)
  - B. Joint separations (3/4 inch or greater opening between pipe sections)
  - C. Cocked joints present in straight runs or on the wrong side of pipe curves
  - D. Chips in pipe ends
  - E. Cracked or damaged pipe
  - F. Dropped joints
  - G. Infiltration
  - H. Debris or other foreign objects
  - I. Other obvious deficiencies
  - J. Irregular condition without logical explanation

### **END OF SECTION**

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**SECTION 33 41 00 – STORM UTILITY DRAINAGE PIPING**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Furnishing and installing Reinforced Concrete Pipe (RCP), Reinforced Concrete Box (RCB) and Elliptical RCP and fittings for gravity flow. In addition, it shall include all connections and joints to new or existing pipes, storm sewer manholes, inlets, and other appurtenances.

**1.02 RELATED SECTIONS**

Section 31 23 19 - Dewatering

**1.03 SECTION EXCLUDES**

- A. Disconnecting, capping or sealing, and abandoning storm drain lines in place, see Section 02 40 00.

**1.04 RELATED DOCUMENTS**

- A. AASHTO:

- 1. M 199: Precast Reinforced Concrete Manhole Sections.

- B. ASTM:

- 1. A 240/A240M: Standard Specifications for Chromium and Chromium Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels and for General Applications.
  - 2. A 276: Standard Specification for Stainless Steel Bars and Shapes.
  - 3. A 582/A582M: Standard Specification for Free-Machining Stainless Steel Bars.
  - 4. A 615/A615M: Deformed and Billet-Steel Bars for Concrete Reinforcement.
  - 5. A 790/790M: Standard Specification for Seamless and Welded Ferritic / Austenitic Stainless-Steel Pipe.
  - 6. B 179: Standard Specification for Aluminum Alloys in Ingot and Molten Forms for Castings from All Casting Processes.
  - 7. B 584: Standard Specification for Copper Alloy Sand Castings for General Applications.
  - 8. C 443: Joints for Circular Concrete Pipe and Manholes, Using Rubber Gaskets.
  - 9. C 478: Precast Reinforced Concrete Manhole Sections.
  - 10. C 1244: Test Method for Concrete Sewer Manholes by Negative Air Pressure (Vacuum) Test.
  - 11. D 2000: Standard Classification System for Rubber Products in Automotive Applications.
  - 12. D 3212: Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.

- C. Caltrans Standard Specifications.

- 1. Section 51, Concrete Structures.
  - 2. Section 52, Reinforcement
  - 3. Section 65, Concrete Pipe
  - 4. Section 70, Miscellaneous Drainage Facilities
  - 5. Section 72, Slope Protection
  - 6. Section 75, Miscellaneous Metal

7. Section 90, Concrete

**1.05 DEFINITIONS**

- A. AASHTO: American Association of State Highway and Transportation Officials.
- B. ASTM: American Society for Testing Materials.
- C. AWWA: American Water Works Association.
- D. HDPE: High Density Polyethylene.
- E. PE: Polyethylene.
- F. RCB: Reinforced concrete box.
- G. RCP: Reinforced concrete pipe.
- H. NPS: Nominal pipe size.
- I. Design Head: The maximum differential head that will be applied on the gate under worst case conditions, measured from the gate invert.
- J. Seating Head: Head applied on a wall mounted gate, in the direction that pushes the gate against the wall it is installed on.
- K. Unseating Head: Head applied on a wall mounted gate in the direction pulling the gate away from the wall it is installed on.
- L. Operating Head: The highest differential head that is to be applied on the gate when it needs to be operated, measured from the gate invert.

**1.06 SUBMITTALS**

- A. Follow submittal procedure outlined in Section 2.5 - General Conditions.
- B. Product Data Shop Drawings for the following:
  - 1. Piping materials and fittings.
  - 2. Joint sealants.
  - 3. Precast concrete manholes including frames and covers.
- C. Design Mix Reports and Calculations: For each class of cast in place concrete.
- D. Field Test Reports: Indicate and interpret test results for compliance with performance.
- E. Installation, Operation, and Maintenance Manual: The sluice gate manufacturer shall provide a manual containing the instructions for installation, operation and maintenance of the sluice gates. The manual shall also contain the detailed information on the terms of the 5-year warranty on the products.

## **1.07 DELIVERY, STORAGE AND HANDLING**

- A. Do not store plastic pipe and fittings in direct sunlight. Cover pipes in unit packages. Protect the bell end of pipes from damage. Support unit packages with racks of dunnage to prevent damage and bending. Take measures to ensure the weight of the upper units does not cause deformation to pipes in the lower units whenever the unit packages are stacked. Do not store pipes adjacent to heat sources. Do not allow pipes to overhang vehicles or storage areas unsupported for more than 3 feet.
- B. Store pipes in a way that protects gaskets from the weather.
- C. Protect pipe, fittings, and seals from dirt and damage.
- D. Cover pipes to provide temporary sun block protection. Provide adequate air circulation around the covered pipes to reduce excess heat accumulation. Protect gaskets from exposure to heat, ozone, grease, and sunlight for any time period exceeding 48 hours. Do not store gaskets near electrical or exhaust heat sources.
- E. The Owner rejects pipes with cracked or split gaskets.
- F. Handle precast concrete pipe, manholes and other precast structures according to manufacturer's written instructions.
- G. Protect imported bedding and backfill material from contamination by other materials.

## **PART 2 - PRODUCTS**

### **2.01 PIPING MATERIALS FOR GRAVITY FLOW**

- A. Circular Reinforced Concrete Pipe (RCP): Caltrans Standard Specification Section 65-2.02C(2) Class III.
- B. Reinforced Concrete Box (RCB): Caltrans Standard Specification Section 51 and 52.
- C. Designated by Class, rubber gasketed joints, Type II or V cement
  - 1. Rubber Gasketed Joints: Caltrans Standard Specification Section 65-2.02F
  - 2. Special Pipe Couplings: Portland cement collar as indicated

### **2.02 MANHOLES STRUCTURES**

- A. General: Size, shape, configuration, depth, etc. of structures, weirs, frames, and covers shall be as indicated. Shop drawings of structure and weirs to include signed/stamped structural calculations by a licensed structural engineer.
- B. Portland Cement Concrete and Reinforcement: Section 03 3010
- C. Precast Portion: ASTM C 478. Rate for AASHTO H20 loading in traffic areas.
- D. Frames and Covers: As indicated and in accordance with Caltrans Standard Specification Section 75-2.02B.
- E. Steps: No steps shall be placed in manholes. Steps shall be placed in flow control structures wherever indicated.

- F. Provide bolted manhole covers where indicated.

## **2.03 PRECAST REINFORCED CONCRETE BOX CULVERTS**

- A. Precast reinforced concrete box culverts: Design requirements per 2018 Caltrans Revised Standard Plans RSP 83A and 83B.

## **2.04 JOINT SEALANT FOR STRUCTURES AND MANHOLES**

- A. Mortar: Caltrans Standard Specification Section 51-1.02F.
  - 1. Use to seal around pipes at connections to structures and manholes. Also use to seal joints between precast sections of structures and manholes.
- B. Gaskets: Preformed flexible rubber or plastic gasket.
  - 1. Rubber Gaskets: ASTM C443.
  - 2. Plastic Gaskets: Federal Specification SS-S-00210 (GSA-FSS), Type I, Rope Form; or alternate standard which may exist. Acceptable material is "Ram-Nek," as manufactured by the K. T. Snyder Company (Houston TX), or equal.
- C. Nonshrink Cementitious Grout (Nonshrink Grout)
  - 1. Nonshrink grouts shall meet or exceed the requirements of ASTM C1107 Grades B or C and CRD-C 621. Grouts shall be Portland cement based, contain a pre-proportioned blend of selected aggregates and shrinkage compensating agents and shall require only the addition of water. Nonshrink grouts shall not contain expansive cement or metallic particles. The grouts shall exhibit no shrinkage when tested in conformity with ASTM C827.
    - a. General purpose nonshrink grout shall conform to the standards stated above and shall be SikaGrout 212 by Sika Corp.; Set Grout by Master Builders, Inc.; Gilco Construction Grout by Gifford Hill & Co.; Euco NS by The Euclid Chemical Co.; NBEC Grout by U. S. Grout Corp. or equal.
    - b. Flowable (Precision) nonshrink grout shall conform to the standards stated above and shall be Masterflow 928 by Master Builders, Inc.; Hi-Flow Grout by the Euclid Chemical Co.; SikaGrout 212 by Sika Corp.; Supreme Grout by Gifford Hill & Co.; Five Star Grout by U. S. Grout Corp. or equal.

## **2.05 PIPE TO STRUCTURE CONNECTOR/SEAL**

- A. A flexible pipe to manhole connector shall be used for all pipe penetrations to pre-cast and/or cast-in-place concrete structures.
- B. The seal shall provide a flexible, positive, watertight connection between pipe and concrete structures. The connector shall assure that a seal is made between (1) the connector and the structure wall, and (2) between the connector and the pipe. The seal between the connector and the manhole wall shall be made by casting the connector integrally with the structure wall during the manufacturing process in such a manner that it will not pull out during coupling. The seal between connector and pipe will be made by way of a stainless steel take down band compressing the gasket against the outside diameter of the pipe.
- C. The connector shall be molded from materials whose physical/chemical properties meet or exceed the physical/chemical resistant properties outlined in ASTM C923. The

connector and stainless-steel hardware shall meet or exceed the performance requirements proscribed in ASTM C923.

- D. The connector shall be of size specifically designed for the pipe material being used and shall be installed in accordance with recommendations of the manufacturer.
- E. Connectors shall be Z-LOK or G3 connectors manufactured by A-LOK Products Inc. or approved equivalent.

## **2.06 STYROFOAM**

- A. Insulation board shall be molded closed cell in compliance with ASTM E 2430 and ASTM C 578 Type I.
- B. Insulation board shall be formed by steam expansion of polystyrene resin beads in a closed mold.
- C. The insulation board shall be of uniform density and have essentially closed cells. All insulation boards shall be molded from modified grade, expandable polystyrene beads listed in accordance with the requirements of the building code having jurisdiction.
- D. Defects - Insulation board shall have no defects that will adversely affect its service qualities. It shall be of uniform texture and free from foreign inclusions, broken edges or corners, slits or objectionable odors.
- E. Crushing and Depressions - Insulation board shall have no crushed or depressed areas on any surface exceeding 1.6 mm (1/16 in) in depth on more than 5% of the total surface area.
- F. Insulation board shall meet the oxygen index, flammability and smoke development requirements provided here.  
Oxygen Index, Minimum 24.0%  
Flame Spread, Maximum 25.0  
Smoke Development, Maximum 450
- G. The boards shall be covered by third party certification of flame spread and smoke development requirements.

## **PART 3 - EXECUTION**

### **3.01 PIPE AND BOX INSTALLATION**

- A. General: Install pipe, fittings, and appurtenances utilizing best practices, manufacturer's instructions, and in accordance with, Caltrans Standard Specification Section 65-2.03 for reinforced concrete pipe.
- B. Pipe Depth and Trench Configuration: Conform to typical trench section(s) indicated.
- C. Excavation, Bedding, Backfill, and Compaction: Section 02 3100.
- D. Handling: Carefully handle during loading, hauling, unloading and placing operations to avoid breakage or damage. Use strap type slings for lifting and placing; no chains or hooks will be permitted. Comply with the manufacturer's recommendations.

- E. Laying: Before lowering pipe into the trench, remove all stakes, debris, loose rock and other hard materials from the bottom of the trench. Lay accurately in conformance with lines and grades indicated. Start laying the pipeline at the low end and proceed upstream. Lay bell and spigot pipe with the bell end facing upstream. Lay pipe on a bed prepared by handwork, dug true to grade. Furnish firm bearing for pipe throughout its entire length with bell holes provided at the ends of each pipe length of sufficient size to permit making up the particular type of joint being used. Adjust pipe to line and grade by scraping away or filling and tamping material under the body of the pipe for the entire pipe length and not by blocking or wedging. After final positioning, hold pipe in place in trench with backfill material placed equally on both sides of the pipe at as many locations as required to hold the pipe section in place.
- F. Field Testing: To assure watertightness, field performance verification shall be accomplished by testing in accordance with ASTM F2487. Appropriate safety precautions must be used when field-testing any pipe material.
- G. Curved Alignment: When necessary to conform to the alignment specifically indicated, lay pipe on a curved alignment by means of asymmetrical closure of joints or bending of the pipe barrel. Use shorter lengths of pipe than the standard length if necessary to achieve curvature specified. Do not exceed the recommendations of the pipe manufacture for deflections at the joints or pipe bending.
- H. Closure: Close open ends of pipes and appurtenance at the end of each day's work or when work is not in progress.

**3.02 INSTALLATION OF JUNCTION STRUCTURES, MANHOLES, CONCRETE COLLARS, ETC.**

- A. Excavation, Bedding, Backfill, and Compaction: Section 31 21 00, Utility Trenching and Backfill.
- B. Poured in Place Structures: Install as indicated and Caltrans Standard Specification Section 51.
  - 1. Shape bottoms to convey flows as indicated.
- C. Precast Structures: Install as indicated.
  - 1. Seal all joints and pipe entrances and exits.
  - 2. Place concrete in bottom and shape to convey flows as indicated.

**END OF SECTION**



# ATTACHMENT A

GEOTECHNICAL RECOMMENDATIONS REPORT

FOR REFERENCE ONLY

GEOTECHNICAL RECOMMENDATIONS REPORT  
PUMPKIN FIESTA PHASE 1 STORM DRAIN  
CUPERTINO, CALIFORNIA

by  
Haley & Aldrich, Inc.  
San Jose, California

for  
BKF Engineers  
San Jose, California

File No. 0205037-000  
May 2022





HALEY & ALDRICH, INC.  
2107 N. 1<sup>st</sup> Street  
Suite 380  
San Jose, CA 95131  
408.961.4805

11 May 2022  
File No. 0205037-000

BKF Engineers  
1730 N. First Street, Suite 600  
San Jose, California 95112

Attention: Mr. Sravan Paladugu

Subject: Geotechnical Recommendations Report  
Pumpkin Fiesta Phase 1 Storm Drain  
Cupertino, California

Dear Mr. Paladugu:

This letter presents Haley & Aldrich, Inc.'s geotechnical recommendations for the proposed storm drain utility line replacement project in Festival Court between Festival Drive and September Drive, September Drive between Festival Court and Fiesta Lane, and Festival Lane between September Drive and November Drive, in Cupertino, California ("Site"). Our geotechnical recommendations are based on our review of the preliminary drawings and our research and previous experiences with similar projects performed nearby the proposed project Site.

Based on our review of subsurface conditions and understanding of improvements, including replacement of storm drain lines using open cut trenching, the project is geotechnically feasible.

We appreciate the opportunity to provide our services to you on this project. If you have any questions, please call Catherine Ellis at 925.949.4407.

Sincerely yours,  
HALEY & ALDRICH, INC.

A handwritten signature in blue ink, reading "Jennifer Boyer".

Jennifer Boyer  
Senior Project Manager

A handwritten signature in blue ink, reading "Catherine H. Ellis".

Catherine H. Ellis, P.E., G.E. (CA)  
Senior Associate, Geotechnical Engineer

Enclosures

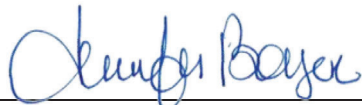
\\haleyaldrich.com\share\CF\Projects\0205037\Deliverables\Geotechnical\_Info\Reports\2022\_0511\_HAI\_Cupertino\_GeotechReport\_vF.docx

**SIGNATURE PAGE FOR**

**GEOTECHNICAL RECOMMENDATIONS REPORT  
PUMPKIN FIESTA PHASE 1 STORM DRAIN  
CUPERTINO, CALIFORNIA**

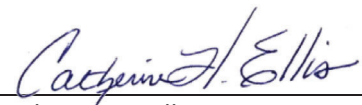
**PREPARED FOR  
BKF ENGINEERS  
SAN JOSE, CALIFORNIA**

PREPARED BY:



Jennifer Boyer  
Senior Project Manager  
Haley & Aldrich, Inc.

REVIEWED AND APPROVED BY:



Catherine H. Ellis, PE, GE  
Senior Associate, Geotechnical Engineer  
Haley & Aldrich, Inc.



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## List of Abbreviations

Abbreviation	Definition
ASTM	American Society for Testing Materials
bgs	below ground surface
BKF	BKF Engineers
Cal/OSHA	California Occupational Safety and Health Act
CDF	Controlled Density Fill
CGS	California Geological Survey
CIP	cast iron pipe
City	City of Cupertino
Haley & Aldrich	Haley & Aldrich, Inc.
MCE	Maximum Considered Earthquake
NAVD88	North American Vertical Datum of 1988
pcf	pounds per cubic foot
$PGA_M$	peak ground acceleration
psf	pounds per square foot
PSHA	probabilistic seismic hazard analysis
psi	pounds per square inch
Qpf	Pleistocene Alluvial Fan Deposits
USGS	United States Geological Survey

# 1. Introduction

Haley & Aldrich, Inc.'s (Haley & Aldrich's) prepared this "Geotechnical Recommendations Report" on behalf of BKF Engineers (BKF). Our understanding of the proposed storm drain utility line replacement project is based on our discussions with BKF and a review of the preliminary layout plan (BKF, 2022). Based on our discussions and review, the proposed Phase 1 storm drain utility line replacement project (Project) includes the following:

- Replacing approximately 42 linear feet of the existing 42-inch-diameter, cast-in-place (CIP) concrete pipes with 72-inch-diameter concrete pipe between STA 8+83.28 to STA 9+29.17 on Festival Drive on northeast corner;
- Replacing approximately 192 linear feet of the existing 36-inch-diameter, CIP concrete pipes with 60-inch-diameter concrete pipe between STA 7+20 to STA 8+83.28 on Festival Drive east of Fiesta Court;
- Replacing approximately 246 linear feet of the existing 18-inch-diameter, CIP concrete pipes with 36-inch-diameter concrete pipe between STA 4+37.34 to STA 6+87.40 on September Drive between Fiesta Court and Fiesta Lane; and
- Replacing approximately two connected segments of 221 and 109 linear feet of the existing 18-inch-diameter, CIP concrete pipes with 36-inch-diameter concrete pipe between STA 4+37.34 to STA 1+00.00 on Fiesta Lane between September Drive and November Drive

The proposed project Site is presented in Figure 1, Project Locus; the project alignment is presented on Figure 2, Site Plan.

The depth of the open trench excavation for replacing the storm drain line is between about 6 and 11 feet below ground surface (bgs). Trenchless methods are not planned. New pipes will be connected to new or existing manholes.

According to our preliminary review of the project alignment, the existing ground surface from Festival Drive to November Drive is approximately between 309 to 325 based on NAVD88.

If the project differs significantly from the scope described above, we should be consulted to review our recommendations and their applicability.

## 2. Scope of Services

Haley & Aldrich completed the following tasks as outlined in our revised proposal dated 10 February 2022:

- Reviewed readily available geotechnical and geologic reports pertaining to the project Site, including California Geologic Survey (CGS) published maps and reports available on the California State Water Resources Control Board website GeoTracker;
- Prepared this geotechnical draft report presenting our conclusions and recommendations regarding:
  - Site soil and groundwater conditions in the general vicinity of the Site; based on publicly available reports;
  - Site seismicity and seismic hazards, including potential from seismic events;
  - Foundation design criteria for the new underground substructures such as manholes and standpipes (if any), including the design criteria for vertical and lateral support of the substructures;
  - An uplift evaluation of the substructures and recommendations;
  - Temporary shoring design parameters and evaluation of the open cut stability for the cut and cover trench constructions;
  - Pavement design recommendations;
  - Site grading, including criteria for fill quality and compaction; and
  - Construction considerations (as appropriate).

### **3. Local Geology**

According to the geologic information found in the “Geologic map of the Cupertino and San Jose West quadrangles, Santa Clara and Santa Cruz Counties, California”(Dibblee, 2007), the surficial sediments are mapped as alluvial fan deposits (Qa.1) that include undifferentiated alluvial sand, fine-grained silt, and gravel.

According to the Federal Emergency Management Agency (FEMA), the project Site is in unmapped zone D and is outside of the flood zone X and the 100- and 500-year flood zone.

## **4. Subsurface Conditions**

Our understanding of subsurface conditions along the project alignment is primarily based on our geologic research and a review of the publicly available reports previously prepared for the projects near the proposed project alignment. A Site-specific field exploration program was not completed for this project.

Based on a review of the readily available geologic and environmental studies in the area, we anticipate that the subsurface conditions below surface grade will consist of silt, gravelly sand, and sand deposits with a potential for clays in the upper 50 feet of soil in the near vicinity of the Site (Weiss Associates, February 1995 and Langan, 2016).

### **4.1 GROUNDWATER**

Based on our review of publicly available information, including the “Seismic Hazard Zone Report for the Cupertino 7.5-Minute Quadrangle” (CGS, 2002a), the historical groundwater in the area has been documented at depths greater than 50 feet bgs (CGS, 2002b).

## 5. Seismic Hazards

The entire San Francisco Bay Area is seismically dominated by the presence of the active San Andreas Fault System. In the theory of plate tectonics, the San Andreas Fault System is the boundary between the northward moving Pacific Plate (west of the fault) and the southward moving North American Plate (east of the fault). In the Bay Area, this movement is distributed across a complex system of strike-slip, right-lateral parallel, and subparallel faults, which include the San Andreas, Hayward, Calaveras, Hayward-Rodgers, and Monte Vista-Shannon, among others.

During a major earthquake, strong seismic shaking has the potential to occur at the Site, as is typical throughout the Bay Area and as experienced during the 1989 Loma Prieta event. Shaking during an earthquake can result in ground failure such as that associated with fault surface rupture, soil liquefaction, lateral spreading, and cyclic densification. Our assessments of these potential seismic hazards are presented in the following sections.

### 5.1 SITE SEISMICITY

We evaluated the Site seismicity by means of a probabilistic seismic hazard analysis using the United States Geological Survey (USGS) Unified Hazard Tool website. The USGS Unified Hazard Tool includes a seismic source contribution deaggregation utility, which utilizes the USGS Conterminous U.S. 2014 (updated; v4.2.0) hazard model. A Site Class D soil profile was selected for this analysis, based on subsurface data presented in an existing report close to the project (Weiss Associates, 1995 and Langan, 2018). The deaggregation analysis was performed for the Maximum Considered Earthquake (MCE), defined as an event with a 2 percent probability of exceedance in 50 years (return period of approximately 2,500 years). The MCE event at this Site is expected to produce a seismic event with a mean magnitude of 7.87.

The risk-based site-modified peak ground acceleration ( $PGA_M$ ) for the Site is 1.019 g. This value was computed based on procedures outlined in ASCE 7-16 and is based on a Site Class D soil profile.

### 5.2 LIQUEFACTION

Liquefaction is a phenomenon caused by a rapid increase in pore water pressure that reduces the effective stress between soil particles, resulting in the sudden loss of shear strength in the soil. Granular soils, which rely on interparticle friction for strength, are susceptible to liquefaction until the excess pore pressures can dissipate. Sand boils and flows observed at the ground surface after an earthquake are the result of excess pore pressures dissipating upwards, carrying soil particles with the draining water. In general, loose, saturated sand soils with low silt and clay contents are the most susceptible to liquefaction. Silty soils with low plasticity are moderately susceptible to liquefaction under relatively higher levels of ground shaking. For any soil type, the soil must be saturated for liquefaction to occur.

According to the “Seismic Hazard Zone Report for the Cupertino 7.5-Minute Quadrangle” (CGS, 2002a), the project alignment is not located within a potential liquefaction hazard zone (LHZ).

### **5.3 CYCLIC DENSIFICATION**

Seismically induced compaction or densification of non-saturated granular soil (such as sand above the groundwater table) due to earthquake vibrations can result in settlement of the ground surface. Based on our review of the previous subsurface explorations, we conclude that the soils at the Site are predominantly composed of gravelly sand, sand, sandy silt, and silty sand soil to a depth of about 50 feet bgs. The information available does not include density information, which is a factor in determining susceptibility for cyclic densification. As such, the potential for cyclic densification at the Site cannot be evaluated at this time for this project but based on broad experience in the area, it is anticipated to be low.

### **5.4 FAULT SURFACE RUPTURE**

Historically, ground surface displacements related to fault rupture closely follow the trace of geologically young faults. Based on the seismic hazard zone maps accessed through the CGS Earthquake Zones of Required Investigations Maps prepared for Cupertino 7.5-Minute Quadrangle in Santa Clara County, the Site is not within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act (CGS, 2002c). Based on this information, we conclude the risk of surface faulting and secondary ground failure to be very low.

### **5.5 TSUNAMI**

According to the data published by CGS, the project alignments are located within the Tsunami Hazard Area Map of County of Santa Clara County (CGS 2021), and the Project alignments are not located within the tsunami inundation limits. We therefore judge the potential for a seismically induced wave to impact the Site to be very low.

## 6. Recommendations

Our review of the publicly available subsurface explorations, indicate that subsurface soils near the project alignment consist predominantly of undifferentiated alluvial fan deposits that contain silts, sands, and gravel layers with the potential for clays. It is expected that conventional open cut trench methods of installation will be successful. Open cut trench excavations will require temporary shoring for support, and internal bracing is expected to be required, given the anticipated trench depths and widths. The proposed storm drain lines will cross and approach several existing buried utilities, and maintenance of the integrity and function of the existing pipelines and utilities must be considered during the design and construction of the pipeline. Shoring and backfilling excavations with respect to settlement of adjacent improvements will be key considerations for design and construction.

### 6.1 EARTHWORK

Earthwork for this project will primarily consist of excavating and backfilling trenches. Earthwork should be completed in conformance with City of Cupertino (City) Standard Details. The following sections provide a discussion of key earthwork considerations.

#### 6.1.1 Subgrade Preparation

Excavations for pipe subgrade should be firm, free of debris, loose soil, or mud, and free of standing water prior to concrete or pipe placement. To reduce disturbance, construction equipment should be kept off the trench subgrade. The Geotechnical Engineer should review the soil conditions encountered at the bottom of the trench during construction.

Exposed subgrade soils are typically expected to consist of silty and sandy soils with some gravels and a potential for clays. These soils should not be left exposed for an extended period of time or drying may occur. Where buried structures along the alignment are planned for construction during the wet season, consideration should be given to placing a 2-inch mud slab or 6 inches of aggregate subbase over the subgrade to protect it from saturation.

Based on our review of the publicly available reports, some locations may expose softer or loose materials at the intended pipeline subgrade elevations. If soft or loose subgrade material is encountered, we recommend that subgrade stabilization be carried out. The need for subgrade stabilization should be determined in the field by the Geotechnical Engineer, including the actual depth of overexcavation. Stabilization at the bottom of the trench excavation may be “bridged” using a combination of Mirafi 600X (or equivalent) geotextile stabilization fabric covered by a stabilization material with a minimum thickness of 2 feet. The ends of the geotextile fabric should then be overlapped on top of the stabilization material for a minimum distance of 2 feet to provide continuity of the fabric and prevent the potential migration of fine-grained soil through the gaps. Stabilization material should be a clean, angular, reasonably well-graded mixture of crushed rock free of cleavage planes. The stabilization material should conform to the following grading and quality requirements.

**Table 1 – Stabilization of Materials**

Sieve Size (Inches)	Percentage Passing
6	100
2	0-50
$\frac{3}{4}$	0-10
Durability Index	
40	Minimum

The Geotechnical Engineer should approve the source of imported stabilization material prior to importing the materials to the Site.

After the geotextile stabilization fabric has been placed on the base of the excavation surface, the bridging material should be track-walked into place over the fabric. Rubber-tired equipment should not be permitted to traverse pumping areas until the placement of the stabilization material has been completed.

If overexcavations reach firm soil but there are concerns about disturbance from wet weather or construction activities, a layer of compacted drain rock may be used as an alternative to stabilization material. Drain rock should be 1½ inches by ¾ inch nominal size coarse aggregate conforming to Section 90-1.02C(2), 90-1.02C(4)(a) and 90-1.02C(4)(b) of 2018 Caltrans Standard Specifications. Geotextiles fabric should be wrapped around the drain rock. The drain rock should have a minimum thickness of 6 inches. The required thickness of this layer will depend on the actual conditions encountered at each location and should be determined by the Geotechnical Engineer in the field.

If placed, compaction of the stabilization materials should be accomplished by using a pneumatic tamper or vibratory plate compactor, either manually operated or attached to the end of an excavator boom. The Contractor should construct a test section in the trench, under the observation of the Geotechnical Engineer, to verify that the equipment and methods will produce uniform compaction of the stabilization material. The compaction methods developed in the test section should be used thereafter throughout the project.

## **6.1.2 Fill Materials and Compaction**

### **6.1.2.1 Trench Backfill**

We recommend that fill placed at the project Site meet the requirements for either: 1) general on-site fill, 2) Caltrans Class 2 aggregate base, or 3) Controlled Density Backfill. All the backfill material must be approved by the City's Engineers before proceeding in accordance with City Standard Detail 4-24. Trench backfill provisions are provided in separate sections according to City Standard Details.

Recommendations for fill materials are provided as follows:

- **General on-Site fill:** General on-Site fill derived from trench excavations should be non-hazardous, free of organic matter, contain no rocks or lumps greater than 3 inches in greatest dimension, and be approved by the Geotechnical Engineer and City's Engineer. General on-Site fill may be used for backfilling trenches and excavations at depths greater than 1 foot below the finished surface elevations. Fill material within the 6 inches of the finished subgrade or 1 foot of

the finished surfaces shall be Class 1 Aggregate Base that meets the requirements of Caltrans Standard Specifications Section 26. Materials shall conform to provisions of Section 4 of City Standard Details – Existing Street Trench Restoration. General on-Site fill should be placed in horizontal lifts not exceeding 6 inches in uncompacted thickness and compacted to at least 95 percent relative compaction. Clayey soils should be moisture-conditioned to at least 2 percent above the optimum moisture content. Sandy and silty soils should be moisture-conditioned to, at, or above the optimum moisture content.

- **Class 2 Aggregate Base:** Aggregate base material that meets the requirements of Caltrans Standard Specifications Section 26 for Class 2 aggregate base material should be used where specified beneath asphalt concrete pavements. The aggregate base should be placed in horizontal lifts not exceeding 6 inches in uncompacted thickness, moisture-conditioned to at or above the optimum moisture content and compacted to at least 95 percent relative compaction.
- **Controlled Density Fill (CDF):** CDF can be used as trench backfill as well as around and below utility crossings. CDF shall consist of a fluid, workable mixture of aggregate, cement, and water. CDF may be used in lieu of sand and granular material and shall be considered as non-structural backfill material. The CDF should have a minimum unconfined compressive strength of 50 pounds per square inch (psi) and a maximum unconfined compressive strength of 150 psi. Cement shall meet the requirement of the ASTM C-150, and the coarse aggregate portion of the CDF shall conform to requirements of Table below:

**Table 2 – Aggregate to be Used in Preparation of the CDF**

Sieve Size	Percentage Passing
¾ inch	100
3/8 inch	40
No. 200*	10

**Note:** Aggregate shall consist of commercial quality concrete sand

#### 6.1.2.2 Bedding

The pipe bedding includes that portion of the pipe zone backfill between the bottom of the trench excavation and the bottom of the pipe. The pipe bedding has an important influence on the distribution of the reaction against the bottom of the pipeline and thus affects the support strength of the pipe, as installed. When properly designed and constructed, the bedding material acts to uniformly distribute the pipeline and overlying soil loads along the base of the pipe.

Bedding material should be imported and shall consist of Class 1 Type “A” in conformance with Caltrans Standard Specifications Section 68-1, placed, and compacted in accordance with City requirements; specifically, bedding material shall consist of Select Backfill Material, in conformance with City Standard Details – 4-24. A 6-inch-thick layer of bedding material should be placed directly beneath the pipe and a minimum 12-inch-thick layer of bedding material should be placed directly above the pipe.

### 6.1.2.3 *Placing and Compacting Backfill*

As required by City Standard Details, all backfill materials should be compacted to certain minimum relative compaction percentages in accordance with ASTM D1557, D2922, D2216, and D3017. Relative compaction is the ratio of the in-place dry density of backfill to the maximum dry density determined in the laboratory.

### 6.1.3 **Abandonment of Existing Pipelines**

Haley & Aldrich requires that the existing pipeline to be abandoned shall be cut clear from the main pipeline to be left in service. Nonmetallic pipelines shall be filled with sand and plugged at the end with 6 inches of Portland cement concrete at each required cut.

## 6.2 **TRENCH CONSTRUCTION**

The construction of the trench sections is anticipated to include excavations on the order of 6 to 11 feet bgs. We anticipate that excavation of the trenches can be readily made with conventional excavation equipment. Trench walls cut through sandy soils and less than 2 feet in height should be capable of maintaining stability with vertical cuts and minimal bracing, provided proper moisture content in the soil is maintained. Minor caving and raveling should be expected if and where granular interbedded layers are encountered. Trench walls cut through clayey soils and less than 4 feet in height should be capable of maintaining stability with vertical cuts and minimal bracing, provided proper moisture content in the soil is maintained.

Excavations should be constructed in accordance with California Occupational Safety and Health Act (Cal/OSHA) safety standards and local jurisdictions. Safety in and around the Site is the responsibility of the general contractor. In accordance with Cal/OSHA requirements, any excavation deeper than 4 feet where a person will enter will need to be shored, stepped, or sloped at a safe inclination. Excavations should be located so that no structures, existing or new, are located above a plane projected 45 degrees upward from any point in the excavation, regardless of whether the trenches are shored or not.

If required by Site conditions, or at the discretion of the Contractor, trench shields (boxes) may be used in vertically cut trenches as an acceptable form of temporary shoring. The system would have to be designed such that no voids are left in the bedding and backfill material after the trench shield (box) is removed from the excavation. Compaction of the bedding material under the haunches of the pipe is critical for proper lateral support of the force main. If used, the capacity of the trench shield (box) system should be evaluated for compatibility with Site subsurface conditions by a Registered Engineer.

### 6.2.1 **Interlocking Sheet Piles**

The following recommendations pertain to design of interlocking sheet piles, as this shoring method is anticipated for use to support the trenches deeper than 11 feet, if required. Interlocking sheet piling is customarily driven in advance of the excavation operations. As the excavation proceeds, horizontal struts are placed against sheet pile walls at regular depths as the walls are exposed and until the final depth is reached. The Contractor should be required to preload the internal bracing using hydraulic jacks or other means as the excavation is deepened; this will limit the deflection of the sheeting. Once the backfilling has been completed, the struts and finally the sheet piles can be removed.

Steel sheet piling can be installed with either a vibratory driver or an impact hammer. Vibratory drivers are generally more effective in granular soils than in clay soils. A vibratory driver would probably produce smaller amplitude vibration effects on the adjacent pipeline and structures than an impact hammer and may provide better control of the sheet pile alignment with reduced noise levels. The type of driving equipment employed for sheet pile installation should be chosen and verified for drivability by the Contractor. The Contractor may encounter some difficulty during installation of the sheet piling through the stiff to very stiff lean clay layers. The Contractor should be prepared to modify the installation procedures and/or equipment to achieve the full penetration design depth.

In order to reduce deflection of the shoring system, we recommend that the excavation extend no more than 2 feet below required bracing levels until the internal braces such as struts and rakers have been placed. The struts should be removed as the backfilling progresses. Compaction of the backfill should continue during the shoring removal in order to minimize the potential creation of voids between trench walls and compacted trench backfill. If the Contractor elects to leave the sheet piling in place, we recommend that the top of the sheet piling be cutoff at least 5 feet below the finished grade. Alternatively, if the sheet piling is removed, the Contractor should immediately pressure grout to prevent settlement.

We understand that consideration is being given to using the sheet piling as a form so that concrete for each exterior structural wall can be poured directly against it. The advantage of this method is a reduced shoring footprint area. If this approach is used, we recommend that the sheet piling be permanently left in place to minimize post-construction settlement. As discussed above, if the Contractor elects to remove the sheet piling, voids around the perimeter of the structure formed by the extraction of sheet piling should immediately be pressure grouted. The pressure grouting will require careful monitoring by the Contractor so that grout injection pressures do not result in distress/damage to the permanent structural walls.

Based on our experience with similar projects, as well as published data (e.g., Goldberg et al., 1976, Clough and O'Rourke, 1991), indicate that settlement of the ground surface adjacent to the shoring commonly is about  $\frac{1}{4}$  to  $\frac{1}{2}$  percent of the excavation depth. For excavations of 15 feet deep, accounting for placement of utilities to be between 7 and 11 feet bgs, the expected settlement might be  $\frac{1}{2}$  to 1 inch, and lateral movement of the same order of magnitude also should be anticipated. As this level of movement is likely to induce distress in surface pavements, we recommend that the shoring design considers internal bracing or other active support methods to reduce maximum lateral movement to no greater than  $\frac{1}{2}$  inch at the ground surface. The project specifications should require restoration of pavements damaged by these movements to their preconstruction condition.

External shoring support, such as use of tiebacks, is not recommended, given the potential subsurface utility conflicts and construction challenges.

### **6.2.2 Temporary Shoring Earth Pressure Recommendations**

Design lateral earth pressures have been developed for designing trench shoring. The soil pressures depend on the actual soil conditions encountered, depth of excavation, shoring design and installation procedures, and the magnitude of any surcharge loads on the ground surface adjacent to the shoring system. Design lateral earth pressures recommended for shoring design are presented in Figure 3 for sand dominant subsurface conditions. The Contractor's Registered Civil or Structural Engineer should review the subsurface conditions and make an independent evaluation of the shoring earth pressure.

The structural components of the temporary shoring should generally be designed to limit deflections of the shoring to a maximum of ½ inch. However, if any structures or utilities are located immediately adjacent to the excavation, lower deflections may be required to minimize settlement and potential damage to these facilities.

## **6.3 UNDERGROUND STRUCTURES**

### **6.3.1 Bearing Support**

Underground structures are expected to include installation and/or repair of the manholes and standpipes. We anticipate that below-grade structures will rest primarily on gravelly or sandy soils that are anticipated to be suitable for support of the underground structure(s). Should loose sands or soft fine-grained materials be encountered at the proposed subgrade elevations, or if subgrade soils are disturbed during construction, it will be necessary to compact the soils at the bottom of the trench prior to placing the overlying structures. Since the weight of soil removed during excavation will be greater than or approximately equal to the weight of the new construction and backfill, we do not expect foundation bearing capacity to be a significant geotechnical design issue. Settlements due to foundation loads are expected to be elastic in nature and primarily occur during construction. Should loads greater than the weight of material excavated be imposed on the surface or subsurface soils, we should be contacted to evaluate the bearing capacity at the location of the proposed construction.

For the manholes and standpipes, a net allowable vertical bearing pressure of 2,000 pounds per square foot (psf) may be used. In-place densities of 120 pounds per cubic foot (pcf) may be assumed for existing soils and for soil backfill, for use in determining the weight of soil removed and of backfill placed.

### **6.3.2 Lateral Support**

Lateral loads may be resisted by a combination of passive pressure on the embedded vertical faces of the vaults or other buried improvements and friction between the bottoms of the buried improvements and the supporting soil. For passive resistance, we recommend using an equivalent fluid weight of 360 pcf for vaults or other buried improvements surrounded with properly placed fill as described later in this report. The upper foot of soil should be ignored unless it is confined by a concrete slab or pavement. Frictional resistance should be computed using a base friction coefficient of 0.35. The passive pressure and base friction coefficient values are unfactored and do not include lateral resistance contributions from the adjacent pavement.

The manholes (if required) should be designed to resist static lateral earth pressures, lateral pressures cause by seismic loading, and additional surcharge pressures associated with vehicular traffic (if appropriate). We assume that the walls of the manholes will not tolerate deflection and should therefore be designed for at-rest lateral earth pressures calculated as an equivalent fluid weight (triangular distribution) of 60 pcf. If the walls of the manholes are permitted to deflect, active lateral earth pressures may be used, equal to an equivalent fluid weight of 40 pcf (triangular distribution). Seismic lateral earth pressure equals to 35H psf (where H is the height of the wall in feet) should be applied in addition to static pressures. A traffic surcharge pressure applied as a uniform (rectangular distribution) lateral pressure of 100 psf shall also be applied to the entire vertical face of the exterior concrete wall, where vehicular loads are present.

### 6.3.3 Uplift

Based on the anticipated groundwater elevations to be deeper than 50 feet bgs within the alignment, it is not anticipated that buoyant forces will generate uplift pressures on the structures as proposed.

### 6.3.4 Seismic Design

For seismic design in accordance with the provisions of the 2019 California Building Code and ASCE 7-16, we recommend using the seismic design parameters presented in the following table.

**Table 3 -Seismic Design Parameters for Buried Improvements**

Seismic Parameter	Design Value
Site Class (ASCE 7-16 Table 1613.5.2)	D
Peak Ground Acceleration, PGA	0.926 g
Site Amplification Factor for PGA, $F_{PGA}$	1.1
Site-Modified Peak Ground Acceleration, $PGA_M$	1.019 g

## 6.4 SURFACE DRAINAGE AND EROSION CONTROL

Adequate surface drainage shall be provided throughout the project alignment to prevent the surface runoff from accumulating between the construction zone and drainage path and entering the open excavations, including cut and cover trench sections and trenchless section access shafts. Surface water should not be allowed to collect along edges of pavements. Surface water should be directed away from exposed soil slopes and trench walls to prevent instability of the open cuts.

Sediment trap and silt liners shall be provided adequately throughout the project alignment to prevent accumulation of the washout and finer deposits on the pavement surface and at the storm drainage systems.

## 6.5 FLEXIBLE PAVEMENT DESIGN

Trench paving shall be performed in conformance with City Standard Construction Details, File No.SP-248. Permanent trench surfacing shall include a hot-mix asphalt concrete section equal in thickness to that of the existing adjacent pavement section, with a minimum thickness of no less than 4 inches or equal to existing layer depths (whichever is greater). The asphalt concrete section shall extend a distance of 12 inches laterally beyond the edge of the trench on each side. The asphalt concrete layer shall be underlain by a minimum layer of 12-inch-thick Caltrans Class 2 Aggregate Base, compacted to at least 95 percent relative compaction, with a layer thickness equal to that of the existing adjacent aggregate base section or 12 inches, whichever thickness is greater.

Based on the City Standard Details, asphalt concrete material and aggregate base material shall conform to requirements stated in Sections 39 and 26 of the CalTrans Standard Specifications, respectively.

## 7. Limitations

This report was prepared for specific application to the proposed storm drain line replacement design and construction as understood at this time. In the event that changes in the nature, design, or location of the project are planned, the conclusions and recommendations contained in this report should not be considered valid, unless the changes are reviewed by Haley & Aldrich and the conclusions of this report modified or verified in writing.

The geotechnical analyses and recommendations are based, in part, upon the data obtained from the referenced subsurface explorations. The nature and extent of variations between explorations may not become evident until construction. If variations appear at that time, it may be necessary to re-evaluate the recommendations of this report.

This report was prepared for the exclusive use of the City of Cupertino and BKF Engineers and their subconsultants in connection with the design and construction of the proposed sewer line replacement project in Cupertino, California. There are no intended beneficiaries other than the City of Cupertino and BKF Engineers and their subconsultants. Haley & Aldrich shall owe no duty whatsoever to any other person or entity on account of the Agreement or the report. Use of this report by any person or entity other than the City of Cupertino and BKF and their subconsultants for any purpose whatsoever is expressly forbidden unless such other person or entity obtains written authorization from the City of Cupertino and from Haley & Aldrich. Use of this report by such other person or entity without the written authorization of the City of Cupertino and Haley & Aldrich shall be at such other person's or entity's sole risk and shall be without legal exposure or liability to Haley & Aldrich.

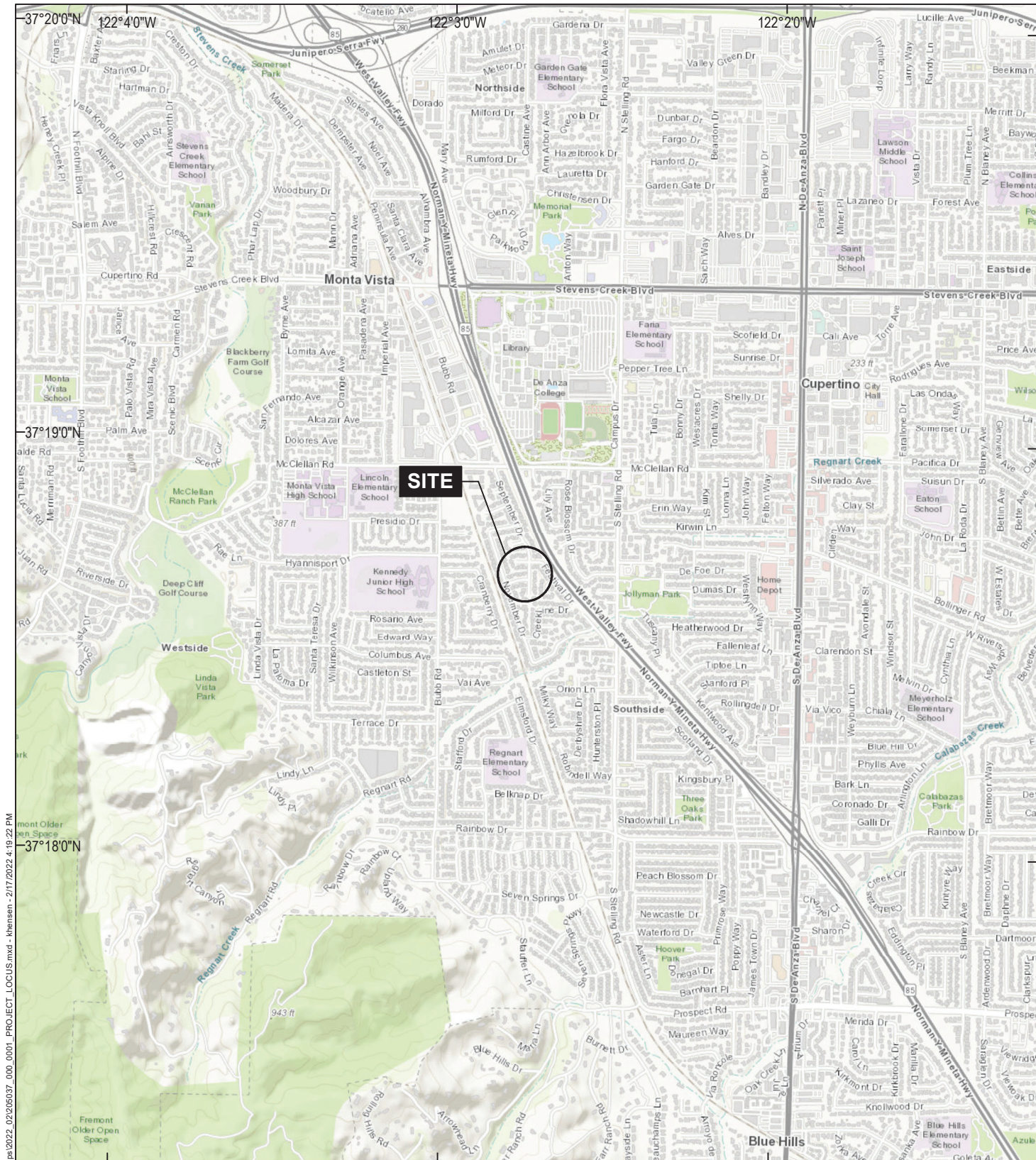
## References

1. American Society of Civil Engineers, 2007. *Standard Test Methods for Laboratory Compaction Characteristic for soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 KN-m/m<sup>3</sup>): ASTM D1557.*
2. American Society Testing and Materials, 2017. *Minimum Design loads and associated criteria for building and other structure: ASCE/SEI 7-16.*
3. BKF Engineers, 2022. *Pumpkin-Fiesta Storm Drain Project, City of Cupertino, Draft 60% Drawing Submittal Drawings*, 3 February.
4. California Building Standards Commission, 2019. *California Building Code, 2019, California Code of Regulations, Title 24, Part 2, Vol.1.* 2 July.
5. California Department of Conservation, California Geological Survey, 2002. *Seismic Hazard Zone Report, for the Cupertino 7.5-Minute Quadrangle, Santa Clara County, California.*
6. California Department of Transportation, 2018. *Standard Specifications.*
7. California Geological Survey, 2002a. *State of California Seismic Hazard Zones, Cupertino Quadrangle.*
8. California Geological Survey, 2002b. *Earthquake Zones of Required Investigation, Cupertino Quadrangle.* 23 September.
9. California Geological Survey, 2002c. *Earthquake Zones of Required Investigation, Cupertino Quadrangle.* 23 September.
10. California Geological Survey, 2009. Information Warehouse, *Tsunami Inundation Maps for Emergency Planning (2009)*, <https://gis.conservation.ca.gov/server/rest/services/CGS/tsunami/MapServer>.
11. California Geological Survey, 2021. *Tsunami Hazard Area Map, County of Santa Clara.* 8 July.
12. City of Cupertino Standard Details, Department of Public Works, 1999.
13. Clough, G.W and O'Rourke, T.D., *Construction Induced Movements of In-situ Walls* in "Design and performance of earth retaining structures" Lambe P.C. and Hansen, L.A (Eds.), Geotechnical Special Publication No. 25, ASCE, pp. 439-470.
14. Dibblee, T.W., 2007. *Geologic map of the Cupertino and San Jose West quadrangles, Santa Clara and Santa Cruz Counties, California* published by the Dibble Geologic Foundation, Dibblee Foundation Map DF-351; scale 1:24,000.
15. Federal Emergency Management Act, *National Flood Hazard Layer (NFHL) Viewer*, City of Cupertino 06085C, 06085C-2292.
16. Goldberg, D.T., W.E. Jaworski and M.D. Gordon, 1976. *Lateral Support System and Underpinning* Vol. 1, Design and Construction, FHWA Publication RD-75-128.

17. [Langan, 2018. \*Geotechnical Investigation, Vallco Town Center, Cupertino, California\* under file number 770633101. 27 March.](#)
18. United State Geological Survey, Unified Hazard Tool:  
<https://earthquake.usgs.gov/hazards/interactive/>
19. Weiss Associates, 1995. *Environmental Study, "Former Shell Services Station, WIC #204-1956-0600, 21490 McClellan Road, Cupertino, California"*, WA Job #81-0708-06. 13 February.

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## FIGURES



GIS: \\haleyaldrich\share\CP\Projects\0205037\GIS\Mapa.mxd - 2/17/2022 4:19:22 PM



MAP SOURCE: ESRI  
SITE COORDINATES: 37°18'39"N, 122°02'45"W

**HALEY  
ALDRICH**

CITY OF CUPERTINO  
PUMPKIN FIESTA PHASE I STORM DRAIN  
IMPROVEMENT PROJECT  
CUPERTINO, CALIFORNIA

## PROJECT LOCUS

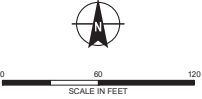
APPROXIMATE SCALE: 1 IN = 2000 FT  
MAY 2022

FIGURE 1



- LEGEND**
- PIPELINE REPLACEMENT
  - SITE BOUNDARY

- NOTES**
1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
  2. ABBREVIATIONS:  
LF = LINEAR FEET  
RCP = REINFORCED CONCRETE PIPE
  3. PIPELINE DATA SOURCE: "PUMPKIN-FIESTA STORM DRAIN IMPROVEMENT PROJECT, CUPERTINO, CALIFORNIA", BFK ENGINEERS, 31 JANUARY 2022
  4. AERIAL IMAGERY SOURCE: NEARMAP, 28 SEPTEMBER 2021

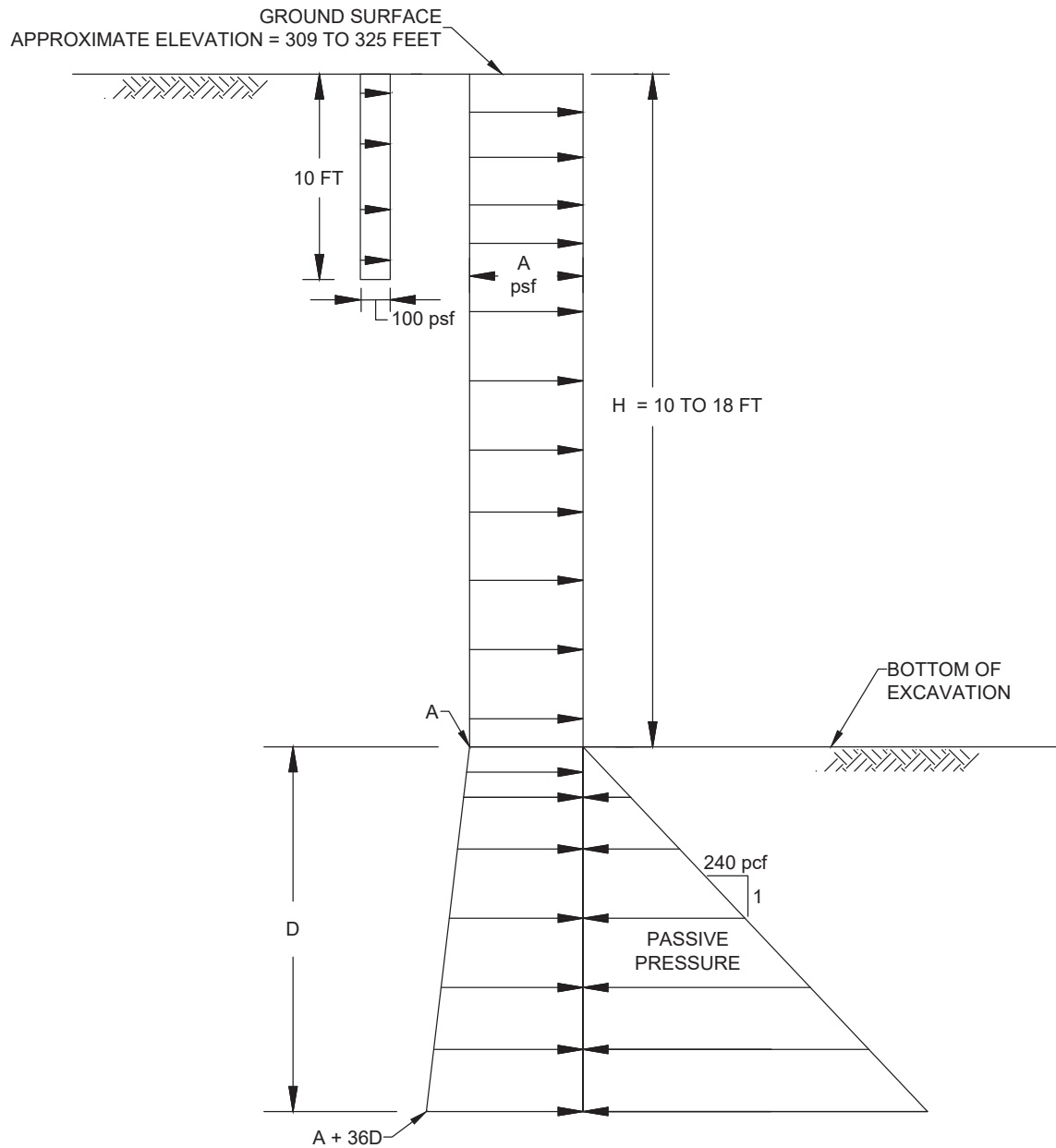


**HALEY ALDRICH** CITY OF CUPERTINO  
PUMPKIN FIESTA PHASE I STORM DRAIN  
IMPROVEMENT PROJECT  
CUPERTINO, CALIFORNIA

**SITE PLAN**

MAY 2022

**FIGURE 2**



A (psf)
36H

#### NOTES

1. THESE SHORING PRESSURES ARE APPLICABLE TO AN EXCAVATION HEIGHT OF UP TO 20 FEET.
2. THE EMBEDMENT DEPTH OF THE SHORING (D) SHALL BE DESIGNED BY OTHERS.
3. PASSIVE PRESSURE VALUES INCLUDE A FACTOR OF SAFETY OF 1.5.
4. THE TIP ELEVATION OF THE SHORING WALL SHOULD EXTEND AT LEAST 10 FEET INTO THE SAND LAYER.
5. ASSUMES SHORING WILL BE BRACED.
6. ALL DIMENSIONS IN FEET UNLESS NOTED OTHERWISE.

**HALEY  
ALDRICH**

CITY OF CUPERTINO  
 PUMPKIN FIESTA  
 PHASE 1 STORM DRAIN IMPROVEMENT PROJECT  
 CUPERTINO, CALIFORNIA

TEMPORARY LATERAL EARTH  
 PRESSURES FOR EXCAVATION  
 (SAND DOMINANT)

SCALE: NOT TO SCALE  
 MAY 2022

FIGURE 3