CITY OF
Fremont

SPECIAL PROVISIONS

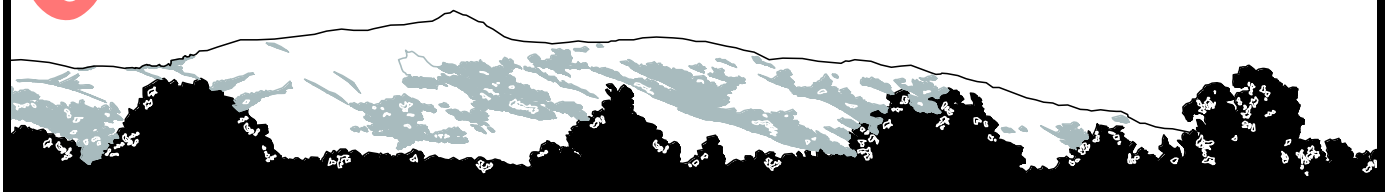
FOR

RIX PARK BASKETBALL COURT PROJECT

CITY PROJECT NO. PWC 9012
BID NUMBER 23-002

Bid Set

PROJECT MANAGER
JENNIE SUEN
JSUEN@FREMONT.GOV
(510) 494 – 4744



COMMUNITY SERVICES DEPARTMENT • LANDSCAPE ARCHITECTURE DIVISION
CITY OF FREMONT • ALAMEDA COUNTY, CALIFORNIA

CITY OF
Fremont

LANDSCAPE ARCHITECTURE DIVISION
SPECIAL PROVISIONS

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FOR

RIX PARK BASKETBALL COURT

CITY PROJECT NO. PWC 9012
IN THE
CITY OF FREMONT, ALAMEDA COUNTY, CALIFORNIA

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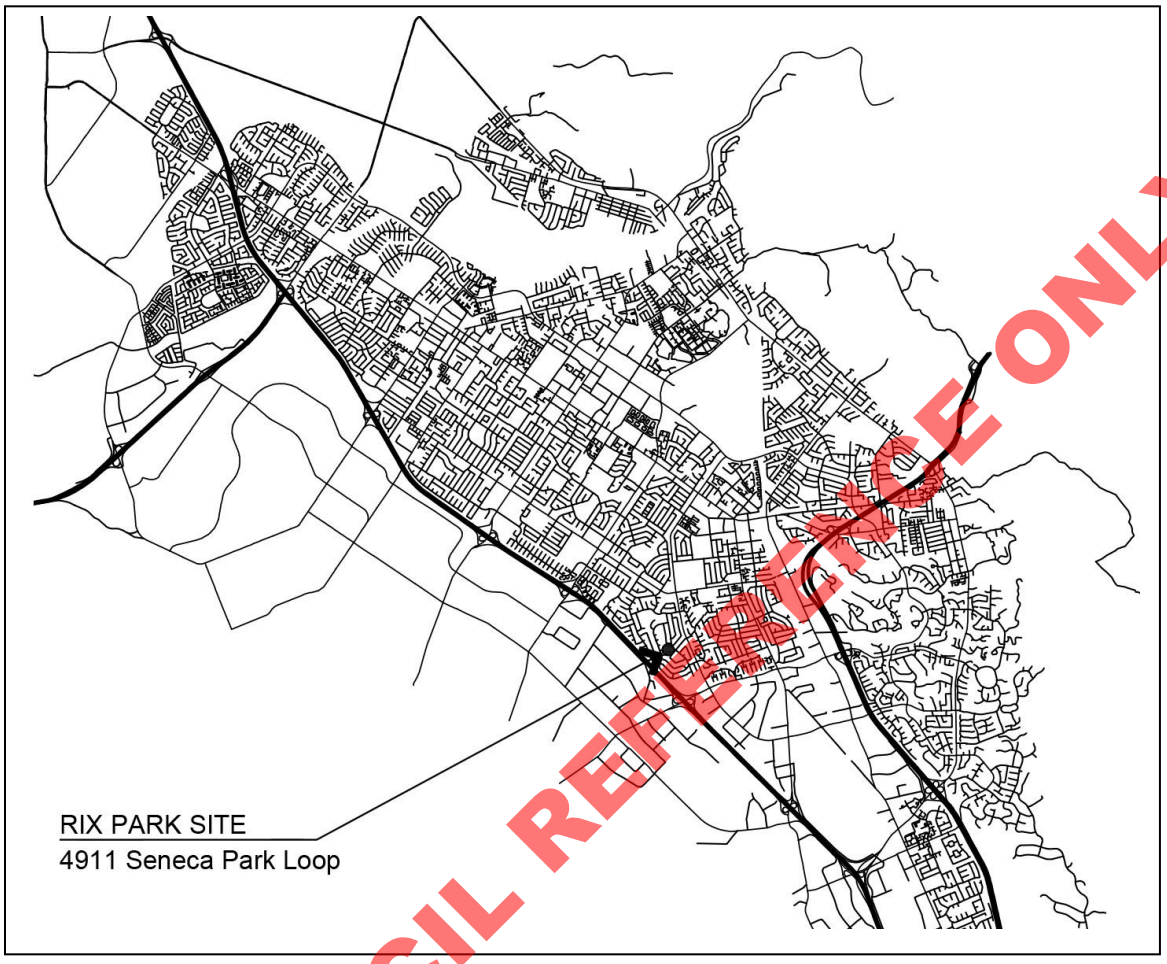

PROJECT LOCATION MAP

City of Fremont

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Notice Inviting Bids

1. Bid Submission.

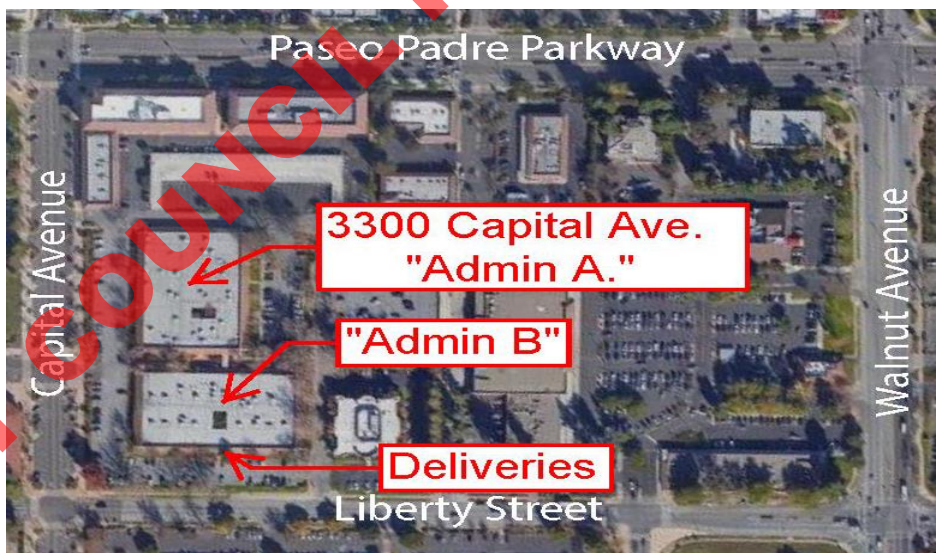
The City of Fremont ("City") will accept sealed bids for its Rix Park Basketball Court Project ("Project"), on or before January 6, 2023, at 2:00 p.m. ("Bid Deadline"), at its Purchasing Division, located at 3300 Capitol Avenue, Building B, Fremont, California 94538.

Due to the current safety measures in place, there will not be a public bid opening for this project. The bids will be opened by Purchasing and the initiating department. A Preliminary bid result will be posted on the City's website the same day by 4:00pm. Please visit www.fremont.gov/532/Bid-Results to obtain Preliminary Bid Results as we are not currently in the office to accept calls for status.

We recommend that if bidders are responding via a delivery service such as US Mail, UPS, FedEx or any way other than personally delivering the bid response that it is done as soon as possible to allow for any delays in the delivery process.

PLEASE NOTE THE DELIVERY LOCATION ON THE MAP BELOW. DELIVERY TO ANY OTHER AREA OTHER THAN NOTED BELOW WILL NOT GUARNATEE DELIVERY.

For vendors that wish to deliver in person someone will be in the Purchasing Department on the day of the bid opening to accept their bids from the hours of 10:00am to 2:00pm (please note we are closed for lunch from 12-1). Delivery prior to bid opening date is recommended via a delivery service as due to the current safety measures we are not fully staffed and have limited days/times in the office. Please come to the **Liberty Street entrance ONLY, where it says Deliveries to deliver your bid. SEE MAP BELOW**



It is the Contractor's responsibility alone to ensure that the bid is received by the City's Authorized Representative before or by the time and place of the bid. Late bids will not be accepted.

2. Project Information.

2.1 Location and Description. The Project is located at 4911 Seneca Park Loop, Fremont, CA, and is described as follows:

The project general description consists of demolition and removal of basketball court asphalt surfacing and aggregate base to existing subgrade; demolition and removal of basketball standard and associated footing, installation of excavated on-site soil and new sod at old basketball court location; clearing and grubbing of existing sod area, installation on new asphalt basketball court with subbase, including striping and color installation; installation of basketball standards with footing; installation of 12" wide curb; modification to existing irrigation at new court and old court to achieve head to head coverage; installation of various walkways; installation of topsoil and new sod at old basketball court location; minor re-grading to accommodate the new court and off haul of excess excavated soils.

2.2 Time for Completion. The planned timeframe for commencement and completion of construction of the Project is:

Complete the project within a total maximum of **60 (sixty)** working days after the date specified in the City's Notice to Proceed. Contractor shall provide a schedule outlining how work shall be completed with the **60 (sixty)** working days allotted for the Bid Work prior to the Pre-Construction Conference.

2.3 Estimated Project Cost. The estimated construction cost, or construction cost range, for the Project is $490,000. This estimate serves only as a guideline to bidders of the scope of the Work and the Project. No bidder, including the successful bidder, is entitled to make any claim against City based on inaccuracy of the estimated cost or range of cost of the Work or the Project.

3. License and Registration Requirements.

3.1 License. This Project requires a valid California contractor's license for the following classification(s): **Class A**. Contractors bidding as a joint venture must secure a joint venture license prior to award of the Contract for the Project.

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 under Labor Code Section 1725.5, subject to limited legal exceptions.

4. Obtaining Contract Documents. The plans, specifications, plan-holder's list, bid, and contract documents for the Project, and any addenda thereto ("Contract Documents") may be purchased from ARC Document Solutions Santa Clara ("ARC"), located at 821 Martin Avenue, Santa Clara, CA 95050; telephone: (408) 295-5770; email: santaclara@e-arc.com; or via Planwell at: www.e-arc.com/ca/santaclara. No partial sets will be issued, and the cost of purchase is non-refundable. Call in advance to confirm availability. Reference City of Fremont Bid No. 23-002.

Bidders are encouraged to recycle unused Contract Documents.

5. Bid Proposal and Security.

5.1 Bid Proposal Form. Each bid must be submitted using the Bid Proposal form provided with the Contract Documents.

5.2 Bid Security. The Bid Proposal must be accompanied by bid security of ten percent of the maximum bid amount, in the form of a cashier's or certified check made payable

to City, or a bid bond executed by a surety licensed to do business in the State of California on the Bid Bond form included with the Contract Documents. The bid security must guarantee that, upon award of the bid, the successful bidder will execute the Contract and submit the payment and performance bonds, the insurance certificates, and the other documentation required by the Contract Documents, within ten days after City's issuance of the Notice of Award.

6. Prevailing Wage Requirements.

6.1 General. This Project is subject to the prevailing wage requirements applicable to the locality in which the Work is to be performed for each craft, classification or type of worker needed to perform the Work, including employer payments for health and welfare, pension, vacation, apprenticeship and similar purposes.

6.2 Rates. The prevailing rates are on file with the City Engineer and 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 Section 1771.4.

6.4 Minimum Wage. This Contract may be subject to the City Minimum Wage Ordinance, codified in Fremont Municipal Code Chapter 5.30. Contractor represents it has read and understands the City's minimum wage requirements and agrees to fully comply with the ordinance. Contractor shall promptly provide any documents and information required by City to verify compliance.

Contractor shall include all applicable minimum wage requirements in all subcontractor contracts and require subcontractors to comply with the requirements.

If federal, state, and local minimum wage laws apply to this Contract, Contractor shall comply with the highest rate of pay applicable.

Contractor's violation of the City's Minimum Wage Ordinance constitutes a material breach of Contract for which the City may pursue all available legal and equitable remedies, including termination.

For more information on the City's minimum wage requirements, please refer to the City of Fremont Minimum Wage Flyer published in the City's website and updated annually.

7. Performance and Payment Bonds.

The successful bidder will be required to provide performance and payment bonds, each for 100% of the Contract Price.

8. Substitution of Securities.

Substitution of appropriate securities in lieu of retention amounts from progress payments is permitted under Public Contract Code Section 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 portion of the Work (based on the Base Bid) 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. Bidders' Conference. A conference will be held on December 15th, 2022 at 10:00 a.m., at the following location: 4911 Seneca Park Loop, Fremont, CA, to acquaint all prospective bidders with the Contract Documents and the Worksite.

The bidders' conference is not mandatory.

Potential bidders who are attend the conference are required to furnish and properly don their own protective gear (the use of a face mask, at a minimum), as well as follow all social distancing requirements per the latest Covid-19 County Guidance. Given the current environment, this may change. If so, potential bidders will be advised by the issue of an addendum.

11. Retention.

Percentage. The percentage of retention that will be withheld from progress payments is 5 (five) %.

12. Instructions to Bidders.

Additional and more detailed information about the Project and City's bidding requirements is provided in the Instructions to Bidders. All bidders should carefully review the Instructions to Bidder before submitting a Bid Proposal for the Project.

Purchasing Division Janice Becerra Date: 12/1/22

Janice Becerra-Scola
Purchasing Agent

Publication Dates:
1) December 6th, 2022
2) December 13th, 2022

END OF NOTICE INVITING BIDS

Instructions to Bidders

Each bid ("Bid Proposal") submitted to the City of Fremont ("City") for its Rix Park Basketball Court 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, sealed and submitted to City, using the form provided in the Contract Documents, by or before the Bid Deadline set forth in the Notice Inviting Bids. City reserves the right to amend or postpone the Bid Deadline by subsequent addendum. Faxed or emailed Bid Proposals will not be accepted, unless otherwise specified. Late submissions will be returned unopened. 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 indirect costs such as applicable taxes, insurance and field offices.

1.2 Bid Envelope. The envelope containing the sealed Bid Proposal and all required forms and attachments must be clearly labeled and addressed as follows:

SEALED BID ENCLOSED, CITY OF FREMONT

BID PROPOSAL
Rix Park Basketball Court Project, Project No. 9012
Bid No. 23-002

City of Fremont, Office of Purchasing (Finance Department)
3300 Capitol Avenue, Building B
Fremont, CA 94538
Attn: Janice Becerra-Scola

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

[Contractor company name]
[street address]
[city, state, zip code]
[California contractor license number(s)]
[DIR Registration No:_____]

1.3 DIR Registration. City will not accept a Bid Proposal from or enter into the Contract with a bidder without proof that the bidder is registered with the DIR to perform public work under Labor Code Section 1725.5, subject to limited legal exceptions. If City is unable to confirm that the bidder is currently registered with the DIR, City may disqualify the bidder and return its bid unopened. (Labor Code Section 1725.5.) If the bid is sent by mail, the sealed envelope must be enclosed in a separate envelope.

1.4 Bid Submittals. Each bidder must use the forms provided by City in these Contract Documents for the bid submittal. All bid forms must be fully completed and signed as directed, along with the required attachments, and the sealed bid submittal must include the following:

(A) Bid Proposal
(B) Bid Schedule
(C) Subcontractor List
(D) Noncollusion Declaration
(E) Bid Security (Cashier's or Certified Check or Bid Bond)
(F) Bidder's Statement of Responsibility

2. Pre-Bid Investigation.

2.1 Contract Documents. Each bidder is solely responsible for diligent and thorough review of the Contract Documents (as defined in the General Conditions), examination of the Project site, and reasonable and prudent inquiry concerning known and potential site conditions prior to submitting a Bid Proposal. However, except for any areas that are open to the general public, bidders may not enter City's property or the Project site without prior coordination with and written authorization from City. Bidders are responsible for reporting any errors or omissions in the Contract Documents to City prior to submitting a Bid Proposal, subject to the limitations of Public Contract Code Section 1104. City expressly disclaims responsibility for assumptions a bidder might draw from the presence or absence of information provided by City.

2.2 Project Site. Soil and soil test data, water table elevations, and soil analyses for test holes may be available for inspection in the **Landscape Architecture Division, Community Services Department** or as otherwise specified in the General Conditions. Any additional 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. The 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.

2.3 Utility Company Standards. The Project must be completed in a manner that satisfies the standards and requirements of the affected utility companies or agencies (collectively, "utility owners"). The successful bidder may be required by the 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 utility owners about their requirements before submitting a Bid Proposal.

3. Questions and Requests for Information or Clarification. Questions, requests for information, and requests for clarification regarding the Project, the bid procedures, or any of the Contract Documents must be submitted to City in writing, addressed to the Project Manager for the Project, as follows:

Jennie Suen, Associate Landscape Architect
39550 Liberty Street, Development Services Center
Landscape Architecture Division, 2/F
Fremont, CA 94537
jsuen@fremont.gov

If a bidder finds any error, omission, inconsistency, or ambiguity in the Contract Documents, the bidder must make a written request for clarification before submitting the bid. Bidders must submit any inquiry under this Section by **5:00 p.m. on December 19,**

2022 at least four (4) Working Days before the Bid Deadline. Questions received any later will not be addressed before the Bid Deadline.

4. **Addenda.** Any addenda issued prior to the bid opening are part of the Contract Documents. Subject to the limitations of Public Contract Code Section 4104.5, City reserves the right to issue addenda prior to bid time. City will make reasonable efforts to deliver addenda to known plan holders who have provided a delivery address for receipt of addenda. However, City makes no guarantee that all bidders will receive all addenda. Each bidder is responsible for ascertaining and ensuring it has received and reviewed all addenda prior to submitting its bid and must acknowledge receipt of all addenda in the Bid Proposal. Bidders should check with ARC (see Section 4 of Notice Inviting Bids) for any addenda or updates on the Project, at: http://www.e-arc.com/ca/santaclara.

5. **Brand Designations and "Or Equal" Substitutions.** Any specification designating a material, product, thing, or service by specific brand or trade name, and 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. Pre-bid requests for substitution must be submitted to the Engineer at least seven Working Days before the Bid Deadline, so that all interested bidders may be notified of any approved alternative. Any other requests for substitution must comply with the General Conditions. If the Engineer denies the request for substitution, the material, product, thing or service specified in the Contract Documents must be furnished and installed. 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 Section 3400(c) and Fremont Municipal Code Section 3.20.167(b).

6. **Bid Schedule.** Bidders are required to fully complete the Bid Schedule form accompanying the Bid Proposal form with unit prices as indicated, and to submit the completed Bid Schedule with their Bid Proposal.

6.1 Incorrect Totals. This provision is intended to resolve computational errors on the Bid Schedule form.

(A) Unit Price Subtotals. 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 (estimated quantity X unit cost).

(B) Unit Price Total. 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.

(C) Alternates. 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.

(D) Withdrawal for Material Error. Nothing in this provision is intended to prevent a bidder from requesting to withdraw its bid for material error under Public Contract Code Section 5100 *et seq*.

6.2 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. However, items marked as "Final Pay" items will be compensated based solely on City's estimated quantities, and payment will not be adjusted based on actual quantities, even if the actual quantities differ from City's estimate on the Bid Schedule. Only changes in quantities of "Final Pay" items due to design changes will be measured and paid separately pursuant to a Change Order.

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, and may also submit a Bid Proposal as a prime contractor.

8. **Bid Proposal Form and Enclosures.** Each Bid Proposal must be completed in ink using the Bid Proposal form included in 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 non-responsive.

9. **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 Section 313.

10. **Bid Security.** Each Bid Proposal must be accompanied by bid security of ten percent of the maximum bid amount (meaning the base bid plus all additive alternate prices, if any), in the form of a cashier's check or certified check made payable to City, or a bid bond using the form included in the Contract Documents and executed by a surety licensed to do business in the State of California. The bid security must guarantee that, if City issues the Notice of Award of the Contract to the bidder, then the bidder will provide to City all of the documents required under Section 14 below within ten calendar days thereof.

11. **Withdrawal of Bid Proposals.** A Bid Proposal for the Project will be considered a firm offer and may not be withdrawn for a period of 90 days after the bid opening without forfeiture of the bid security, except as authorized for material error under Public Contract Code Section 5100 *et seq.* or Fremont Municipal Code Section 3.20.200.

12. **Bid Protest.** Any bid protest must comply with City's protest procedures for public construction project contracts, set forth in Fremont Municipal Code Section 3.20.330. City will issue the Notice of Intent to Award the Contract by posting the notice on designated public bulletin boards and on its bid results webpage at: http://fremont.gov/index.aspx?NID=532. A bid protest must be submitted in writing to, and received by, City's Office of Purchasing, located at 3300 Capitol Avenue, Building B, Fremont, California 94538, before 5:00 p.m. on the fifth Working Day after the date of City's posting of the Notice of Intent to Award ("Bid Protest Deadline"). The protesting bidder will bear the risk of any non-delivery of its bid protest before the Bid Protest Deadline, regardless of the method of delivery used. The bid protest must comply with the following requirements:

12.1 General. Only a bidder that has actually submitted a Bid Proposal is eligible to submit a bid protest against another bidder. Subcontractors are not eligible to submit bid

protests. A bidder may not rely on the bid protest submitted by another bidder but must timely pursue its own protest. For purposes of this Section 12, 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 Section 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.

12.2 Protest Contents. The bid protest must contain a complete statement of the legal grounds for the protest, all the facts relevant to the protest, the form of relief requested, and the legal basis for such relief, as well as all supporting documentation. Material submitted after the Bid Protest Deadline will not be considered. The protest must refer to the specific portion(s) 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 representing the protesting bidder. If City requests additional information, it must be provided to City within the time period City specifies.

12.3 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.

12.4 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 include 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 representing the protested bidder if different from the protested bidder.

12.5 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.

12.6 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 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.

12.7 Right to Award. City reserves the right 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.

13. Reservation of Rights. City reserves the right, acting in its sole discretion, to waive nonmaterial and inconsequential bid irregularities, to accept or reject any and all bids, to issue a new Notice Inviting Bids for the Project, or to abandon the Project entirely.

14. Award of Contract. City will award the Contract, if at all, by issuing a written Notice of Award within 90 days after the opening of bids, or as otherwise specified in the Special Conditions, to the responsible bidder that submitted the lowest responsive bid. The successful bidder must submit to City all of the following documents, within ten calendar days after City's issuance of the Notice of Award:

14.1 Two duly signed counterpart originals of the Contract provided by City with the Notice of Award, using the form included in the Contract Documents;

14.2 Documentation evidencing the authority of the individual(s) signing the Contract on behalf of the successful bidder;

14.3 Payment and performance bonds for the Project as specified in the Contract Documents and using the bond forms included in the Contract Documents, each for 100% of the Contract Price as awarded;

14.4 If required for this Project, a warranty bond as specified in the Contract Documents, using the warranty bond form provided for 20% of the Contract Price as awarded;

14.5 Insurance certificates and endorsements evidencing the successful bidder's insurance coverage, as required by the Contract Documents;

14.6 Documentation evidencing the successful bidder's payment of City business tax and registration tax for a business license, as required by the Contract Documents;

14.7 A copy of the successful bidder's California contractor's license(s), showing the classification(s) required by the Contract Documents; and

14.8 Identification of the successful bidder's on-site superintendent for the Project, as required by the Contract Documents.

15. Statement of Responsibility. Each sealed Bid Proposal must include the bidder's Statement of Responsibility using the form provided with the Contract Documents. The Statement of Responsibility must be completed and signed, including all required attachments, providing satisfactory evidence that shows the bidder's financial resources, the bidder's experience in the type of work being required by City, the bidder's organization available for the performance of the Contract, and any other required evidence of the bidder's qualifications to perform the Contract. City may consider such evidence before making its decision to award the proposed Contract. A bid that does not fully comply with this requirement may be rejected as nonresponsive. A bidder that submits a Statement of Responsibility which is subsequently determined to contain false or misleading information, or material omissions, may be disqualified as non-responsible.

16. 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 ten days following City's issuance of the Notice of Award. Each Subcontractor must also obtain a City business license before performing any Work.

17. Ineligible Subcontractor. Any Subcontractor who is ineligible to perform work on a public works project under Labor Code Sections 1777.1 or 1777.7 is prohibited from performing work on the Project.

18. Pre-Construction Conference. City will schedule a mandatory pre-construction conference for the Project following City's issuance of the Notice of Award and Contract execution by the successful bidder. The successful bidder must attend and participate in the pre-construction conference and provide all of the required information and documents for the conference as set forth in Section 2.2(E) of the General Conditions. City will issue a Notice to Proceed following the conference, identifying the commencement date for the Work and the Contract Time.

19. Warranty Bond. A warranty bond is required for this Project in the amount of 20% of the awarded Contract Price and must be submitted with the Payment and Performance Bonds, as specified in Section 14.

21. Subcontractor Work Limit. The prime Contractor must perform at least 50 % of the Work on the Project, calculated as a percentage of the base bid price on the Bid Proposal form,

using Contractor's own forces. The remaining Work may be performed by qualified Subcontractors.

22. **"For Reference Only."** The following documents are provided "For Reference Only" as defined in Section 3.4 of the General Conditions:

Appendix C: City of Fremont, Potholing Report, Exaro Technologies Corporation, dated 3/3/2022

Appendix D: Geotechnical Evaluation Rix Park Basketball Court, Fremont, California, Project No. 404198001, Ninyo and Moore, dated March 31, 2022

Appendix E: Soil Sampling Results – Rix Park Basketball Court Installation Project, Fremont, California, TRC, dated May 26, 2022.

23. **Additive and Deductive Alternates.** As required by Public Contract Code Section 20103.8, if this bid solicitation includes additive or deductive items, the method checked below will be used to determine the lowest bid. If no method is checked, subparagraph (a) will be used to determine the lowest bid. City retains the right to add to or deduct from the Contract any of the additive or deductive alternates included in the Bid Proposal.

___X__ (a) The lowest bid will be the lowest bid price on the base contract without consideration of the prices on the additive or deductive items.

END OF INSTRUCTIONS TO BIDDERS

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Bid Proposal

Rix Park Basketball Court Project

_____ ("Bidder") hereby submits this Bid Proposal to the City of Fremont ("City") for the above-referenced project ("Project"), in response to the Notice Inviting Bids and in accordance with the Contract Documents referenced therein.

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, for the following price ("Base Bid"): $_____.

Bidder will furnish all labor (including supervision), materials and equipment (whether or not permanent or actually incorporated into the Work), utilities for the Work (including water, sanitary facilities, electricity, fuel, light, heat, and telephone), tools, transportation, and services necessary to complete the Work for the amounts quoted in this Bid Proposal (including the costs of all applicable taxes, patent rights, royalties, licenses, and permits). **Any Work shown on the Plans or described in the Specifications without a specific bid item(s) in this Bid Proposal is hereby included within or made part of this Bid Proposal.**

2. Bid Alternates. Bidder submits the following prices for the specified bid alternates:

Alternate 1: 6' and 9' Chain link Fence, 1.5" Diamond Fabric, Galvanized with Footing Add: $_____

3. Addenda. Bidder agrees that it has confirmed receipt of or access to, and reviewed, all addenda issued for this Bid. Bidder specifically acknowledges receipt of the following addenda:

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

4. Bidder's Warranties. By signing and submitting this Bid Proposal, Bidder warrants the following:

4.1 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 Section 1104.

4.2 Examination of Worksite and Local Conditions. Bidder has visited and examined the Worksite and is familiar with the local conditions at the Project location, including the weather, road access, vehicle routes, and surface and subsurface conditions. Bidder is also familiar with the availability of labor, materials, equipment, and utilities for the Project and has attended any mandatory bidders' conference and any mandatory pre-bid Project site visit.

4.3 Bidder is Qualified. Bidder is fully qualified to perform the Work. Bidder has the expertise and financial capacity to perform all obligations required by the Contract Documents.

4.4 Contract Time. The time for completion of the Work for the Project as specified in the Notice Inviting Bids is reasonable and Bidder is ready and able to perform the Work within that timeframe.

4.5 Legal Compliance. Bidder is aware of and will comply with all applicable legal requirements for the Project, including all federal, California, local and City laws and regulations.

4.6 Responsibility for Bid. Bidder has carefully reviewed this Bid Proposal and is solely responsible for any errors or omissions contained in the completed bid.

4.7 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.

5. Award of Contract. By signing and submitting this Bid Proposal, Bidder agrees that if Bidder is awarded the Contract for the Project, Bidder will provide all of the following to City within ten calendar days following City's issuance of the Notice of Award:

5.1 Signed Contract. Two duly signed counterpart originals of the Contract provided by City with the Notice of Award, using the form included in the Project contract documents ("Contract Documents");

5.2 Signing Authority. Documentation evidencing the authority of the individual(s) signing the Contract on behalf of Bidder;

5.3 Payment, Performance and Warranty Bonds. A payment bond and a performance bond for the Project, each for 100% of the maximum Contract Price as awarded, and a warranty bond, if required, for 20% of the maximum Contract Price as awarded, each executed by sureties licensed to do business in the State of California and using the applicable bond form included with the Contract Documents;

5.4 Insurance. The insurance certificates and endorsements evidencing Bidder's insurance coverage as required by the Contract Documents;

5.5 Business Tax and Registration Tax. Documentation evidencing Bidder's and all listed Subcontractors' payment of City business tax and registration tax for a business license, as required by the Contract Documents;

5.6 Contractor's License. A copy of Bidder's California contractor's license, showing the classification(s) required by the Contract Documents; and

5.7 On-Site Superintendent. Identification of Bidder's on-site superintendent for the Project, as required by the Contract Documents.

6. 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 (meaning the base bid plus all additive alternate prices, if any) in one of the following forms (check one):

____ A cashier's check or certified check payable to City and issued by _____ 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__.

_____	_____ Name and Title
_____ *[See Section 9 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

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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. 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. In case of a math error or ambiguity, the unit cost listed for any bid item will prevail over the extended total amount listed for that bid item. The grand total of all of the extended total amounts listed will also prevail over the Total Base Bid listed below.

LS = Lump Sum EA = Each LF = Linear Foot CY = Cubic Yard F = Final Pay
SF = Square Feet LB = Pounds TON = Ton (2000 lbs) AL = Allowance S = Specialty Item

BID ITEM NO.	SPEC. SECTION	ITEM DESCRIPTION	EST. QTY.	UNIT	UNIT COST	EXTENDED TOTAL AMOUNT
1	01 71 13	Mobilization and Temporary Facilities	1	LS	$	$
2	01 56 26	Temporary Construction Fencing	1,100	LF	$	$
3	01 56 30	Hand Excavation at Tree	3	EA	$	$
4	01 56 39	Tree Protection Fencing (F)	425	LF	$	$
5	01 58 00	Project Identification Signage	1	EA	$	$
6	02 41 00	Site Demolition	1	LS	$	$
7	03 30 00	12" x 12" Concrete Curb	370	LF	$	$
8	03 30 00	6" over 6" Pedestrian Concrete Paving with AB	1,185	SF	$	$
9	31 11 00	Clearing and Grubbing	19,830	SF	$	$
10	31 20 00	Rough Grading/Excavation (F)	240	CY	$	$
11	31 22 19	Fine Grading (F)	14,100	SF	$	$
12	32 12 16 and 32 18 23	Asphalt Basketball Court and Aggregate Base	7,900	SF	$	$
13	32 18 23	Plexipave Surfacing	7,900	SF	$	$
14	32 33 00	Basketball Stanchion, Backboard and Hoop	2	EA	$	$
15	32 33 00	Trash Receptacle	1	EA	$	$
16	32 33 00	Recycle Receptacle	1	EA	$	$
17	32 33 00	Metal Bench	1	EA	$	$
18	32 84 00	Adjust Irrigation Heads	9	EA	$	$

BID ITEM NO.	SPEC. SECTION	ITEM DESCRIPTION	EST. QTY.	UNIT	UNIT COST	EXTENDED TOTAL AMOUNT
19	32 84 00	Adjust Remote Control Valve and Box	1	EA	$	$
20	32 84 00	Pop Up Rotors	11	EA	$	$
21	32 84 00	Irrigation Lateral Pipe	190	LF	$	$
22	32 84 00	4" Irrigation Sleeve	20	LF	$	$
23	32 84 00	Quick Coupler with box	1	EA	$	$
24	32 91 13 and 32 92 23	Sod	10,585	SF	$	$
25	32 92 23	Plant Maintenance Period	1	LS	$	$

TOTAL BASE BID: Items 1 through 25 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: _____

BID ITEM NO.	SPEC. SECTION	ITEM DESCRIPTION	EST. QTY.	UNIT	UNIT COST	EXTENDED TOTAL AMOUNT
		ALTERNATE 1				
26	**32 31 13**	**ADD** 6' Chain Link Fence, 1.5" Diamond Fabric, Galvanized with Footing	32	LF	$	$
27	**32 31 13**	**ADD** 9' Chain Link Fence, 1.5" Diamond Fabric, Galvanized with Footing	16	LF	$	$

TOTAL ALTERNATE 1 BID: Items 26 through 27 inclusive: $_____

[Note: The amount entered as the "Total Alternate 1 Bid" should be identical to the Bid Alternate 1 amount entered in Section 2 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,[1] the bidder must list a description of the Work, the name and email address of the Subcontractor, its California contractor license number, the location of its place of business, its DIR registration number, and the percentage of the total Work to be performed by that Subcontractor, as a portion of the base bid price.

Bidders: Please print legibly. Illegible forms may be rejected.

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

END OF SUBCONTRACTOR LIST

[1] 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 Section 7106 and Title 23 U.S.C Section 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].

_____
Signature

_____
Name

END OF NONCOLLUSION DECLARATION

Bid Bond

_____ ("Bidder") has submitted a bid, dated _____, 20_____ ("Bid"), to the City of Fremont ("City") for work on the Rix Park Basketball Court 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 calendar days following issuance of the Notice of Award to Bidder, Bidder must submit the following to City:

   2.1 **Signed Contract.** Two duly signed counterpart originals of the Contract provided by City with the Notice of Award, using the form included in the Project contract documents ("Contract Documents");

   2.2 **Evidence of Signing Authority.** Documentation evidencing the authority of the individual(s) signing the Contract on behalf of Bidder.

   2.3 **Payment, Performance and Warranty Bonds.** A payment bond and a performance bond for the Project, each for 100% of the maximum Contract Price as awarded, and a warranty bond, if required for 20% of the maximum Contract Price as awarded, each executed by a surety licensed to do business in the State of California and using the applicable bond forms included with the Contract Documents;

   2.4 **Insurance.** The insurance certificates and endorsements evidencing Bidder's insurance coverage as required by the Contract Documents.

   2.5 **Business Tax and Registration Tax.** Documentation evidencing Bidder's and all listed Subcontractors' payment of City business tax and registration tax for a business license, as required by the Contract Documents.

   2.6 **Contractor's License.** A copy of Bidder's California contractor's license, showing the classification(s) required by the Contract Documents.

   2.7 **On-Site Superintendent.** Identification of Bidder's on-site superintendent for the Project, as required by the Contract Documents.

3. **Enforcement.** If Bidder fails to execute the Contract and submit to City all of the required documentation as required under Section 2 above, 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; 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 90 days following award of the Contract or until this Bid Bond is returned to Bidder, whichever occurs first. Surety waives the provisions of Civil Code Sections 2819 and 2845.

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

SURETY: _____
Business name

_____

_____
Name/Title

(Notary Acknowledgment with Notary Seal for Surety and Surety's Power of Attorney Must be Attached)

BIDDER: _____
Business name

_____
Signature

_____
Name/Title

END OF BID BOND

Bidder's Statement of Responsibility

RIX PARK BASKETBALL COURT PROJECT

The bidder must submit to City, with the Bid Proposal, a completed and signed Bidder's Statement of Responsibility. The bidder must use this form and include all required attachments and attaching clearly labeled additional sheets if needed. City may use the completed Statement of Responsibility to evaluate a bidder's qualifications for this Project. The Statement of Responsibility must be filled out completely, accurately, and legibly. Any errors, omissions, or misrepresentations in completion of the Statement of Responsibility may be grounds for rejection of the bid or termination of a Contract awarded pursuant to the bid.

Part 1: General Information

Bidder Business Name: _____ ("Bidder")

Check One: ___ Corporation
___ Partnership
___ Sole Proprietorship
___ Joint Venture of: _____
___ Other:_____

Address: _____

_____

Phone: _____

Owner of Company: _____

Contact Person: _____

Email: _____

Bidder's California Contractor's License Number(s): _____

Part 2: Bidder Experience

1. How many years has Bidder been performing work as a contractor under its present business name? ____ years

1.1 If any of Bidder's experience listed in this Statement of Responsibility refers to work performed under a different business name(s), list on a separate sheet of paper the other name(s) and describe the relationship to Bidder's current business.

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 on grounds that it is not responsible?
_____ Yes _____ No

If yes, provide additional information on a separate sheet of paper regarding the disqualification, including the name and address of the agency or owner of the subject project, the type and size of the project, the reasons that Bidder was disqualified as not responsible, and the month and year in which the disqualification occurred.

4. Has Bidder ever been terminated from a construction project, either as a general contractor or as a subcontractor?
_____ Yes _____ No

If yes, provide additional information on a separate sheet of paper 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 current projects performed as general contractor as follows:

5.1 How many construction projects is Bidder currently under contract to perform that are still in progress? _____

5.2 What is the total dollar amount of the current construction contracts listed in Subsection 5.1? $_____

5.3 What is Bidder's total bonding capacity? $_____

5.4 How many construction contracts listed in Subsection 5.1 are:

(A) In an amount of 50% or less of Bidder's total bid amount for the Project? _____

(B) In an amount between 50% and 100% of Bidder's total bid amount for the Project? _____

(C) In an amount between 100% and 150% of Bidder's total bid amount for the Project? _____

(D) In an amount over 150% of Bidder's total bid amount for the Project? _____

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

6.1 <Insert Number> most recently completed public works projects within the last <Insert Number> years;

6.2 Three largest completed projects within the last three years; and

6.3 Any project which is similar to this Project.

7. Use separate sheets of paper to provide all of the following information for <u>each</u> project identified in response to Sections 5 and 6:

7.1 Project name
7.2 Location
7.3 Owner
7.4 Owner contact (name and current phone number)
7.5 Architect or engineer name
7.6 Architect or engineer contact (name and current phone number)
7.7 Project manager (name and current phone number)
7.8 Description of project and scope of work performed
7.9 Initial contract value (at time of bid award)
7.10 Final cost of construction (including change orders) (provide estimated cost if project is still in progress)
7.11 Original scheduled completion date
7.12 Time extensions granted (number of days)
7.13 Actual date of completion (provide estimated date if project is still in progress)

7.14 Number and amount of stop notices or mechanic's liens filed
7.15 Amount of liquidated damages assessed against Bidder
7.16 Nature and resolution of any claim, lawsuit, and/or arbitration between Bidder and the owner.

Part 3: Claim History

1. Provide information about Bidder's claims history as follows:

1.1 Has any claim been made against Bidder in the past five years which has resulted in arbitration or litigation?_____

1.2 Has Bidder made a claim(s) against any city or other client in the past five years which has resulted in arbitration or litigation?_____

1.3 If the answer was yes to Subsections 1.1 or 1.2 , describe each claim(s) using the format below:

Project name _____
Claim amount _____
Other party entity name _____
Other party contact (name and current phone number)_____
Description of the claim(s), using separate sheets of paper

Part 4: Surety History

1. Provide information about Bidder's surety history as follows:

1.1 Has Bidder ever failed to satisfactorily complete a construction contract? _____

1.2 Has a surety completed any portion of a Bidder construction contract within the last five years? _____

1.3 If the answer was yes to Subsections 1.1 or 1.2, provide explanation(s) using the format below:

Project name _____
Surety name _____
Surety contact (name and current phone number)_____
Date surety took over the project_____
Explanation(s), using separate sheets of paper

Part 5: Verification

In signing this document, I, the undersigned, declare that I am duly authorized to sign and submit this Bidder's Statement of Responsibility on behalf of the named Bidder, and that all responses and information set forth in this Bidder's Statement of Responsibility and the accompanying pages and 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

On Behalf of (Legal Name of Bidder):_____

END OF BIDDER'S STATEMENT OF RESPONSIBILITY

Contract

This public works contract ("Contract") is entered into by and between the City of Fremont ("City") and _____ ("Contractor"), for work ("Work") on the Rix Park Basketball Court 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 Work on 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 following:

   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 and Change Orders;
   2.6 Payment and Performance Bonds, and (if required) Warranty Bond;
   2.7 General Conditions;
   2.8 Special Conditions;
   2.9 Project Drawings and Specifications;
   2.10 Notice of Award;
   2.11 Notice to Proceed; and
   2.12 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, equipment, transportation, and utilities, unless otherwise specified in the Contract Documents. Contractor must use its best efforts to complete the Work in a professional and expeditious manner and to meet or exceed the performance standards required by the Contract Documents.

4. **Payment.** As full and complete compensation for Contractor's timely performance and completion of the Work in strict accordance with the terms and conditions of the Contract Documents, City will pay Contractor $_____ ("Contract Price"), in accordance with the payment provisions in the General Conditions. The Contract Price is fully inclusive of all direct and indirect costs for performing the Work in full compliance with the Contract Documents, including, but not limited to, the items specified in Section 1 of the Bid Proposal, compliance with all General Conditions and Special Conditions requirements, all Work encompassed by the Plans and Specifications, and all taxes, overhead, and profit.

5. **Time for Completion.** Contractor will fully complete the Work for the Project within **45 (forty-five)** "Working Days" from the commencement date given in the Notice to Proceed ("Contract Time"). Contractor must commence the Work no later than ten calendar days after the commencement date stated in the Notice to Proceed. 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 **$1500.00** for each day of unexcused delay in completion, and the Contract Price will be reduced accordingly.

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.

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 under Labor Code Section 1725.5, subject to limited legal exceptions.

7.4 Minimum Wage. This Contract may be subject to the City Minimum Wage Ordinance, codified in Fremont Municipal Code Chapter 5.30. Contractor represents it has read and understands the City's minimum wage requirements and agrees to fully comply with the requirements. Contractor shall promptly provide any documents and information required by City to verify compliance.

Contractor shall include all applicable minimum wage requirements in all subcontractor contracts and require subcontractors to comply with the requirements.

If federal, state, and local minimum and prevailing wage laws apply to this Contract, Contractor shall comply with the highest rate of pay applicable.

Contractor's violation of the City's Minimum Wage Ordinance constitutes a material breach of Contract for which the City may pursue all available legal and equitable remedies, including termination.

8. Workers' Compensation Certification. Under Labor Code Section 1861, by signing this Contract, Contractor certifies as follows: "I am aware of the provisions of Labor Code Section 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 direct or indirect conflict of interest in relation to this Contract, or in the performance of this Contract, that violates any City ordinance or policy or violates any California law, including under Government Code Section 1090 *et seq.* and under the Political Reform Act as set forth in Government Code Section 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 manner in 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 the Contract Documents must be made in writing, and sent to the other party by personal delivery, U.S. Mail, a reliable overnight delivery service, facsimile, or by email. Notice is deemed effective upon delivery unless otherwise specified. Notice for each party must be given as follows:

City:

Name:	City of Fremont
Address:_	39550 Liberty Street
City/State/Zip:	Fremont, California 94537
Phone:	510-494-4700
Attn:	Khandan Bahmani, City Engineer
Email:	KBahmani@fremont.gov
Copy to:	Jennie Suen, Associate Landscape Architect
Email:	JSuen@fremont.gov

Contractor:

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

12. General Provisions.

12.1 Assignment and Successors. Contractor may not assign its rights or obligations under this Contract, in part or in whole, without City's written consent. This Contract is binding on Contractor's successors and permitted assigns.

12.2 Third Party Beneficiaries. There are no intended third party beneficiaries to this Contract except as expressly provided in the General Conditions or Special Conditions.

12.3 Governing Law and Venue. This Contract will be governed by California law and venue will be in the Superior Court of Alameda County, and no other place.

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, or portion of a provision, is determined to be illegal, invalid, or unenforceable, the remaining provisions of the Contract Documents will remain in full force and effect.

12.7 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 Section 313.

12.8 **COUNTERPARTS.** This Agreement may be signed in counterparts, each of which shall be deemed to be an original. The Parties agree that the digital signatures of the parties included in this Agreement are intended to authenticate this writing and to have the same force and effect as manual signatures. Any digital signature shall have the same legal validity and enforceability as a manually executed signature or use of a paper-based record keeping system to the fullest extent permitted by applicable law.

[Signatures are on the following page.]

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

CITY OF FREMONT:

_____
Signature

_____
Name/Title

Date: _____

APPROVED AS TO FORM:

_____
Signature

_____
Name/Title

CONTRACTOR: _____
Business Name

_____
Signature

Seal:

_____
Name/Title

Date: _____

Second Signature (See Section 12.7)

_____

_____
Name/Title

Date: _____

_____
Contractor's California License Number(s) and Expiration Date(s)

END OF CONTRACT

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Payment Bond

The City of Fremont ("City") and _____ ("Contractor") have entered into a contract, dated _____, 20___ ("Contract") for work on the Rix Park Basketball Court 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 Sections 9550, *et seq.*

2. **Surety's Obligation.** If Contractor or any of its Subcontractors fails to pay a person authorized in California Civil Code Section 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 for 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 Section 13020, with respect to the work and labor, then Surety will pay for the obligation.

3. **Beneficiaries.** This Bond inures to the benefit of any of the persons named in California Civil Code Section 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 Sections 2819 and 2845. City waives the requirement of a new bond for any supplemental contract under Civil Code Section 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: _____
   Fax: _____
   Email: _____

6. **Law and Venue.** This Bond will be governed by California law, and any dispute pursuant to this Bond will be venued in the Superior Court of Alameda County, 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.

7. Effective Date; Execution. This Bond is entered into and is effective on _____, 20__.

SURETY: _____
Business Name

_____
Signature

_____
Name/Title

(Notary Acknowledgment with Notary Seal for Surety and Surety's Power of Attorney Must be Attached)

CONTRACTOR: _____
Business Name

_____
Signature

_____
Name/Title

_____
Signature

_____
Name/Title

END OF PAYMENT BOND

Performance Bond

The City of Fremont ("City") and _____ ("Contractor") have entered into a contract, dated _____, 20____ ("Contract") for work on the Rix Park Basketball Court 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 $_____. By executing this Bond, Contractor and Surety bind themselves and their respective heirs, executors, administrators, successors and assigns, jointly and severally, to the provisions of this Bond.

2. **Surety's Obligations.** If Contractor fully performs its obligations under the Contract, including its warranty obligations under the Contract, and Contractor has timely provided a warranty bond as required under the Contract, Surety's obligation under this Bond will become null and void upon the City's acceptance of the Project, excluding any exceptions to acceptance, if any. Otherwise Surety's obligations will remain in full force and effect until expiration of the one year warranty period under the Contract.

3. **Surety's 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 Sections 2819 and 2845.

4. **Application of Contract Balance.** Upon making a demand on this Bond, 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 that Contractor is in default under Section 13.3 of the Contract General Conditions, time being of the essence, Surety must act within the time specified in that Section 13.3 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 any dispute pursuant to this Bond will be venued in the Superior Court of Alameda County, 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

_____
Signature

_____
Name/Title

(Notary Acknowledgment with Notary Seal for Surety and Surety's Power of Attorney Must be Attached)

CONTRACTOR: _____
Business Name

_____
Signature

_____
Name/Title

_____
Signature

_____
Name/Title

END OF PERFORMANCE BOND

Warranty Bond

The City of Fremont ("City") and _____ ("Contractor") have entered into a contract, dated _____, 20___ ("Contract") for work on the Rix Park Basketball Court Project ("Project"). The Contract is incorporated by reference into this Warranty Bond ("Bond").

1. **General.** Under this Bond, Contractor as principal and _____, its surety ("Surety"), are bound to City as obligee in the maximum amount of 20% of the final Contract Price or as otherwise specified in the Contract Documents.

2. **Warranty Period.** The Contract requires Contractor to guarantee its work and that of its Subcontractors on the Project, against defects in materials or workmanship which are discovered during the one year period commencing with City's acceptance of the Project ("Warranty Period"), and to promptly make repairs or reimburse the City for repairs as further specified in Article 11 of the Contract General Conditions.

3. **Surety's Obligations.** If Contractor faithfully carries out and performs its guarantee under the Contract, and, on due notice from City, repairs and remedies at its sole expense any and all defects in materials and workmanship in the Project which are discovered during the Warranty Period, or if Contractor promptly reimburses City for all loss and damage that City sustains because of Contractor's failure to makes such repairs in accordance with the Contract requirements, then Surety's obligations under this Bond will be null and void. Otherwise, Surety's obligations will remain in full force and effect.

4. **Waiver.** Surety waives the provisions of Civil Code Sections 2819 and 2845.

5. **Notice.** 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: _____

6. **Law and Venue.** This Bond will be governed by California law, and any dispute pursuant to this Bond will be venued in the Superior Court of Alameda County, 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.

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

[Signatures are on the following page.]

SURETY: _____
Business Name

_____
Signature

_____
Name/Title

(Notary Acknowledgment with Notary Seal for Surety and Surety's Power of Attorney Must be Attached)

CONTRACTOR: _____
Business Name

_____
Signature

_____
Name/Title

_____
Signature

_____
Name/Title

END OF WARRANTY BOND

General Conditions

Article 1 - Definitions

Definitions. The following definitions apply to all of the Contract Documents unless otherwise indicated. Defined terms and titles of documents are capitalized in the Contract Documents, with the exception of the words “day,” “furnish,” “including,” “install,” “work day” or “working day.”

Allowance means an amount included in the Bid Proposal for Work that may or may not be included in the Project, depending on conditions that will not become known until after bids are opened. If the Contract Price includes an Allowance and the cost of performing the Work covered by that Allowance is greater or less than the Allowance, the Contract Price will be increased or decreased accordingly.

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 City of Fremont, 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) designated to oversee and manage the Project on City’s behalf.

City Standard Specifications means the current version of City’s Standard Specifications in effect at the time bids were submitted.

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.

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 Award and Notice to Proceed; the payment, performance and warranty bonds; the General Conditions; the Special Conditions; the Project Drawings and Specifications; any Change Orders; and any other documents expressly made part of the Contract Documents.

Contract Price means the total compensation to be paid to Contractor for performance of the Work, as set forth in the Contract and as 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, or equipment following submission of the Bid Proposal.

Contract Time means the number of calendar days for performance of the Work, as set forth in the Contract and as 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, landscape architectural, or engineering 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 means the City-provided plans and graphical depictions of the Project requirements, and does not include Shop Drawings.

Engineer means the City Engineer for City and his or her authorized delegees.

Extra Work means new or unforeseen work added to the Project, as determined by the Engineer in his or her sole discretion, that: (A) is not covered by Contract unit prices; (B) is not part of or incidental to the scope of the Work; (C) is substantially different from the Work as described in the Contract Documents at bid time; or (D) results from a substantially changed Project condition.

Field Order means written instructions from the Engineer that require or authorize minor changes in the Work that do not affect the Contract Price or Contract Time.

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

Final Payment means payment to Contractor of the unpaid Contract Price, including release of undisputed retention, less amounts withheld pursuant to the Contract Documents, including liquidated damages, up to 125% of the amount of any unreleased stop notice, amounts subject to setoff, up to 150% of any unresolved third-party claim for which Contractor is required to indemnify City, and up to 150% of any amount in dispute as authorized by Public Contract Code Section 7107.

Furnish means to purchase and deliver for the Project.

Hazardous Materials means any substance or material identified now or in the future as hazardous under any federal, state, or local law or regulation, or any other substance or material that may be considered hazardous or otherwise subject to statutory or regulatory requirements governing handling, disposal, or cleanup.

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

Inspector means the individual(s) or firm(s) retained 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 applicable codes, regulations, and permits.

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

Plans has the same meaning as 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.

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

Section as used in these General Conditions, means a numbered Section of the General Conditions, unless otherwise indicated by the context, such as statutory references.

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

Specifications means the technical, text specifications describing the Project requirements, which are prepared for and incorporated into this Project 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, suppliers, fabricators, and equipment lessors of all tiers, unless otherwise indicated by the context.

Technical Specifications means Specifications.

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

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

Worksite means the place or places where the Work is performed.

Article 2 - Roles and Responsibilities

2.1 City.

(A) ***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, in the form of Field Orders or otherwise, to ensure proper and timely completion of the Project.

(B) ***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 Contract Documents. The Design Professional's decision(s) regarding interpretation of the Drawings or Specifications is final and conclusive.

2.2 Contractor.

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

(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, 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. 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 the 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, also 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 on-site superintendent must be authorized to act on Contractor's behalf concerning the Project, with the authority to sign, send, and receive all notices contemplated or required by the Contract Documents and to direct the Work. 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 the 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) ***Pre-Construction Conference.*** City will designate a date and time for the mandatory pre-construction conference with Contractor following Contract execution. Project administration procedures and coordination between City and Contractor will be discussed. Contractor must submit a draft version of the baseline schedule required under Section 5.2, below, at least ten days before the scheduled date for the pre-construction conference, unless a shorter period is specified by the City. The draft baseline schedule must specify the time or number of days allocated for completion of each major item, rather than the specific dates. If the City provides comments on the draft baseline schedule before the pre-construction conference, Contractor must prepare responses to the City's comments for review at the pre-construction conference. At the pre-construction conference Contractor must also present City with the information or documents listed below for City's review and acceptance before the Work commences. Failure to timely comply with any of these pre-construction submittal requirements may operate to delay issuance of the Notice to Proceed and commencement of the Work. Contractor is solely responsible for any resulting delay damages caused by its failure to comply with this provision.

(1) Qualifications of the proposed on-site superintendent for the Project and his or her 24-hour complete contact information, including email address and telephone numbers during regular hours and after hours;

(2) List of all other key Project personnel and their complete contact information, including email addresses and telephone numbers during regular hours and after hours;

(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;

(4) If required, traffic control plans associated with the staging plans that are signed and stamped by a licensed traffic engineer;

(5) Responses to City comments on the draft baseline schedule for the Work, and if required in the Special Conditions, proof of order and estimated delivery dates for any long lead time items;

(6) Breakdown of lump sum bid items, and cost distribution schedule of prices (schedule of values), to be used for determining the value of Work completed for future progress payments to Contractor;

(7) Schedule with a list of Contractor's Project submittals that require City review, and list of the proposed material suppliers;

(8) Plan for coordination with affected utility owner(s) and compliance with any related permit requirements;

(9) Videotape and photographs recording the conditions throughout the Project site before any Work begins, 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;

(10) Contractor's safety program and identification of Contractor's safety officer for the Project;

(11) Copies of the required documentation for each Subcontractor, including a copy of the contract between Contractor and each Subcontractor and the Subcontractor's California contractor's license and identification of its authorized representative for the Project;

(12) If requested by City, Contractor's cash flow projections; and

(13) Any other documents or information specified in the Special Conditions or Notice of Award.

(F) ***Standards; Compliance.*** 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 all applicable laws, regulations, codes, standards, and permits, including City's municipal code, rules, and regulations, and any orders of the administrative or judicial bodies with jurisdiction over the Work.

(G) ***Progress Meetings.*** Contractor, and the Subcontractors requested by City, must attend regular Project progress meetings with City that City will schedule;

(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 of Contractor who has proven during the course of the Work 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 workmanship, materials, parts, or equipment. Workmanship, materials, parts or equipment that do not conform to the requirements under the Drawings, 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. City may elect to retain defective Work and deduct the difference in value, as determined by the Engineer, from payments otherwise due to Contractor.

(J) ***Contractor's Records.*** Contractor must maintain all of its records relating to the Project in any form, including paper documents, photos, videos and electronic records. Project records subject to this provision include: records relating to preparation of Contractor's bid; Project cost and accounting records; Project employment records; a record copy of the Contract Documents, including the Project Plans and Specifications, Addenda, Change Orders, RFIs and RFI responses, Field Orders, and approved Shop Drawings; contracts with Contractor's suppliers and Subcontractors for the Project; and all notes, daily logs and memoranda relating to the Work.

(1) Contractor's cost and accounting records must include all supporting documentation, including original purchase orders, 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 records in an organized manner, according to generally accepted accounting principles, for a period of four years after City's acceptance of the Project or following Contract termination, whichever occurs first. Subject to prior notice to Contractor, City is entitled to inspect or audit any of Contractor's records relating to the Project or to investigate Contractor's plant or equipment during Contractor's normal business hours. Contractor must also provide copies of the Project records to City upon request.

(K) ***Copies of Project Documents Onsite.*** Contractor and its Subcontractors must keep copies, at the Project site, of the Work-related documents, including the Contract, Drawings, Plans, Specifications, Addenda, Contract amendments, Change Orders, RFIs and RFI responses, Field Orders, approved Shop Drawings, and any related written interpretations. The Contract Documents, as-built drawings, and all Worksite copies must be available to City for reference at all times.

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 workforce. Each Subcontractor must obtain a City business license before performing any Work. Each Subcontractor must also pay City business tax and registration tax for a business license, under Fremont Municipal Code Chapter 5.05, before performing any Work.

(B) ***Contractual Obligations.*** Contractor must include a provision in each of its subcontracts that incorporates by reference, and requires the Subcontractor to be bound to and comply with, the provisions of the Contract Documents as they apply to the Subcontractor's portion(s) of the Work, and to likewise bind their own subcontractors or suppliers. Such provisions to be incorporated by reference specifically include, but are not limited to, the following obligations of Contractor under the Contract Documents: indemnification of City; City business tax and registration tax compliance; insurance coverage; and compliance with nondiscrimination and all other applicable laws. 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 City accepts 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 Section 4107, Contractor is solely responsible for all costs City incurs in responding to the request, including legal fees and costs to conduct a hearing.

2.4 Coordination of Work.

(A) ***Concurrent Work.*** City reserves the right to perform or to have performed other work on or adjacent to the Project site while the Work is being performed. 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 and subcontractors. 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) ***Defects.*** 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 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.

2.5 Submittals. Unless otherwise specified, Contractor must submit the following to the Project Manager for review: all schedules, Shop Drawings, samples, product data and similar submittals required by the Contract Documents, and any other submittals

requested by the Project Manager. Unless otherwise specified, all submittals, including Requests for Information, are subject to the provisions of this Section.

(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 approved 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. For planning purposes, Contractor should assume at least 14 days for City review of each submittal or batch of submittals, and a longer time period for complex submittals or for large batches of submittals.

(C) ***Required Contents.*** Each submittal must be numbered in sequential order and 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 City notes exceptions and requires corrections for any submittal, Contractor must promptly make and submit the required corrections to City in full conformance with the requirements of this Section.

(E) ***Effect of Review and Acknowledgement by City.*** City's review and acknowledgement of a submittal that results in no exceptions taken 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 and acknowledgement of a submittal by City with no exceptions taken is not an assumption of risk or liability by City.

(F) ***Enforcement.*** Any Work performed or material used without prior review of a required submittal will be performed 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, 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 Request for Information will be considered excessive or unnecessary if City determines that the explanation or response to the Request for Information is clearly and unambiguously discernable from the Contract Documents or in any Field Order that City has issued. City's costs to review and respond to excessive or unnecessary Requests for Information may be deducted from payments otherwise due to Contractor.

(H) ***Additional Requirements for Submittals.*** Any additional requirements for submittals may be included in the Special Conditions or Specifications.

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 show all necessary details. Unless otherwise specified by City, three copies must be provided to the Engineer for review at least 30 days before the Work will be performed. If City notes exceptions or requires changes, three copies of the corrected Shop Drawings must be resubmitted to the Engineer for review. For all Project components requiring Shop Drawings, Contractor will not furnish materials or perform any Work until the Shop Drawings for those components are reviewed 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. Review of Shop Drawings by the Engineer does not relieve Contractor of Contractor's responsibility.

Article 3 - Contract Documents

3.1 Interpretation of Contract Documents.

(A) ***Drawings and Specifications.*** The Drawings 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 Drawings 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 Drawings and Specifications, the Specifications will control. Any arrangement or division of the Drawings and Specifications in sections is for convenience and is not to limit the Work required by separate trades. A conclusion presented in Drawings 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 conclusion. Subject to the limitations of Public Contract Code Section 1104, it is Contractor's responsibility to ascertain the existence of any conditions affecting the cost of the Work.

(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 under the Drawings or Specifications, Contractor must immediately submit a Request for Information to the Engineer and wait for a response from City before proceeding further with the related Work. The Request for Information 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. City will not extend the Contract Time due to Contractor's failure to submit a timely Request for Information to the Engineer.

(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 at the Worksite before ordering any material or performing any Work, and will be responsible for the correctness of those measurements.

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:

(A) Change Orders;
(B) Addenda;
(C) Contract;
(D) Notice to Proceed;
(E) Notice of Award;
(F) Special Conditions;
(G) General Conditions;
(H) Payment, Performance and (if required) Warranty Bonds;
(I) Specifications;
(J) Drawings;
(K) Contractor's Bid Proposal and attachments;
(L) Notice Inviting Bids;
(M) Instructions to Bidders;
(N) City Standard Specifications;
(O) City Standard Details; and
(P) Any other documents prepared by and on behalf of a third party that were not prepared specifically for this Project.

3.3 Caltrans Standard Specifications. Any reference in the Contract Documents 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 ("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 Standard Specifications:

(A) ***Limitations.*** None of the "General Provisions" of the Standard Specifications, i.e., Sections 1 through 9, applies 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 Standard Specifications 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, or any portions thereof, are expressly included in the Contract Documents under 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 incorporated into 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 For Reference Only.

3.5 Current Versions. Unless otherwise specified by City, any reference to the City Standard Specifications, Standard Plans and Standard Details, technical specifications, or any City or California codes or regulations means the latest specification, code or regulation in effect at the time that bids were due.

Article 4 - Bonds, Indemnity, and Insurance

4.1 Payment and Performance Bonds. Within ten days following issuance of the Notice of 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, using the bond forms included with the Contract Documents.

(A) ***Surety.*** Each bond must be issued 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 may be required 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, including its elected officials, officers, agents, employees, consultants and volunteers (individually, an "Indemnitee," and collectively the "Indemnitees"), from and against any and all liability, loss, damage, claims, 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, including its officers, agents, representatives, employees, Subcontractors and suppliers, 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 Section 9201. 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 Award, and before commencing any Work, Contractor must, at its sole expense, procure the insurance coverage required by this Section and provide acceptable proof of the coverage to the satisfaction of City's Risk Manager. Proof of coverage must be evidenced within the body of the insurance policies or in the form of certificates and endorsements as described below. The required insurance must cover Contractor, including its officers, agents, representatives, employees, Subcontractors and suppliers, for claims now and in the future that may relate to or arise from the performance of the Work. The insurance must

remain in full force and effect throughout the duration of the Contract. The insurance must be issued by companies 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 "VII" or better. Contractor's procurement of the required insurance will not be construed to relieve Contractor of any performance obligations, to limit Contractor's liability, or to fulfill Contractor's indemnification obligations under the Contract. Contractor may carry any additional insurance it deems necessary or prudent, at its sole expense.

(A) ***Insurance Coverage and Limits.*** Any available insurance proceeds related to this Contract that are broader than or in excess of the specified minimum insurance coverage requirements or limits for Contractor must be made available to the additional insureds under this Contract. The requirements for Contractor's coverage and limits are: (1) the minimum coverage and limits specified in this Contract, or (2) the broader coverage and maximum limits of coverage of any insurance policy or proceeds available to the named insureds, whichever is greater. The limits of insurance required in this Contract may be satisfied by a combination of primary and umbrella or excess insurance. Any umbrella or excess insurance must contain or be endorsed to contain a provision that such coverage will also apply on a primary and non-contributory basis for the benefit of City, before City's own insurance or self-insurance will be called upon to protect it as a named insured.

(B) ***Minimum Scope of Insurance*****.** Contractor must procure and maintain all of the following insurance coverage for this Contract, unless otherwise specified in the Special Conditions:

(1) Insurance Services Office Commercial General Liability ("CGL") insurance that includes:

a) Blanket contractual liability coverage;
b) Contractor's protected coverage;
c) Broad form property coverage;
d) Personal injury coverage;
e) Completed operations coverage; and

(2) Insurance Services Office Automobile Liability insurance, Code 1 (any auto).

(3) Builder's Risk insurance.

(4) Workers' Compensation insurance as required by the State of California and Employer's Liability insurance.

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

(6) Any other insurance coverage City may require in the Special Conditions.

(C) ***Minimum Limits of Insurance.*** Contractor must maintain coverage limits of at least the following for this Contract, unless otherwise specified in the Special Conditions:

(1) CGL insurance: Issued on an occurrence basis, with $2,000,000 per occurrence for bodily injury, personal injury and property damage and $4,000,000 general aggregate. If CGL insurance or other form with a general

aggregate liability is used, either the general aggregate limit must apply separately to this Contract or the general aggregate limit must be twice the required occurrence limit.

(2) Automobile Liability insurance: $1,000,000 per accident for bodily injury, death and property damage. For owned, loaned, hired and non-owned autos.

(3) Builder's Risk insurance*:* Issued on an occurrence basis, with all-risk coverage on a 100% completed value basis on the insurable portion of the Project for the benefit of City.

(4) Employer's Liability insurance:

a) Bodily Injury by Accident - $1,000,000 each accident;
b) Bodily Injury by Disease - $1,000,000 policy limit; and
c) Bodily Injury by Disease - $1,000,000 each employee.

(5) Any other limits City may require in the Special Conditions.

(D) ***Deductibles and Self-Insured Retentions.***

(1) Any deductible or self-insured retention (SIR) applicable to Contractor's insurance must be declared to and approved by City. At City's option, either: a) the insurer must reduce or eliminate such deductible or SIR with respect to City, including its elected officials, officers, agents, employees, consultants, volunteers and Design Professional; or b) Contractor must procure a bond guaranteeing payment of losses and related investigations, claims administration and defense expenses.

(2) Policies containing any SIR provision must provide or be endorsed to provide that the SIR may be satisfied by either the named insured or City.

(3) City reserves the right to obtain a full certified copy of any insurance policy and endorsement. Failure to exercise this right will not constitute a waiver of the right to exercise it later.

(E) ***Endorsements*****.** The required CGL, automobile liability and builder's risk insurance policies must contain, or be endorsed to contain, the following provisions:

(1) City, its elected officials, officers, agents, employees, consultants, volunteers and Design Professional, are covered as additional insureds as respects: any alleged liability arising out of activities performed by or on behalf of Contractor; products and completed operations of Contractor; premises owned, occupied or used by Contractor; any automobiles owned, leased, hired or borrowed by Contractor. The coverage will contain no special limitations on the scope of protection afforded to City, its elected officials, officers, agents, employees, consultants, volunteers and Design Professional.

(2) Any failure to comply with reporting or other provisions of the policies, including breaches of warranties, will not affect coverage provided to City, its elected officials, officers, agents, employees, consultants, volunteers and Design Professional.

(3) The insurance will apply separately to each insured against whom a claim is made or suit is brought, except with respect to the limits of the insurer's liability. 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.

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

(F) ***Insurance Certificates and Endorsements***. Contractor must furnish properly executed certificates of insurance from insurance companies acceptable to City, with signed copies of the specified endorsements for each policy as required in Subsection M below. Such documentation must clearly evidence all coverages as required above, including specific evidence of separate endorsements naming City, its elected officials, officers, agents, employees, consultants, volunteers and Design Professional as additional insureds as also required above. The certificates must also provide that such insurance will not be materially changed, terminated or allowed to expire except after 30 days prior written notice thereof has been filed with the City Clerk by certified mail, return receipt requested, unless the change or termination is due to non-payment of premiums, in which case ten days prior written notice thereof must be filed with the City Clerk.

(G) ***Completed Operations.*** Contractor must maintain the required insurance coverage to the fullest amount allowed by law and must maintain the insurance for a minimum of five years following Final Completion of the Project. In the event Contractor fails to obtain or maintain completed operations coverage as required herein, City at its sole discretion may purchase the coverage required and the cost will be paid by Contractor.

(H) ***Cross-Liability.*** The CGL policy must include a cross-liability or severability of interest endorsement.

(I) ***Failure to Maintain Insurance Coverage.*** Contractor's failure, for any reason, to maintain the required insurance coverage will be deemed a material breach of this Contract. City, at its sole option, may terminate this Contract and obtain damages from Contractor resulting from such breach. Alternatively, City may purchase the required insurance coverage and, without further notice to Contractor, deduct from sums due to Contractor any premium costs advanced by City for the insurance.

(J) ***Primary and Non-Contributory.*** Contractor's insurance coverage under this Contract will be primary insurance as respects City, its elected officials, officers, agents, employees, consultants, volunteers and Design Professional. Any insurance or self-insurance maintained by City, its elected officials, officers, agents, employees, consultants, volunteers or Design Professional, will be excess of Contractor's insurance and will not contribute with it. The additional insured coverage under Contractor's policies will be "primary and non-contributory" and will not seek contribution from City's insurance or self-insurance and will be at least as broad as CG 20 01 04 13.

(K) ***Subcontractors***. Contractor must require all Subcontractors to maintain the same levels of insurance and provide the same indemnity that Contractor is required to provide under this Contract, including the requirements related to the additional insureds and waivers of subrogation.. Contractor must require each Subcontractor to provide evidence of the required insurance and endorsements prior to the Subcontractor's commencement of any Work. The insurance requirements for Subcontractors do not replace or limit the Contractor's insurance obligations.

(L) ***Subrogation Waiver.*** Contractor agrees to waive subrogation rights against City, regardless of the applicability of any insurance proceeds, and to require all Subcontractors or others involved in any way with the Work to do likewise. Each required insurance policy must include an endorsement providing that the carrier agrees to waive any right of subrogation it may have against City, its elected officials, officers, agents, employees, consultants, volunteers and Design Professional.

(M) ***Verification of Coverage.*** Contractor must furnish City with original endorsements effecting coverage required by this Section 4.3. The endorsements must be signed by a person authorized by that insurer to bind coverage on its behalf. All endorsements must be received and approved by City's Risk Manager before the Work commences. Contractor must provide substitute insurance coverage, and written proof of the substitute insurance coverage, to City, in the form of policies, certificates and endorsements acceptable to City's Risk Manager, no later than 30 days prior to the expiration date of any insurance policy required under this Contract.

4.4 **Warranty Bond.** If required for this Project, within ten days following issuance of the notice of award, Contractor must submit a warranty bond, using the form included with the Contract Documents, to guarantee its Work as specified in Article 11, Completion and Warranty Procedures. The warranty bond must be issued by a surety admitted in California for 20% of the awarded Contract Price or as otherwise specified in the Contract Documents. 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.

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 on the Project site before the date specified in the Notice to Proceed.

(B) ***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.** All schedules must be prepared using standard scheduling software acceptable to City, and must provide schedules in electronic and paper form as requested.

(A) ***Baseline (As-Planned) Schedule.*** Within three calendar days following City's issuance of the Notice to Award (or as otherwise specified in the Special Conditions), Contractor must submit to City for review a final 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. The final baseline schedule must be based on the draft baseline schedule submitted for the pre-construction conference pursuant to Section 2.2, above, and must incorporate City comments as directed during the pre-construction conference. 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, the activity's dependence on completion of other activities, and the duration of the activity.

(1) *Specialized Materials Ordering*. The baseline schedule must include ordering and estimated delivery dates for specialized materials or items that are not readily available from suppliers.

(2) *Long Lead Time Items.* The baseline schedule must include realistic estimates of the lead time required for ordering items that require a long lead time, such as items that must be specially fabricated or are subject to special handling or shipping.

(B) ***City's Review of Schedules.*** City will review and may note or take 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 taken in a schedule and must, within seven days, correct the schedule to address them.

(C) ***Progress Schedules.*** After City reviews a final baseline schedule on which no exceptions are taken, Contractor must submit to City an updated progress schedule and three-week look-ahead schedule, in the format specified by City, for review 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 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 not to Contractor.

(2) *Failure to Submit Schedule*. Reliable, up-to-date schedules are essential to timely, efficient and cost-effective administration of the Project. 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 ten percent from payment(s) otherwise due to Contractor until the exceptions are resolved, the schedule is corrected and resubmitted, and City has taken no further exceptions.

(D) ***Recovery Schedule.*** If City determines that the Work is more than two weeks 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 Acknowledgement.*** Contractor and its Subcontractors must perform the Work in accordance with the most current schedule unless otherwise directed by City. City's review 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 in its on-site office a copy of the most current progress or recovery schedule that has no exceptions taken by City.

(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, from 7:30 a.m. until 4:00 p.m., 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.

(I) ***Additional Requirements for Work Schedules.*** Any additional requirements for Work schedules may be included in the Special Conditions or Specifications.

5.3 Delay and Extensions of Contract Time.

(A) ***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. 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. Contractor is not entitled to an extension of the Contract Time for delay that will not affect the time for Final Completion, based on the critical path in the baseline schedule.

(B) ***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 timely completion of the Work;

(3) Contractor's failure to provide adequate notification to utility companies or agencies for connections or services necessary for the timely performance and completion of the Work;

(4) foreseeable conditions which Contractor could have ascertained from reasonably diligent inspection of the Worksite or review of the Contract Documents or other information provided or available to Contractor; or

(5) Contractor's financial inability to perform the Work, including insufficient funds to pay its Subcontractors or suppliers.

(C) ***Compensable Delay.*** Pursuant to Public Contract Code Section 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, or that does not affect the time for Final Completion, based on the critical path in the baseline schedule.

(D) ***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 reviewed by City. Recoverable Costs will not include home office overhead or lost profit.

(E) ***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 calendar days, if any, by which an Excusable Delay or a Compensable Delay exceeds a concurrent Non-Excusable Delay. Contractor is entitled to an extension of Contract Time, or compensation for Recoverable Costs for Compensable Delay, 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: (a) the delay was an Excusable or Compensable Delay, as defined above; (b) Contractor has made reasonable efforts to mitigate the delay and its schedule and cost impacts; (c) the delay will unavoidably result in delaying Final Completion; and (d) 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 Section 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 working 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 Section 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.

(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 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) ***No Limitation on 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 default or damage, including damage to property or persons, or for defective materials or workmanship. This provision for liquidated damages will not apply to the Contract or limit City in any way if Contractor abandons the Work. In such event, Contractor will be liable to City for all losses incurred.

Article 6 - Contract Modification

6.1 Contract Modification and Changes in Work. Modifications to the Contract are valid and legally binding only if, duly authorized by a written and signed Field Order or Change Order. City may also make changes in the Work without invalidating the Contract. City may direct changes in the Work, which may include Extra Work as set forth in Subsection (B) below. Any change in the Work, whether directed by City or pursuant to Contractor's request for a Change Order under Section 6.2 below, will not be a valid and binding change to the Contract unless it is formalized in a Change Order, which may include commensurate changes in the Contract Price or Contract Time as applicable. 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 pursuant to Public Contract Code Section 7101 based on cost reduction changes or "value engineering," unless otherwise specified in the Special Conditions, or unless expressly authorized in advance in writing by City.

(A) ***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. 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. 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.

(B) ***Extra Work.*** Contractor must promptly perform any Extra Work authorized by City in accordance with the original Contract Documents, even if Contractor and City have not yet reached agreement on the adjustments to the Contract Price or Contract Time for such work. 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. Contractor must also provide City with

summary report(s) of the Extra Work performed and the related costs, together with copies of certified payroll, invoices, and other documentation substantiating the costs. 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 report(s) will become the basis for payment under a duly authorized and signed Change Order.

(C) ***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 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, and subcontract amounts. 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.

(D) ***Required Form.*** Contractor must use City's form(s), or a format(s) approved by City, for submitting all Change Order requests or proposals, unless otherwise specified by City during the pre-construction conference.

(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, and agrees that any costs, expenses, or time extension request not included herein is deemed waived. Contractor understands that submission of claims which have no basis in fact or which Contractor knows to be false may violate the False Claims Act, as set forth in Government Code Sections 12650 *et seq.*"

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, but in the order provided:

(A) ***Unit Pricing.*** Amounts previously provided by Contractor in the form of unit prices, either in a bid schedule or schedule of values, will apply if unit pricing has previously been provided in Contractor's accepted bid schedule or schedule of values for the affected Work. No additional markup for overhead or profit or other indirect costs will be added to the calculation.

(B) ***Lump Sum.*** A mutually agreed upon lump sum, with no additional markup for overhead, profit or other indirect costs.

(C) ***Time and Materials.*** On a time and materials basis, which may include a not-to-exceed limit, calculated as the total of the following sums:

(1) All direct labor costs, plus 15 percent markup;

(2) All direct material costs, including sales tax, plus 15 percent markup;

(3) All direct plant and equipment rental costs, plus 15 percent markup; and

(4) All direct subcontract costs, plus 15 percent markup for the first $2,000 in such costs and five percent markup for all subcontract costs in excess of $2,000.

(D) ***Markup.*** Markup is deemed to include all indirect costs, including overhead and profit. Any additional bond or insurance premium costs will be considered to be included in the amounts charged to City as set forth above.

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 amount of compensation and added 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.

6.6 Value Engineering. Unless otherwise specified in the Special Conditions, this Contract does not provide for payment of extra compensation to the Contractor for cost reductions resulting from a proposal submitted by the Contractor, and Contractor will not be entitled additional compensation for value engineering pursuant to Public Contract Code Section 7101.

Article 7 - General Construction Provisions

7.1 Permits and Taxes.

(A) ***General.*** With the exception of City building permit fees, Contractor must obtain and pay for all permits, fees, or licenses required to perform the Work, including a City business license. Contractor and all Subcontractors must pay City business tax and registration tax for the business license under Fremont Municipal Code Chapter 5.05. 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 notices, permits, licenses, and renewals required for the Work. Contractor will be solely responsible for finalizing and closing out all permits for the Project issued by City's building department and all other government agencies with jurisdiction over the Project.

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(B) ***Federal Excise Tax.*** 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. Except as otherwise specified in the Special Conditions, and in addition to any requirements in the Specifications pertaining to temporary facilities, Contractor must provide, at Contractor's sole expense, any and all temporary facilities for the Project, including an onsite staging area for material 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 locations of all temporary facilities must be approved by the City prior to installation.

(A) ***Standards.*** Such structures must be safe and adequate for the intended use, and installed and maintained in accordance with all applicable federal, state, and local laws, codes, and regulations.

(B) ***Screening.*** Contractor must fence and screen the Project site and staging area, and its operation must minimize inconvenience to neighboring properties.

(C) ***Utilities.*** Contractor must install and maintain the light, power, water and all other utilities required for the Project site, including the piping, wiring, lamps and related equipment necessary to perform the Work.

(D) ***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 caused by the installation, use, or removal of the temporary facilities, and must promptly restore the property to its original or intended condition.

(E) ***Additional Requirements.*** Additional provisions pertaining to temporary facilities may be included in the Specifications or Special Conditions.

7.3 Noninterference and Additional Work Areas. 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 notify the affected parties 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 Work areas, 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 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.

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

7.5 Worksite 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 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 Drawings. Contractor is liable for any damage caused by Contractor or its Subcontractors to the Work, City's real or personal property, the real or personal 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, the Project site, City's real or personal property, and the real or personal property of adjacent or nearby property owners.

(2) Public 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.

(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) ***Reporting Damage.*** If any death, personal injury or property damage occurs in connection with the performance of the Work or otherwise in relation to the Project or the Contract, Contractor must immediately notify City. Contractor must first notify the Project Manager and the City Risk Manager's office by telephone and then promptly submit to the Project Manager and City Risk Manager a written report, in a form acceptable to City, with the following information: (1) a detailed description of the damage or injury, including the location, the circumstances, and the name and address of any injured or deceased person(s) and any affected property owner(s); (2) the name and address of any witnesses to the incident; and (3) the name and address of Contractor's insurance company representatives.

(D) ***Unforeseen Conditions.*** If Contractor encounters facilities, utilities, or other unknown conditions not shown on or reasonably inferable from the Drawings or apparent from inspection of the Project site, Contractor must immediately notify City and promptly submit a Request for Information to the Engineer and 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.

(E) ***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 law.

(F) ***Post-Construction Restoration.*** Contractor must ensure, as part of the Work, 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.

(G) ***Additional Requirements.*** Any additional requirements for protecting the Work, the Project site and the adjacent or nearby property may be included in the Special Conditions or Specifications.

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 furnish evidence satisfactory to the Project Manager concerning the kind and quality of materials and equipment provided. Contractor must also 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 recommendation. 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 below. 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 promptly notify City of any defects discovered in City-provided materials or equipment. 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, including payment of any royalties or license fees, for the use for or incorporation into the Work of an invention, design, product, material, equipment, device, or process that is patented, copyright-protected, or subject to advance licensure for use. Contractor's indemnity obligations in Article 4 apply to any claimed violation of intellectual property rights in violation of this provision.

(D) ***Certificate of Compliance.*** When a Certificate of Compliance is specified or for any material produced outside of the United States, Contractor must submit a Certificate of Compliance before incorporating that material into the Project. The Certificate of Compliance must be in a form acceptable to the Engineer, identifying the material and its source, and the lot. The Certificate of Compliance must be signed by the material producer stating that the material fully complies with the applicable requirements of the specifications. Submission of a Certificate of Compliance will not limit Contractor's continuing obligation to use only materials that conform with the requirements of the Contract Documents.

7.7 Substitutions.

(A) ***"Or Equal."*** Any specification designating a material, product, or thing (collectively, "item") or service by specific brand or trade name that is followed by the words "or equal" is intended to indicate the quality and type of item or service desired, and Contractor may request use of any equal item or service.

(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 with no increase in Contract Price or Contract Time.

(F) ***Contractor's Obligations.*** City's review 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.

(G) ***Additional Requirements for Substitutions.*** Any additional requirements for substitutions may be included in the Special Conditions or Specifications.

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, provide City with safe access to the Worksite and make all portions of the Work available for inspection.

(B) ***Scheduling and Notification.*** Contractor must cooperate with City in coordinating the inspections and testing. Contractor must 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 two Working Days 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 specified 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.

(C) ***Responsibility for Costs.*** City will bear the initial cost of inspection and testing to be performed by City's inspectors or any 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 established 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. If the Engineer requests to see a covered or concealed portion of the Work that was not subject to such testing or inspection, Contractor must promptly uncover the Work but may also submit a request for a Change Order for the cost of uncovering and then re-covering that portion of the Work. However, if the uncovered Work does not conform to the Contract Documents, Contractor must pay all such costs and will not be entitled to any adjustment to the Contract Time or Contract Price.

(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 apply to final inspection under Article 11, Completion and Warranty Provisions.

(G) ***Additional Requirements for Testing and Inspection.*** Any additional requirements for inspection and testing may be included in the Special Conditions or Specifications.

7.9 Worksite Maintenance and Operation. 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 and neat condition and in compliance with all regulatory requirements for air quality and dust control. 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 applicable law, regulation or rule.

(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 the Engineer 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 Worksite 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. 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.

(1) 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.

(2) If the Contract Documents include the Caltrans Standard Specifications, Contractor must comply with the Caltrans requirements for disposal of material outside of the highway right of way.

(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 City's storm drain system.

(E) ***Completion.*** At the completion of the Work, Contractor must remove from the Worksite all of its equipment, tools, surplus materials, waste materials and debris, presenting a clean and neat appearance. Before demobilizing from the Worksite, 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, leaving those areas in the condition originally found or better.

(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 and warranties, must be delivered to City for review.

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

7.11 As-built Drawings. Contractor and its Subcontractors must maintain at the Project site a separate complete set of Drawings which will be used solely for the purpose of recording changes made in any portion of the Work 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. Progress payments may be delayed, in whole or in part, 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 Drawings must be shown in detail. The location of all main runs, whether piping, conduit, ductwork or drain lines, must be shown by dimension and elevation.

(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 in PDF format to City for review and approval as a condition precedent to Final Completion.

7.12 Existing Utilities. As required by Government Code Section 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 Drawings 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. Government Code Section 4216.2 requires that, except in an emergency, Contractor must contact the appropriate regional notification center, or Underground Services Alert ("USA") at 800-642-2444 (for Northern California), 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, and, if practical, Contractor must delineate with white paint or other suitable markings the area to be excavated. Contractor is required to contact USA before beginning Work on the Project, and take appropriate measures to avoid damaging or obstructing access to subsurface installations.

7.14 Trenching and Excavations of Four Feet or More. As required by Public Contract Code Section 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 Section 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 law;

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

(3) Unknown physical conditions at the Worksite 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 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 (A) above, Contractor will not be excused from any scheduled completion date provided for in the Contract Documents, 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 law which pertain to the resolution of disputes between Contractor and City.

7.15 Trenching of Five Feet or More. As required by Labor Code Section 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 engage a California licensed surveyor to 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.

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, burial grounds, 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. Any suspension of Work required due to discovery of Historic or Archeological Items will be treated 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 as required below. Contractor and its Subcontractors must at all times in the performance of the Work comply with all applicable federal, state, and local laws and regulations 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 applicable state, municipal or regional laws, ordinances, rules or regulations governing

discharge of stormwater, including applicable municipal stormwater management programs.

7.20 Noise Control. The noise level from Contractor's operations must not exceed 86 dBa at a distance of 50 feet at any time. In addition, Contractor must comply with all applicable noise control laws, ordinances, regulations and rules, including any noise mitigation requirements in an environmental document applicable to the Project, such as a mitigated negative declaration or environmental impact report. 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.

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, providing an itemized breakdown of all lump sum pricing previously provided in Contractor's Bid Proposal or Bid Schedule, including mobilization and demobilization. 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 stipulated in the Contract Documents. For progress payments, compensation for unit-priced items will be based on the actual quantities installed during the preceding month, with the exception of items identified by City as a "Final Pay" items on the Bid Schedule, which will be paid for based solely on City's estimated quantities, except as provided in Section 8.8, on Final Payment.

(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 installed in the Project, as well as authorized and approved Change Orders. Each pay application must be supported by Contractor's Bid Schedule 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 Section 20104.50. City will deduct a percentage from each progress payment as retention, as set forth in Section 8.5, below, and may deduct 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. Amounts 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 Worksite 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 am amount equal to the total of past due payments;

(D) For Contractor's failure to timely correct rejected, nonconforming, or defective Work, City may withhold or deduct any 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 or deduct an amount equal to five percent of the total amount requested;

(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 estimated cost to prepare the as-builts;

(H) For Work performed without City review of Shop Drawings, when review of Shop Drawings is required before proceeding with the Work, City may deduct any amount based on the estimated costs to correct unsatisfactory Work or diminution in value;

(I) For fines assessed under the Labor Code, as required by law; or

(J) For any other costs or charges that may be offset against payments due, as provided in the Contract Documents, including liquidated damages.

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 amount due on each progress payment, or the percentage stated in the Notice Inviting Bids, whichever is greater, as retention to ensure full and satisfactory performance of the Work.

(A) ***Substitution of Securities.*** As provided by Public Contract Code Section 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 Section 22300, and will be subject to approval as to form by City's legal counsel.

(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 under Section 8.3 or Section 8.6, 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(D) below, or, if the Project has not been accepted, no later than 60 days after the Project is otherwise considered complete under Public Contract Code Section 7107(c).

8.6 **Setoff.** City is entitled to set off any amounts due from Contractor against any payments due to Contractor. City's entitlement to setoff includes progress payments as well as Final Payment and unreleased retention.

8.7 **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 Worksite by the Subcontractor or supplier during the preceding month. Such payments must be made in accordance with the requirements of the law, and those of the Contract Documents and applicable subcontract or supplier contract.

(A) ***Withholding for Stop Notice.*** Pursuant to Civil Code Section 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 to issue joint checks made payable to Contractor and its Subcontractors or suppliers. 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 City. 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.

8.8 **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. Adjustments to under-payment or over-payment in previous progress payments, including adjustments to payments for unit-priced items based on actual quantities, may be included in the calculation of Final Payment. However, compensation items for identified by City as a "Final Pay" item on the Bid Schedule (marked "F") will be based solely on the estimated quantities provided in the Bid Schedule. Only changes in quantities due to design changes will be measured and paid separately pursuant to a Change Order. The date of Final Payment is deemed to be effective on the date that City acts to release undisputed retention as final payment to Contractor, or otherwise provides written notice to Contractor of Final Payment. 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.

8.9 **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 release of all claims against City arising from or related to the portion of Work covered by those undisputed amounts, in accordance with Civil Code Section 8120, *et seq.* Any disputed amounts may be specifically excluded from the release.

8.10 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 federal and California laws, including the California Fair Employment and Housing Act (Government Code Sections 12900 *et seq.*), Government Code Section 11135, and Labor Code Sections 1735, 1777.5, 1777.6, and 3077.5.

9.2 Labor Code Requirements.

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

(B) ***Penalty.*** Under Labor Code Section 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 Section 1815.

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

(D) ***Notices.*** Under Labor Code Section 1771.4, Contractor is required to post all job site notices prescribed by law or regulation.

9.3 Prevailing Wages. Each worker performing Work under this Contract that is covered under Labor Code Section 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 Sections 1771 and 1774 of the Labor Code. The prevailing wage rates are available online at http://www.dir.ca.gov/dlsr. Contractor must post a copy of the applicable prevailing rates at the Worksite.

(A) ***Penalties.*** Under Labor Code Section 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 current applicable prevailing wage rates under federal law, available online at http://www.access.gpo.gov/davisbacon/ca.html.

(C) ***Local Requirements.*** If this Project is subject to Fremont's minimum wage requirements in addition to state and federal prevailing wage requirements, Contractor and its Subcontractors are required to pay the highest rate of pay provided by law.

9.4 Payroll Records. Contractor must comply with the provisions of Labor Code Sections 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 Sections 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 Department of Industrial Relations, and as further required by the Labor Code.

(C) ***Enforcement.*** Upon notice of noncompliance with Labor Code Section 1776, Contractor or Subcontractor has ten days in which to comply with 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 progress payments then due.

9.5 Labor Compliance. Under Labor Code Section 1771.4, the Contract for this Project, if awarded on or after January 15, 2015, is subject to compliance monitoring and enforcement by the California Department of Industrial Relations.

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 comply with all applicable safety laws, rules and regulations and seek to avoid injury, loss, or damage to persons or property by taking reasonable steps to protect its employees and other persons at the Worksite, materials and equipment stored on or off site, and property at or adjacent to the Worksite.

(A) ***Reporting Requirements.*** Contractor must immediately provide a written report to City of all recordable accidents and injuries occurring at the Worksite. 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 law or regulation.

(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 Worksite 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 Worksite 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 Section 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 Material Safety Data Sheets ("MSDS") at the Worksite, as required by law, for materials or substances used or consumed in the performance of the Work. The MSDS 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 Worksite 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 Worksite 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 Worksite condition, the method of construction, or the way any Work must be performed.

Article 11 - Completion and Warranty Provisions

11.1 Final Completion.

(A) ***Final Inspection.*** When the Work required by this Contract is fully performed, Contractor must provide written notification to City requesting final inspection. Based on that inspection, City will prepare a punch list of items that are incomplete, incorrectly installed, or not operating as required by the Contract Documents. The omission of any such item from this punch list will not relieve Contractor from fulfilling all requirements of the Contract Documents.

(B) ***Punch List.*** City will deliver the punch list to Contractor and 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. Following the final inspection, City will charge Contractor for City's staff time and any other costs incurred for City's additional inspection(s) and review(s) of incomplete or unacceptable punch list Work.

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

(D) ***Acceptance.*** The Project will be considered accepted upon the date specified in the Engineer's written memorandum of acceptance. 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. With the exception of warranty work, City's acceptance, subject to any express exceptions, terminates Contractor's duty to perform the Work.

(E) ***Final Payment.*** 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.

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. 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 City's acceptance of the Project pursuant to Section 11.1(D) (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 acceptance, 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.

(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 to the Contract Documents at Contractor's sole expense. Contractor, or its surety, must reimburse City for its costs within 30 days following City's submission of a demand(s) 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.

(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 to the Contract Documents at Contractor's sole expense. Contractor, or its surety, must reimburse City for its costs within 30 days following City's submission of a demand(s) 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 immediately correct the defective Work, including any associated overtime charges.

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 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 perform the Work.

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 change in the Contract Time, including a time extension or relief from liquidated damages, or a change in the Contract Price, that 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.

(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 Section 9204 and Sections 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 the 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.

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 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 claimed cost. Any Claim for an extension of time or delay costs must be substantiated with schedule analysis and narrative depicting and explaining claimed time impacts.

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

(1) General introduction, specifically identifying the submission as a "Claim" submitted under this Article 12.

(2) Relevant background information, including identification of the specific demand at issue, and the date of City's rejection of that demand.

(3) Detailed explanation of the issue(s) in dispute. For multiple issues, separately number and identify each issue and include the following for each separate issue:

(a) The background of the issue, including references to relevant provisions of the Contract Documents;

(b) A succinct statement of the matter in dispute, including Contractor's position and the basis for that position;

(c) A chronology of relevant events;

(d) The identification and attachment of all supporting documents (see subsection (A), above, on Substantiation); and

(e) Use of a separate page for each issue.

(4) Summary of issues and damages.

(5) 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 are true and correct. Contractor warrants that this Claim is comprehensive and complete as to the matters in dispute, and agrees that any costs, expenses, or delay claim not included herein are deemed waived. Contractor understands that submission of a Claim which has no basis in fact or which Contractor knows to be false may violate the False Claims Act (Government Code Section 12650 *et seq.*)."

(C) ***Submission Deadlines.***

(1) A Claim 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.

(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 8.8, above.

(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 Section 9204. However, if City determines that the Claim is not

adequately documented, 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.

(B) ***Non-Waiver.*** Any failure by City to respond within the times specified above may 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 of the 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 Section 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 mediation equally, except costs incurred by each party for its representation by legal counsel or any other consultants.

(B) ***Government Code Claims***.

(1) Timely presentment of a Government Code Claim is a condition precedent to filing any legal action based on or arising from the Contract.

(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 California Code of Civil Procedure Section 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 **Damages.** 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 consequential damages, including home office overhead or any form of overhead not directly incurred at the 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 may not be used for any recovery under the Contract.

12.9 **Multiple Claims.** In the interest of efficiency, City, acting in its sole discretion, may elect to process multiple Claims concurrently, in which case the applicable procedures above will be based on the total amount of such Claims rather than the amount of each individual Claim. Any such election will not operate to change or waive any other requirements of this Article.

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, 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, City may immediately order the Work, or any portion of it, suspended until the cause for the suspension has been eliminated to City's satisfaction.

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

(B) ***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, and not due to any act or omission by Contractor or its Subcontractors. Upon notice by City pursuant to this provision, Contractor must

immediately suspend, delay, or interrupt the Work as directed by City. The Contract Price and the Contract Time will be equitably adjusted by Change Order to reflect the cost and delay impact occasioned by such suspension for convenience. However, the time for completing the Project will only be extended if the suspension causes or will cause delay in Final Completion.

13.3 **Termination for Default.** Contractor may be deemed in default for any material breach of or inability to perform the Contract, including Contractor's: refusal or failure to supply sufficient skilled workers, proper materials, or equipment to perform the Work within the Contract Time; refusal or failure to make prompt payment to its employees, Subcontractors, or suppliers; refusal or failure to correct rejected Work or replace or repair any damage caused by Contractor, its agents, or Subcontractors; disregard of laws, regulations, ordinances, rules, or orders of any public agency with jurisdiction over the Project; lack of financial capacity to complete the Work within the Contract Time; abandonment of the Work; or responsibility for any other material breach of the Contract requirements.

(A) ***Notice of Default.*** Upon City's determination that Contractor is in default, City may provide Contractor and its surety a written notice of default. The notice may, in City's sole discretion: provide an opportunity for Contractor to immediately cure the default; inform Contractor of City's intent to cure the default; or inform Contractor of City's intent to terminate the Contract as set forth below.

(B) ***City's Right to Cure.*** City may choose to cure the default through use of its own forces and charge Contractor for all resulting expenses. Such expenses may include charges for all City staff time spent and charges for any replacement contractor(s) engaged to cure the default, and any associated expenses such as for City administrative staff time, consultant fees and attorney's fees. Interest on all expenses will also be charged, in the amount of seven percent per annum from the date of payment for each expense. City may deduct all such expenses and costs from amounts otherwise payable to Contractor under the Contract.

(C) ***Notice of Termination.*** Within seven calendar days after the written notice of default has been given, unless the default is otherwise cured or arrangements to cure the default have been made and memorialized in writing to City's satisfaction, City may terminate the Contract by providing written notice thereof to Contractor with a copy to Contractor's surety.

(D) ***Waiver.*** Time being of the essence in the performance of the Work, if Contractor's surety fails to, within seven calendar days from the date of City's notice of termination, arrange for completion of the Work in accordance with the Performance Bond, Contractor's surety will be deemed to have waived its right to complete the Work under the Contract, and City may immediately make arrangements for the completion of the Work through use of its own forces. City may use City staff or hire a replacement contractor(s), or use any other means that City determines advisable under the circumstances. Contractor and its surety will be jointly and severally liable for any additional expenses and costs incurred by City to complete the Work following termination. Such expenses may include charges for all City staff time spent and charges for any replacement contractor(s) engaged to complete the Work, and any associated expenses such as for City administrative staff time, consultant fees, and attorney's fees. Interest on all expenses will also be charged, in the amount of seven percent per annum from the date of payment for each expense. In addition, City will have the right to use any materials, supplies, and equipment belonging to Contractor and located at the Worksite for the purposes of completing the remaining Work.

(E) ***Other Rights and Remedies.*** No Contract termination by City, or other action City takes following such termination, will prejudice, limit or extinguish any other rights or remedies that will remain available to City by law or under the Contract Documents upon such termination. City may proceed against Contractor following Contract termination to recover all losses and costs City has suffered or incurred relating to Contractor's default.

(F) ***Wrongful Termination.*** 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 consequential damages, lost opportunity costs or lost profits.

13.4 Termination for Convenience. City reserves the right to terminate all or part of the Contract for convenience upon written notice to Contractor. Upon receipt of such notice, Contractor must: immediately stop the Work, including under any terms or conditions that may be specified in the notice; comply with City's instructions to protect the completed Work and materials; and use its best efforts to minimize further costs. Subject to City's directions in the notice, 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. Contractor must also promptly cancel all existing subcontracts that relate to performance of the discontinued Work.

(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 to date, 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.* Actual and substantiated demobilization costs; and

(3) *Markup.* Five percent of the total value of the Work performed as of the date of notice of termination or five percent of the value of the Work yet to be completed, whichever is less, which is deemed to cover all overhead and profit to date.

13.5 Effect of Any Contract Termination. Upon any termination pursuant to this Article, City may enter upon and take possession of the Project and the Work. City may also take possession of, for the sole purpose of completing the Work, all of Contractor's tools, equipment and appliances, and all materials on the Worksite or stored off the Worksite that will be incorporated in the Work. 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, 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 Section 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. Section 15) or under the Cartwright Act (Chapter 2 (commencing with Section

16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the 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.

END OF GENERAL CONDITIONS

Article 15 – SPECIAL CONDITIONS

SECTION 01 00 00 Supplemental to the General Conditions

PART 1 GENERAL

1.01 SECTION INCLUDES:

A. Intention

B. Order of Work

C. Permits Fees, and Licenses

D. Submittals

E. Hours of Work and City Holidays

F. Builders Risk Insurance Waived

G. Verification of Conditions

H. Coordination and Cooperation

I. Maintaining Traffic and Public Safety

J. Obstructions

K. Watering

L. Testing

M. Supplemental Work

N. Clean-Up

1.02 INTENTION

Each section of these Special Provisions shall be considered to include everything necessary and reasonably incidental tot eh completion of the work of that section as shown and construction as specified on the plans or mentioned herein. These General Requirements and General Conditions of the Contract shall apply to each separate section of these Special provisions and toe each separate trade or contract.

1.03 ORDER OF WORK

A. Refer to Article 5 of the General Conditions – Contract Time.

B. As described in Article 5.2.A, after approval of the project progress schedule, the Contractor may place temporary construction fencing. Work shall commence within 10 days of installing any Temporary Construction Fence. Temporary construction fencing must be complete and in place before all other phases of work can commence. Failure to begin work within 10 days of placing temporary construction fencing shall be deemed breach of contract.

C. Refer to Section 01 56 26 “Temporary Construction Fencing” found elsewhere in this section for additional information on acceptable fencing and payment.

D. At least ten (10) working days prior to the beginning of work, the Contractor shall submit traffic control handling plans for approval. Updated traffic handling plans as required should be submitted prior to each subsequent stage of traffic handling a minimum of ten (10) working days prior to the beginning of work on that stage. Attention is directed to the “Maintaining Traffic” section of these special provisions.

E. At least five (5) working days prior to the beginning of work, the Contractor shall notify local authorities, including the City of Fremont Police Department of his intent to begin work. The Contractor shall cooperate with the Engineer relative to handling traffic through the area and shall make his own arrangements relative to keeping the working area clear of parked vehicles. The following contact information is provided for the Contractors information only. Contractor is responsible for contacting and coordinating with local authorities and agencies.

1.	Fremont Police Department – Dispatch	(510) 790-6800
2.	Fremont Fire Department - Dispatch	(925) 422-7594
3.	Paramedic Plus - Operations	(510) 746-5700
4.	Paramedic Plus - Dispatch	ph: (925) 422-7595 fax: (510) 625-1486
5.	U.S. Postal Service - Fremont Main Post Office	(510) 792-8655
6.	A.C. Transit - Dispatch	(510) 891-4901
7.	East Bay Para Transit	(510) 446-2008
8.	Fremont Unified School District – Dispatch	(510) 657-1450 x13147
9.	Republic Services “Allied Waste” (Garbage Pickup)	(510) 657-3500
10.	BLT – Fremont Recycling Transfer Station	(510) 252-0500

F. The Contractor shall commence construction of the project on the first chargeable work day as specified on the Notice to Proceed, which will be issued on the day of the preconstruction conference.

G. 24 Hour Contact Number - The Contractor shall assign a Project Superintendent who has the complete authority to make decisions on behalf of the Contractor. The Project Superintendent shall have the ability to speak, read and write in English. The Project Superintendent shall be on the job at all times during the construction and shall be available and on call 24 hours a day for the duration of the project. The Project Superintendent shall meet with the Engineer at least once per day while the project is actively under construction. Additionally, the Project Engineer shall attend all regularly scheduled job progress meetings. The Contractor shall provide to the Engineer and the Fremont Police Department a 24-hour contact number for the Project Superintendent. This number shall not direct calls to a recorder or other message taking service.

H. Advance Public Notification – Not less than two (2) weeks prior to beginning work, the Contractor shall deliver written notice to all adjoining residents, businesses, tenants and other applicable parties listed above. Written notice shall include posting of Notices at affected court areas for the park and court users. Notice shall be given for general construction activity to occur, as well as specific activities that will, in any way, inconvenience residents/property owners/tenants or affect their operations or access to their properties. Such notice shall include the expected date for the start of construction, a general description of the construction activities that will take place, expected duration, and the name, address, and contact number of the Contractor’s Project Superintendent and of the City’s Project Engineer. A follow up notice shall then also be distributed no later than three (3) days prior to the start of

construction. The follow-up notice from the Contractor should include the specific location and dates of when the work will be done, in accordance with the approved schedule. Copies of both notices shall be provided to the Engineer for approval five (5) working days prior to the initial distribution dates of each notice.

I. Order of Work:

1. Tree Protection Fencing
2. Temporary Construction Fencing
3. Install BMP's
4. General Construction

1.03 PERMITS, FEES AND LICENSE

A. Refer to Article 7.1 of the General Conditions – General Construction Provisions

B. All permits must be obtained by the contractor prior to the City scheduling a pre-construction meeting. At the pre-construction meeting, the contractor shall bring the permit and permitted set of drawings to the meeting.

C. City of Fremont Business Tax / License: General Contractor and all subcontractors shall have and maintain a current City of Fremont business license, demonstrating evidence of valid workers compensation insurance and valid contractor's license; and will have demonstrated payment of current business license fees to conduct business within the City of Fremont prior to the commencement of the work.

D. Failure to secure and obtain the appropriate permits does not stop working days from being counted, nor will it be deemed fault of the City for allow the contractor to proceed with work that is subsequently delayed due to lack of the appropriate permits.

E. The Business Tax/License Dept. of the City of Fremont can be reached at 494-4790. Office hours are Monday through Friday 8 AM to 4 PM. The address is 39550 Liberty Street, at the corner of Liberty and Kearney. If you have questions about what types of businesses are allowed in residential or commercial locations, please contact the City of Fremont Planning Division at 510-494-4440. The City of Fremont uses the term *business tax* instead of *business license.* If you are a business located outside of Fremont and you will be physically coming into Fremont to conduct business, completion of an Out-of-Town Business Tax Application Form is required by the City of Fremont. Applications are available at the Development Services Center at 39550 Liberty Street at the corner of Liberty and Kearney Streets, one block from Stevenson Blvd. Office hours are Monday through Friday, 8 AM to 4PM. Applications can also be downloaded from: http://www.ci.fremont.ca.us/business/outoftown.html.

1.04 SUBMITTALS

A. Refer to Article 2.5 of the General Conditions and Section 01 32 19 "Submittal Procedures" for additional information for those submittals required at the pre-construction meeting.

B. The City **WILL** provide a written notice indicating the Council award and requesting for submittals to begin. It is the contractor's responsibility to provide submittals as required, and described, in each section of the special provisions, which may include

providing submittals prior to the issuance of the notice beginning of the Contract Time.

C. The intent of beginning the submittal process upon City Council award is to expedite this process and allow the Contractor the ability to begin the order and purchase of materials, especially for long lead-time items, in order to complete the contract work within the stated contract time.

1.05 HOURS OF WORK AND CITY HOLIDAYS

A. There are no restrictions to work hours or days for this project. Work hours and days are as stated below and per Article 5 – Contract Time (H).

- 7:30 a.m. to 4:00 p.m. during weekdays. Additional hours shall not occur without the written authorization from the Project Inspector or Project Engineer.
- No work allowed on Saturday, without written authorization from the Project Inspector or Project Engineer.
- No work allowed on Sunday, without written authorization from the Project Inspector or Project Engineer

B. Work will not be performed on City holidays (and/or holiday weekends preceding or following identified holidays), without prior approval from Engineer. City recognized holidays are as follows:

1. New Year's Day - Observed - Monday, January 2, 2023
2. Dr. Martin Luther King, Jr. Day - Monday, January 16, 2023
3. President Day - Monday, February 20, 2023
4. Memorial Day - Monday, May 29, 2023
5. Juneteenth - Monday, June 19, 2023
6. Independence Day - Tuesday, July 4, 2023
7. Labor Day – Monday, September 4, 2023
8. Veterans Day – Friday, November 10, 2023
9. Thanksgiving Day - Thursday, November 23, 2023
10. The day following Thanksgiving Day - Friday, November 24, 2023
11. Christmas Day - Monday, December 25, 2023
12. The day following Christmas – Observed – Tuesday, December 26, 2022
13. New Year's Day - Monday, January 1, 2024

C. Exceptions to this section will only be permitted upon written authorization from the Engineer.

1.07 BUILDER'S RISK INSURANCE WAIVED

A. The Builder's Risk Insurance policy requirement set forth in subsequent section 4.3(B)(3) of the General Conditions is hereby waived and does not apply to this Contract.

1.08 VERIFICATION OF CONDITIONS

A. The Contractor shall verify all existing conditions before commencing work. All discrepancies between the plans and actual field conditions shall be immediately reported to the Engineer who shall determine if modifications in the work are

necessary. The Contractor shall not modify the work without prior authorization from the Project Landscape Architect.

1.09 COORDINATION AND COOPERATION

A. Refer to Article 2.4 of the General Conditions – Coordination of Work.

B. The work shall be conducted under the general observation of the Engineer and shall be subject to inspection by the City of their representatives to assure strict compliance with the requirements of the Contract Documents, and all applicable building codes and other regulations. The authorized representative of the Engineer on the project site shall be those representatives or consultants designated by the Engineer to act on behalf of the City.

C. One or more Inspectors shall periodically review the Contractor's work as the project progresses to verify conformance with the Contract Documents. The presence of the Inspectors, however, shall not relieve the Contractor of the responsibility for the proper execution of the work in accordance with all requirements of the Contract Documents and applicable building codes or other regulations. Compliance is distinctly a duty of the Contractor, and said duty shall not be avoided by any act or omission on the part of the Inspector(s).

D. All materials and articles furnished by the Contractor shall be subject to exhaustive inspection, and no material or articles shall be used in the work until it has been inspected and accepted by the Engineer.

E. The Contractor shall be responsible for the coordination of all the work and the coordination of the work of the subcontractors. The Contractor shall not delegate coordination to any subcontractor. The Contractor's on-site supervisory person shall be present and represent the Contractor whenever a meeting is held that involves any interface between the City and any subcontractors or suppliers. The Contractor shall resolve differences or disputes between subcontractors concerning coordination, interfaces, or extent or work.

F. The Contractor shall coordinate all inspections governed by permits obtained in conjunction with the work. The Contractor shall schedule all inspections with adequate advance notice, and in accordance with the requirements of the permit issuer, to assure no delays while waiting for an inspector to review the work before proceeding.

G. It shall be the responsibility of the Contractor to coordinate all necessary utility work with the appropriate utility company. The request for work to be done by the utility company affected shall be made in sufficient time so that the utility company may perform their work in time to prevent delays to the project schedule.

H. The Contractor shall cooperate fully with all utility forces of the City or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the Work, and shall schedule the Work so as to minimize interference with said relocation, altering, or other rearranging of facilities.

1.10 MAINTAINING TRAFFIC AND PUBLIC SAFETY

A. Refer to Section 01 55 27 “Maintenance of Traffic and Access” found in Article 15 herein.

1.11 OBSTRUCTIONS

A. The Contractor shall verify all existing conditions before commencing work. All discrepancies between the plans and actual field conditions shall be immediately reported to the Engineer, who shall determine if modifications to the work are necessary. The Contractor shall not modify the work without prior authorization from the Engineer. Any removal, repair, or replacement caused by the Contractor’s failure to recognize or report unsuitable conditions shall be performed by the Contractor at the Contractor’s sole cost and expense.

B. Protection and repair of damage of laterals and appurtenances shall be the responsibility of the Contractor.

C. In the event that water services are broken or damaged between the meter and the point of service, the Contractor shall immediately at his own expense, repair such damage, in a manner satisfactory to the Engineer, in order that the water supply will not be interrupted for a period greater than one hour. If such interruption is sustained, it shall be the Contractor’s responsibility to notify the occupants of the premises to which said services are connected so that no damage will occur on said premises. Whenever damage is done to water meters, services between the Water District mains and said meters, fire hydrants or other appurtenances, the Water District forces shall make such needed repairs at the Contractor’s expense.

D. In the event damage is done to any gas, electric, or telephone facility by the Contractor, he shall notify the respective utility company. Repairs shall be made by the utility company at the Contractor’s expense.

E. In the event that sanitary sewer laterals are broken or damaged between the point of service and the sanitary main, the Contractor shall immediately, at his own expense, repair such damage, in a temporary manner satisfactory to the Engineer, in order that service will not be interrupted for a period greater than one hour. When such interruption occurs, it shall be the Contractor's responsibility to notify the occupants of the premises to which said service is connected so that no damage will occur on said premises and to notify Union Sanitary District so that permanent repairs may be made at the Contractor’s expense.

F. The Contractor shall take precautions to prevent any damages to existing improvements and landscaping, which is to remain in place, in the work area on both public and private properties. If the existing improvements or landscaping on public or private property are damaged, the Contractor shall repair such damage, at his own expense, to the satisfaction of the Engineer.

G. The Contractor shall verify the exact location of all existing utilities and shall notify the Engineer and the regional notification center for operator of subsurface installations at least two working days, but not more than 14 calendar days, prior to performing any excavation or other work close to any underground pipeline, conduit, duct, wire, or to the structure. The regional notification center is:

UNDERGROUND SERVICE ALERT (USA) TEL: 1-800-227-2600

H. At those sites not serviced by Underground Service Alert, the Contractor shall be responsible for locating all existing utilities prior to commencing any work. Contractor shall pothole utilities to determine approximate depths of utilities.

I. Measurement and Payment: Payment for conforming to the provisions in this section "Obstructions" not otherwise provided for, shall be considered as included in the prices paid line for the various items of work involved and no additional compensation will be allowed therefor.

1.12 WATERING

A. It shall be the responsibility of the contractor to contact the local utility district in order to obtain a temporary water meter, and provide their own source of water for all elements of work in this project. The City shall not provide a source of water.

B. If the Contractor uses non-potable water on the project, the sources and discharge of non-potable water shall meet the California Department of Health Services water reclamation criteria and the Regional Water Quality Control Board requirements. The Contractor shall obtain either a waste water discharge permit or a waiver from the Regional Water Quality Control Board. Copies of permits or waivers from the Regional Water Quality Control Board shall be delivered to the Engineer before using non-potable water on the project.

C. Non-potable water, if used, shall not be conveyed in tanks or drain pipes which will be used to convey potable water. There shall be no connection between non-potable water supplies and potable water supplies. Non-potable water supply, tanks, pipes, and other conveyances of non-potable water shall be labeled:

NONPOTABLE WATER

DO NOT DRINK

1.13 TESTING

A. Testing is not a duty of the City and is solely at the discretion of the Engineer. Non-testing by the City does not release the Contractor from their responsibility to perform all work in conformance to the Standard Specifications and these Special Provisions.

1.14 CLEAN-UP

A. Cleaning and cleanup during construction

1. The entire site of the Work, including the Contractor's work and storage areas, shall be kept in a neat, clean, and orderly condition at all times during the course of this Contract. The City's Engineer may, at any time during construction, order a general cleanup of the site as a part of the Work, and there shall be no additional cost to the City therefore. The Contractor shall provide general daily clean-up and disposal service for removal of waste, rubbish, trash, and debris away from the Worksite.

2. Perform cleaning of all facilities and ancillary buildings as required during construction to prevent accumulations of dust, dirt, soil, trash, and debris, so that a clean and safe working environment will be present at all times.

3. Walkways over exposed earth surfaces shall also be kept neat and free of pebbles and other obstacles to walking comfortably, equivalent to broom clean of paved surfaces.

4. The Contractor shall remove all graffiti placed during the course of the Work within the Contractor's enclosed secured areas at the work site. The Contractor shall remove the graffiti within 24 hours after its detection in these areas.

1.15 DUST CONTROL

A. Schedule operations to prevent dust and other contaminants, resulting from Contractor's activities and cleaning operations, from contaminating neighboring residences and other structures and businesses.

1.16 DISPOSAL OF DEBRIS

A. Dispose of waste, trash, and debris in a safe, acceptable manner, in accordance with applicable laws and ordinances and as prescribed by authorities having jurisdiction.

B. Bury no waste material and debris on the site.

C. Burning of trash and debris on the site will not be permitted.

D. Refer to Section 01 74 19 "Construction and Demolition Waste Management" for coordination of disposal of trash and debris with Republic Services.

E. Location of disposal site for trash and debris and length of haul are the Contractor's responsibility.

1.17 FINAL SITE CLEANUP

A. Prior to Final Inspection, thoroughly clean the entire site and put it into a clean and neat, acceptable condition. Remove from the site all construction waste and unused materials, dunnage, loose rock and stones, excess earth, and debris of any description resulting from the Work.

B. Hose down and scrub clean where necessary all pavement, vertical surfaces of concrete and masonry, and paved walks. Any runoff from this activity must be vacuumed or diverted as necessary away from the underground storm drain system.

C. Thoroughly remove mortar droppings from concrete slabs and pavement where they occur.

D. Free and clear all new and existing drainage systems.

E. Clean and protect all conduit openings.

F. Prior to Final Inspection, the Contractor shall remove all markings from streets, sidewalks, walls and other City facilities within the enclosed secured area at the work site.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions in this Section, "**Supplemental to the General Conditions"**, will be considered as included in the price paid for various contract items of work and no additional compensation will be allowed.

END OF SECTION

SECTION 01 25 00 Product Substitution Procedures

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Administrative and procedural requirements for handling requests for substitution made after Intent to Award of Contract.

1.02 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by Contractor after Intent to Award of Contract are considered to be requests for substitutions. Following are not considered to be requests for substitutions:

1. Revisions to Contract Documents requested by City, Supervising Construction Coordinator, Project Manager, or Project Landscape Architect.
2. Specified options of products and construction methods included in Contract Documents.
3. Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.
4. Substitutions requested during bidding period, and accepted by Addendum prior to Intent to Award of Contract, are included in Contract Documents and are not subject to requirements specified in this Section for Substitutions.

1.03 SUBMITTALS

A. Requests for substitutions will not be considered before selection of Contractor. Substitutions will not be considered when:

1. Indicated on shop drawings or product data submittals without separate formal request.
2. Requested directly by subcontractor or supplier.
3. Acceptance will require substantial revision of Contract Documents.
4. Proposed changes are not in keeping with general intent of Contract Documents.

B. Requests for substitution will be considered only within thirty (30) working days after Contractor selection and Intent to Award to the Contractor. The Contractor hereby agrees that failure to submit alternative product requests within the stipulated time period shall act as a waiver of any future rights to offer such substitutes, and the Contractor hereby agrees to provide one of the specific products called for in the Contract Documents. Other requests will be considered only when:

1. Specified product or method of construction cannot be provided within Contract Time. Supervising Construction Coordinator will not consider request if product or method cannot be provided as result of failure to pursue Work promptly or coordinate activities properly.
2. Subsequent information or changes indicate specified product will not perform as intended.

3. Requested substitution offers City substantial advantage, in cost, time, energy conservation, or other considerations, after deducting additionally responsibilities City must assume. City's additional responsibilities include compensation to Architect for redesign and evaluation services, compensation to Supervising Construction Coordinator for additional processing and evaluation services, increase costs of other construction by Owner, and similar considerations.

    a. Supervising Construction Coordinator's time shall be compensated a specified for compensation of time in subsequent article titled Modification of Documents.

4. Specified product or method of construction cannot receive necessary approval by governing authority, and requested substitution can be approved.

5. Specified product or method of construction cannot be provided in manner that is compatible with other materials and where Contractor certified that substitution will overcome incompatibility.

6. Specified product or method of construction cannot be coordinated with other materials and where Contractor certifies that proposed substitution can be coordinated.

7. Specified product or method of construction cannot provide warranty required by Contract Documents and where Contractor certifies that proposed substitution provides required warranty.

C. Do not order or install substitute products without written acceptance.

D. Only one (1) request for substitution for each product will be considered. When substitution is not accepted, provide specified product.

E. Project Manager, or Project Landscape Architect, will determine acceptability of substitutions.

F. Submit two (2) copies of each request to the Project Manager, or Project Landscape Architect, through the Supervising Construction Coordinator. Requests should be on a form entitled "Substitution Request Form". Submit separate form for each substitution, and include the following information, at minimum:

1. Identify products by Specification Section and Article numbers.

2. Provide manufacturer's name and address, trade name of products, and model or catalog number.

3. List fabricators and suppliers as appropriate.

4. Document each request with complete data substantiating compliance of proposed substitution with requirements of Contract Documents including independent laboratory testing reports, approval numbers, listings, and approved assembly descriptions as requested by Supervising Construction Coordinator, Project Manager, or Project Landscape Architect, or as required by agencies having jurisdiction.

5. Attach product data as specified in Section 01 33 23 "Shop Drawings. Product data and Samples".

6. Give itemized comparison of proposed substitution with specified product, listing variation, and reference to Specification Section and Article numbers.
7. Give quality and performance comparison between proposed substitution and specified product.
8. Submit written certification from manufacturer that proposed substitution is appropriate for this application.
9. List availability of maintenance services and replacement materials.
10. State effect of substitution on construction schedule, and changes required in other Work or products.

G. By making request for substitutions, Contractor:

1. Represents that Contractor has personally investigated proposed substitute product and determined that it is equal to or superior in all respects to that specified.
2. Represents that Contractor will provide same warranty for substitution that Contractor would for that specified.
3. Will coordinate installation of accepted substitute, making such changes as may be required for Work to be compatible with substrates and adjacent materials, and complete in all respects.
4. Waive claims for additional time related to substitution which may later become apparent.
5. Certifies that cost data presented is complete and includes related costs under this Contract, including redesign costs, and waives claims for additional costs related to substitution which may later become apparent.

H. Modification of Documents: Where substitution required, for proper installation, changes to design of Work as indicated on accepted Shop Drawings, furnish drawings and specifications prepared by and bearing seal of licensed architect and engineers as appropriate, revising Contract Documents.

1. Submit revised Documents for acceptance in accordance with Section 01 30 00.
2. Revised Drawings: Sufficiently complete for proper installation of substitution and related Work.
3. If, in the Project Manager, or Project Landscape Architect's, sole judgment, proposed substitution is of such significance or deals with product or system affecting basic design or aesthetics, Contractor shall pay the Project Manager, or Project Landscape Architect, for changes required to Contract Documents as follows:
    a. Reimburse City for time spent in changing Contract Documents at rate of 3.25 times rate of Direct Personnel Expense (DPE). DPE is defined as direct salaries of personnel engaged on Project and portion of costs of mandatory, and customary contributions and benefits related thereto, including employment taxes and other statutory employee benefits, insurance, sick leave, holidays, vacations, pensions, and similar contribution and benefits.

4. Contractor: Responsible for cost of revised Documents, obtaining and paying for review and plan check by authorities having jurisdiction, and cost of revised construction.

5. Revised drawings: Submit with Record Documents.

1.04 SUBMITTAL PROCEDURES

A. Supervising Construction Coordinator's Action: If necessary, Project Manager, or Project Landscape Architect, through Supervising Construction Coordinator, will request additional information or documentation for evaluation within one (1) week of receipt of request for substitution. Supervising Construction Coordinator will notify Contractor of acceptance or rejection of substitution within two (2) weeks of receipt of request of additional information or documentation, whichever is later. Acceptance will be in form of a Field Order or Field Change Order.

1. Supervising Construction Coordinator, Project Manager, or Project Landscape Architect, will not make exhaustive attempt to determine products proposed for substitution are equivalent to, or can be modified in order to be equivalent to specified products.

a. Where extensive investigation is required by Project Manager, or Project Landscape Architect, as determined by Supervising Construction Coordinator, Contractor shall reimburse Owner for Supervising Construction Coordinator, Project Manager, or Project Landscape Architect's time spent in processing additional re-submittals at rate of 3.25 times rate of Direct Personnel Expense (DPE).

2. Use product specified if the Project Manager, Project Landscape Architect, or Supervising Construction Coordinator cannot make decision on use of proposed substitute with time allocated.

3. If accepted by the Project Manager, or Project Landscape Architect, products proposed for substitution are accepted subject to modifications by manufacturer, if necessary, to meet detailed requirements of Drawings, and Specifications.

B. For Accepted Products: Submit shop drawings, product data, and samples in accordance with Section 01 32 23.

C. Contractor's submittal, and Project Landscape Architect's and Supervising Construction Coordinator's acceptance of Shop Drawings, Product Data, or Samples for construction activities not complying with Contract Documents to not constitute acceptable or valid request of substitution, nor do they constitute approval.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 MEASUREMENT AND PAYMENT

A. Full compensation for conforming to the provisions in this section "**Product Substitutions**," not otherwise provided for, shall be considered as included in prices

paid for the various contract items of work involved and no additional compensation will be allowed therefor.

B. No additional payment over the original bid prices will be allowed when approved substitutes are used in lieu of the originally specified materials.

END OF SECTION

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SECTION 01 30 00 Submittal Procedures

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. General

Drawings and General Conditions of the Contract, including Division 1 Specifications, apply to this Section.

1. Refer to General Conditions, Part 2.5 Submittals.
2. Section 01 25 00 “Product Substitution Procedures” for product substitutions.
3. Section 01 60 00 “Product Requirements” for Product Options.

B. Timing and Manner of Submission:

1. The City **WILL** provide a written notice indicating the Council award and requesting for submittals to begin. It is the contractor’s responsibility to provide submittals as required, and described, in each section of the special provisions, which may include providing submittals prior to the issuance of the notice beginning of the Contract Time.
2. The intent of beginning the submittal process upon City Council award is to expedite this process and allow the Contractor the ability to begin the order and purchase of materials, especially for long lead-time items, in order to complete the contract work within the stated contract time.
3. Submittals shall begin to be provided to the City immediately after award of contract by City Council. Do not submit all at one time. Submit in accordance with the sequence of procurement, fabrication and construction.
4. Make submittals far enough in advance of scheduled dates of installation to allow the time required for reviews, for securing necessary approvals, for possible revision and re-submittal, and for placing orders and securing delivery.
5. For items with long lead times, those items will be submitted first in order to get review and approvals, and submit for requisition of those items.
6. Submittal quantities:

a. If submitted electronically, provide 1 copy in .pdf format. All electronic .pdf submittals must be followed up with 1 hard copy mailed to the City to ensure the submittal is received.

b. If hard copies are submitted, provide four (4) hard copy submittals.

c. Samples: Provide 1 product sample at the required dimensions described elsewhere in these specifications, for the appropriate products.

C. Required Content

1. Identify each submittal and re-submittal with the following information:

a. Project name and address as they appear on the Contract Documents.

b. Contract name and number.

c. Contractor's name and address.

d. Date of submission.

e. Numbering System: Submittals shall be identified by sequential numbering (ie, 001, 002, 003, etc.) Any re-submittals shall be numbered sequentially according to the original submittal number, followed by the subscript ".1, .2, .3" (ie, 001.1, 001.2, etc.). Submittals and re-submittals shall be kept intact with the original number. Do not add new drawing or information outside the scope of the original submittal, unless specifically requested. Do not assign a new number for a re-submittal.

f. Reference: List Specification Section number and product reference as a cross reference for each submittal.

g. Do not submit separate submittals for items that can be in combined submittals. Only provide separate submittals if specific items in question require re-submittal due to a "revise and resubmit" request.

2. Identify each submittal with the following additional identification:

a. Contractor's stamp with initials or signature, certifying to review of submittal, compliance with Contract Documents, coordination with other impacted work, and verification of field measurements.

b. Drawing and Specification Section numbers to which the submittal applies.

c. Subcontractor's or supplier's name and address.

d. Name and telephone number of the individual to contact for additional information regarding the submittal.

e. Whether it is an original or a re-submittal.

3. Coordination of Submittals: Prior to submittal for the Project Manager's review, as applicable, fully coordinate material as follows:

a. Determine and verify field dimensions and conditions, materials, catalog numbers, and similar data.

b. Coordinate shop drawing submittals with previously issued Addenda and Information Bulletins.

c. Coordinate with the various types of Work and public agencies involved.

d. Secure necessary approvals from public agencies and others and signify by stamp, or other means, that approvals have been secured.

e. Unless otherwise specifically permitted by the Project Manager, make submittals in groups containing all associated items.

4. Completeness: Submittals shall be complete; partial submittals will be rejected for not complying with the Contract Documents.

D. Required Corrections and Re-submittals:

1. Subject to same terms and conditions as original submittal.

2. Project Manager will accept not more than one (1) re-submittal.

a. Should additional re-submittals be required, Contractor shall reimburse City for Construction Manager's account and Project Manager's account for time spent in processing additional re-submittals at rate of 3.25 times rate of Direct Personnel Expense (DPE). Direct Personnel Expense is defined as direct salaries of Construction Manager's and Project Manager's personnel engaged on Project and portion of costs of mandatory, and customary contributions and benefits related thereto, including employment taxes and other statutory employee benefits, insurance, sick leave, holidays, vacations, pensions, and similar contributions and benefits.

E. Effect of Review and Acknowledgement by City

1. The Project Manager, as applicable, will review the Submittals or shop Drawings; mark the submittal or shop drawings with required revisions; stamp the submittal or shop drawings and indicate "No Exceptions Taken," "Make Changes Noted," or "Revise and Resubmit". "Revise and Resubmit" stamps shall not be construed by the Contractor as a valid reason for an extension of time request.

2. Review the returned submittal or shop drawings and take appropriate action as indicated.

   a. If submittal or shop drawings are marked "Revise and Resubmit," make revisions and indicate them with a "cloud," stamp and date, and resubmit in the same manner and number as for the original submittal.

   b. If submittal or shop drawings are marked "No Exceptions Taken" or "Make Changes Noted", print and distribute copies for Owner and Inspector, as well as those required for Contractor and Subcontractors.

3. The Project Manager, as applicable, may review at their discretion up to one re-submittal and take action, as appropriate, in the same manner as for the original submittal. If more than one re-submittal is required, any associated costs as a result of additional reviews shall be an extra service of the Project Manager, or his consultants, and will be processed as a deductive Change Order.

4. As with the original submittal, review the returned submittals or shop drawings and take appropriate action as indicated. As specified hereinabove, resubmit and revise until final action by the Project Manager, as applicable. Final action is signified by the markings "No Exceptions Noted," or "Make Changes Noted," on the returned shop drawings.

5. Following final action by the Project Manager, the Contractor shall make copies and distribute as required for accomplishment and inspection of the indicated Work.

6. Only those submittals or shop drawings which bear stamps showing final review of the Contractor, or the Project Manager, or the Project Manager's consultants, or the City's consultants, as applicable, shall be used.

7. Reproduction and Mailing Costs: The Contractor shall pay the reproduction and mailing costs of the sepias and all prints.

F. Enforcement: Refer to General Conditions, Part 2.5

G Excessive RFI's: Refer to General Conditions, Part 2.5

H. Additional Requirements for Submittals: See Part 3.01 herein

1.02 SHOP DRAWINGS, SUBMITTALS, PRODUCT DATA, SAMPLES, AND OTHER SUBMITTALS

A. Shop Drawings:

1. Submit copies, as required herein.

B. Product Data:

1. Comply with all requirements for submittals of material chemical content, ventilation requirements during installation, maintenance requirements, and emissions test data specified in Division 1 and technical Specification Sections.

2. Submit in the quantity required to be returned, together with four additional copies each of brochures, catalog cuts, and similar material for mechanical, electrical, hardware, and elevator items; and three additional copies for all others.

3. Review, processing, and distribution of Product Data shall be the same as that for Shop Drawings.

C. Samples:

1. Submit in the size specified in the individual Specification SECTIONS, and in the quantity required to be returned, together with one additional Sample, which will be retained by the Project Manager or his consultants, or the Owner's consultants, as applicable.

2. Where Samples have natural variations in texture, color, or dimension, submit Samples showing the extreme range plus the middle range of variation.

3. Ship samples to the Project Manager's or consultant's office, carriage prepaid. Samples to be returned to the Contractor will be shipped, carriage collect.

4. Patterns and Colors: Unless the exact pattern and color of a product are indicated in the Contract Documents, whenever a choice of pattern or color is available for a product, submit accurate color charts and pattern charts to the Project Manager for his review and selection.

5. Other Submittals: Submit as specified in the individual Specification Section.

6. Certificates of Compliance:

a. Submit certificates of compliance with the associated Shop Drawings, Product Data, Samples, and other submittals required for the product.

b. Submit on 8-1/2 x 11 inch white paper.

c. Submit four (4) copies.

d. The Project Manager will retain the certificates of compliance; no review reply is intended.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 SUBMITTALS REQUIRED AT THE PRECONSTRUCTION MEETING

A. The Contractor shall provide six (6) copies of each of the following submittals to the Engineer at the pre-construction meeting, if these have not been previously provided:

1. Designation of Superintendent

2. A list of all permits and licenses the Contractor has obtained indicating the agency that issued the permit or if the permit has not been obtained, the expected date of receipt of the permit.

3. **24 Hour Contact Number** - The Contractor shall assign a Project Superintendent who has the complete authority to make decisions on behalf of the Contractor. The Project Superintendent shall have the ability to speak, read and write in English. The Project Superintendent shall be on the job at all times during the construction and shall be available and on call 24 hours a day for the duration of the project. The Project Superintendent shall meet with the Engineer at least once per day while the project is actively under construction. Additionally, the Project Engineer shall attend all regularly scheduled job progress meetings. The Contractor shall provide to the Engineer and the Fremont Police Department a 24-hour contact number for the Project Superintendent. This number shall not direct calls to a recorder or other message taking service.

4. Construction Schedule

5. A **Waste Handling Plan** (See Section 01 74 19) is required within 10 days of the issuance of a Notice to Proceed.

6. Health and Safety Plan (HASP): The Contractor shall submit a preliminary HASP at the pre- construction meeting for the review and approval of the Engineer. All edits and questions must be addressed and resolved, and a final HASP must be submitted prior to start of Work. The HASP shall conform to the requirements of Title 8 of the CCR and title 29 of the CFR, as well as all other relevant statutes and requirements.

7. Site Operations Workplan (SOW): A preliminary SOW shall be submitted for review and approval by the Engineer at the pre-construction meeting. The SOW shall include a detailed description of any conflicts between proposed equipment locations and landscape /tree protection measures, along with a proposed remedial plan. All edits and questions must be addressed and resolved, and a final SOW must be submitted prior to start of Work. The SOW shall identify the work areas, including a site plan showing location of offices, access, proposed stockpile/staging areas, equipment operation and storage areas, landscape maintenance, and storm water runoff control measures. The SOW shall describe the Contractor's sequence and schedule of detailed activities for demolition, including: mobilization; termination of utilities at the property boundaries or as directed by the City; removal, segregation, and control of materials identified as potentially hazardous requiring disposal off-site; general building salvaging, recycling, and demolition; removal and disposal of hazardous and non-hazardous materials off-site; providing, placing, and compaction of fill material in basement

excavation; grading; site work, and demobilization. The SOW shall also include a list of the equipment to be used for each phase of work, as well as minimum operating distances from active utilities, existing trees to remain, the skate park, the library, existing parking lots, hardscapes to remain, and a discussion of anticipated problems or difficulties and possible responses. The Contractor shall submit, as part of the SOW, a plan for minimizing the amount of dust and noise affecting the corporation yard. A California-registered engineer, or equivalent shall stamp the plan.

8. General Contractor shall provide a list of all proposed project submittals, if not previously submitted for review.

9. Certified Payroll Reports and Statements of Compliance.

3.02 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions in this section **"Submittals,"** not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

END OF SECTION

SECTION 01 32 00 Project Progress Schedule

PART 1 GENERAL

1.01 RELATED SECTION

A. General Conditions, Article 5, Part 5.2 “Schedule Requirements”.

1.02 DEFINITIONS

A. Baseline Schedule: The first schedule submitted by the Contractor and approved by the Engineer in accordance with Article 5.2(A) of the General Conditions.

B. Progress Schedule: Subsequent schedules submitted by the Contractor and approved by the Engineer that modify the Baseline Schedule, in accordance with Article 5.2(C) of the General Provisions.

C. Contract Schedule: The Baseline Schedule and all subsequent Progress Schedules.

1.03 INTENTION

A. Schedule: The Project is to be substantially complete, with temporary occupancy, within a total maximum of **forty-five (45) working days** after the date specified in the City’s Notice To Proceed. Final Completion and final occupancy must be achieved within **forty-five (45) working days** after the date specified in the City’s Notice to Proceed, including all punch list items, and acceptance by the City. Refer to Section 3 of the Notice Inviting Sealed Bids for Contract Time.

a. The Baseline schedule must incorporate delivery of long-lead items without any slack in the schedule.

b. Contract Schedules will represent a practical plan to complete the Work within the Contract time(s) of completion as indicated in Article 5 of the project General Conditions, and will convey the Contractor’s intent in the manner of prosecution and progress of the Work.

c. The submittal of the Contract Schedule will be understood to be the Contractor’s representation that the Contract Schedule meets the requirements of the Contract Documents and that the Work will be executed in the sequence and duration indicated in the Contract Schedule.

d. The scheduling and execution of construction in accordance with the Contract Documents are the responsibility of the Contractor. The Contractor will involve and coordinate all Subcontractors and material Suppliers in the development and updating of progress schedules.

B. Progress Schedule shall be the basis for evaluating job progress, payment requests, and time extension requests. Responsibility for developing Critical Path Method (CPM) schedule and monitoring actual progress as compared to Progress Schedule rests with Contractor.

C. The progress schedule shall clearly show sequence and duration of major construction activities, interim milestones or completion dates required in the Contract, and the controlling operation or operations.

D. Failure of Progress Schedule to include any element of the Work or any inaccuracy in

Progress Schedule will not relieve Contractor from responsibility for accomplishing the Work in accordance with the Contract. City's acceptance of schedule shall be for its use in monitoring and evaluating job progress, payment requests, and time extension requests, and shall not, in any manner, impose a duty of care upon City, or act to relieve Contractor of its responsibility for means and methods of construction.

E. Failure of Progress Schedule to include any element of the Work or any inaccuracy in Progress Schedule will not relieve Contractor from responsibility for accomplishing the Work in accordance with the Contract. City's acceptance of schedule shall be for its use in monitoring and evaluating job progress, payment requests, and time extension requests, and shall not, in any manner, impose a duty of care upon City, or act to relieve Contractor of its responsibility for means and methods of construction.

F. City Review of Schedules: Refer to General Conditions, Article 5 (5.2) (B).

1. A schedule must not show completion dates beyond the Contract requirements for the interim target dates, milestones or Contract completion. The Contract completion date shall be based on the working days designated in the Contract and not on a proposed early completion shown in the schedule.

2. The schedule submitted shall meet, in all respects, the time and order of work requirements of the Contract. The work shall be executed in the sequence indicated in the schedule and subsequent updates and revisions. The Contractor shall be responsible for assuring that all work sequences are logical and the schedule shows a coordinated plan for complete performance of the work. Failure of the Contractor to include any element of the work required for the performance of the Contract in the network shall not relieve the Contractor from completing all work within the time limit specified for completion of the Contract. If the Contractor fails to define any element of work, activity, or logic, and the omission of error is discovered by either the Contractor or Engineer, it shall be corrected by the Contractor at the next scheduled monthly update or revision.

3. The Contractor shall allow ten (10) days for the Engineer to review the schedule and provide any comments, a favorable review of the schedule, or request a meeting to review the schedule. When completed, the agreed upon Progress Schedule shall be the one used by the Contractor for planning, organizing, and directing the work, and for reporting progress. Upon agreement, this will be deemed the Original Progress Schedule and shall be updated to reflect the current status of work.

G. Progress Schedule: Shall include or comply with following requirements:

1. Time scaled, cost and resource (labor and major equipment) loaded CPM schedule.

2. Identify the activities which constitute the controlling operations or critical path.

3. Individual activities that are not significant in themselves and create a series of parallel paths shall be grouped within major activities or combined to form a more general major activity. The actual number of activities shall be sufficient to assure adequate planning of the project and to permit monitoring and evaluation of progress and analysis of time impacts and not to primarily manage the various resources that may be used by the Contractor.

4. Major activities are defined as single activities or groups of activities that create a significant portion of the project due to location, related type of work, or common completion dates.
5. Major activities shall have durations of not less than five (5) nor more than twenty (20) working days. Milestone of transitional activities may have a duration of less than five (5) days. Isolated major activities, concurrent, or combined activities may have more than twenty (20) working days when approved by the Engineer.
6. Activity durations shall be total number of actual work days required to perform that activity.
7. The start and completion dates of all items of Work, their major components, and milestone completion dates, if any.
8. City-furnished materials and equipment, if any, identified as separate activities.
9. Activities for maintaining Project Record Documents.
10. Dependencies (or relationships) between activities.
11. Processing/approval of submittals and shop drawings for all Contract-required material and equipment. Activities that are dependent on submittal acceptance or material delivery shall not be scheduled to start earlier than expected acceptance or delivery dates.
    a. Include time for submittals, re-submittals, and reviews by City. Coordinate with accepted schedule for submission of shop drawings, samples and other submittals.
    b. Contractor shall be responsible for all impacts resulting from re-submittal of shop drawings and submittals.
12. Procurement of major equipment, through receipt and inspection at jobsite, identified as separate activity.
    a. Include time for fabrication and delivery of manufactured products for the Work.
    b. Show dependencies between procurement and construction.
13. Activity description; what Work is to be accomplished and where.
14. The total cost of performing each activity shall be total of labor, material, equipment, including overhead and profit of Contractor.
15. Responsibility code for each activity corresponding to Contractor or Subcontractor responsible for performing the Work.
16. Interface with the work of other contractors, City, and agencies such, as but not limited to, utility companies.
17. Show detailed Subcontractor Work activities. In addition, furnish copies of Subcontractor schedules upon which CPM was built.
    a. Also furnish for each Subcontractor, as determined by City, submitted on Subcontractor letterhead a statement certifying that Subcontractor concurs with Contractor's Original CPM Schedule and that Subcontractor's related

schedules have been incorporated, including activity duration, cost and resource loading.

b. Subcontractor schedules shall be independently derived and not a copy of Contractor's schedule.

c. In addition to Contractor's schedule and resource loading, obtain from electrical, mechanical and plumbing Subcontractors, and other subcontractors as required by City, productivity calculations common to their trades, such as units per person day, feet of pipe per day per person, feet of wiring per day per person, and similar information.

d. Furnish schedule for Contractor/Subcontractor CPM schedule meetings which shall be held prior to submission of Original CPM schedule to City. City shall be permitted to attend scheduled meetings as an observer.

18. Activity durations shall be in Work days with the exception of the Plant Establishment Period.

19. Any such agreement shall be formalized by a Change Order. The City shall not pay for acceleration, if the contractor requests an earlier (Advanced) time of completion.

20. The City is not required to accept an earlier (advanced) schedule, i.e., one that shows early completion dates for the Contract Working Days.

21. The Contractor shall not be entitled to extra compensation in the event agreement is reached on an earlier (advanced) schedule and Contractor completes his Work, for whatever reason, beyond completion date shown in earlier (advanced) schedule but within the Contract Times.

22. A schedule showing the work completed in less than the Contract Times, which has been accepted by City, shall be considered to have Project Float. The Project Float is the time between the scheduled completion of the work and Contract Substantial Completion. Project Float is a resource available to both City and the Contractor.

23. Float Ownership: Refer to Article 5 (5.2)(C)(1) of the General Conditions. The Project owns the float. As such, liability for delay of the Completion Date rests with the party whose actions, last in time, actually cause delay to the Completion Date.

a. For example, if Party A uses some, but not all of the float and Party B later uses remainder of the float as well as additional time beyond the float, Party B shall be liable for the time that represents a delay to the Completion Date.

b. Party A would not be responsible for the time since it did not consume all of the float and additional float remained; therefore, the Completion Date was unaffected.

H. Recovery Schedule: Refer to General Conditions, Part 5.2.D

I. Effect of Acknowledgement: Refer to General Conditions, Part 5.2.E

J. Posting: Refer to General Conditions, Part 5.2.F

K. Reservation of Rights: Refer to General Conditions, Part 5.2.G

1. The City reserves the right to require additional submittals from the Contractor, to be submitted at the pre-construction meeting, that are not specifically identified herein. If so requested, the Contractor shall provide the Engineer with six (6) copies of any additional submittals, or if directed, provide all submittal electronically, if they do not coincide with a physical product material.

L. Authorized Working Days and Times: Refer to General Conditions, Part 5.2.H

M. Additional requirements for Work Schedules:

1. Progress Schedule Updates: An update is defined as a regular monthly submittal and review of the schedule to incorporate actual progress to date by activity; any approved time adjustments, anticipated changes to planned activities, and projected completion dates. A revision is defined as a change in the future portion of the schedule that modifies logic, adds or deletes activities, or alters activities, sequences or durations.

2. When the monthly update is completed, the Contractor shall meet with the Engineer to review Contract progress. At that meeting, the Contractor shall identify and discuss potential problem areas; current and anticipated delaying factors and their impacts; actions taken or proposed; proposed changes in schedule; out of sequence work; and any other topics related to job progress or scheduling. The Contractor shall update the most recent schedule to incorporate all current schedule information, including actual progress, approved adjustments of time and proposed changes in sequence and logic.

3. The Engineer may use these and other information in evaluating the effect of the changes, delays, or time savings on the accepted schedule current at the time to determine the applicable adjustment of time, if any to any target date or completion date due to the changes, delays, or time savings.

Part 2 Products

Not Used.

Part 3 Execution

3.01 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions of this section "**Project Progress Schedule**" shall be considered as included in prices paid for various contract items of work involved and no additional compensation will be allowed therefor.

END OF SECTION

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SECTION 01 32 30 Photographic Documentation

PART 1 GENERAL

1.01 GENERAL

A. Photographic documentation performed by the General Contractor and their subcontractors for various milestones in the projects as described herein.

1.02 PHOTOGRAPHIC DOCUMENTATION

A. The Contractor shall take photographs of the existing conditions of the entire jobsite, **including along Contractor's access into the park, existing turf area between two work spaces and along gravel pathway to existing basketball court area**, prior to the start of demolition and construction and monthly after the start of construction, and upon encountering unforeseen underground utilities or other conditions.

1. Prior to construction to document conditions within the work area;
2. Start of construction, including clearing and grubbing and demolition operations, as applicable;
3. Upon encountering unforeseen underground utilities or other conditions
4. Anytime a problem arises that may result in a Notice of Potential Claim and the problems can be illustrated by photographs.
5. Highlights of all formal Inspections; and
6. Highlights of all undergrounding work and utility crossings; and
7. Highlights of the Final Inspection and Acceptance by the District.

B. Photographs shall be provided to the Engineer digitally, by email or thumb drives, or burned to CD's capable of being downloadable to a personal computer on pdf or jpg format with the following requirements:
1. Minimum resolution: 1024 x 768 pixels
2. Colors: 24 bits per pixel.

C. Photographs shall show an unobtrusive time and date indicator on each photo, accurately depicting the time and date when the photography was performed.

D. The following information shall be furnished for each digital photograph in a manner approved by the Engineer.
1. Title of Contract and Contract Number;
2. Identification of subject shown;
3. Station point of camera and direction of view;
4. Time and date taken.

E. CD's or thumb drives shall be labeled with the same identifying information specified above for photographs.

1.03 VIDEO RECORDINGS

A. The Contractor shall provide video recordings to supplement contract photographs of certain construction milestones and events as indicated herein:
   1. Start of construction including clearing and demolition operations, as applicable;
   2. After clearing and cleaning of existing storm drain line at Arroyo Agua Caliente. See Section 02 41 19 "Site Demolition" for additional information.

B. Video recordings shall be standard definition DVD - Video format and stored on a DVD optical disc.

C. Video recordings shall include a complete, clearly spoken narration of the events being photographed. Also, video recordings shall include an unobtrusive time and date indicator on the film, accurately depicting the time and date when the photography was performed.

D. The DVD disc shall be labeled with the same identifying information specified above for photographs. In addition, the narration of each recording shall lead off with this same identifying information.

E. Individual digital video files shall use the file naming convention indicated in 1.02 above, however, the filename shall be modified such that the first character shall be "V" for video instead of "P".

1.04 DISPUTES AND POTENTIAL CLAIMS

A. In the event a problem arises or dispute occurs which may result in a Notice of Potential Claim refer to Article 12 of the General Conditions and the problem or dispute can be illustrated by photographs and DVD recordings, the Contractor shall provide such photographs and DVDs.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 MEASUREMENT AND PAYMENT

A. Full compensation for conforming to the provisions in this section "**Photographic Documentation**," not otherwise provided for, including video recordings, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

END OF SECTION

SECTION 01 33 23 Shop Drawings, Product Data, and Samples

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Definitions

B. Submittals.

C. Shop drawings.

C. Other submittals.

E. Product data.

F. Samples

1.02 RELATED SECTIONS

A. Refer to Article 2.6 of the General Conditions – Shop Drawings

1.03 DEFINITIONS

A. The term “Shop Drawings,” as used herein, means drawings, plan details or other graphical depictions prepared by or on behalf of Contractor, and subject to City approval, which are intended to provide details for fabrication, erection, installation, application, layout, settings, and the like, of items required by or shown in the Drawings and Specifications, including lists or schedules of materials and equipment, manufacturer’s standard drawings, wiring and control diagrams, all other drawings as may be required to show that the materials, equipment, and systems, and the positions thereof.

B. The term “product data,” as used herein, includes manufacturer-prepared descriptive literature, catalog sheets, brochures, performance data, test data, printed diagrams, schedules, illustrations, and other information furnished by the Contractor or the various product and materials suppliers to illustrate and describe a product, material, system, or assembly for some portion of the Work.

C. The term “samples,” as used herein, are physical examples which illustrate materials, equipment, colors, textures, finishes, functions, configuration, and work quality, and establish the standards of quality and utility by which the Work will be judged for acceptance.

1.04 SUBMITTALS

A. Shop drawings, product data, and samples will be submitted in accordance with Article 2.6 of the General Conditions and Article 15 of the Special Conditions, Section 01 30 00, “Submittal Procedures”.

B. Review processing and distribution will the same as the Submittal processing.

C. Quantities:

1. Four (4) full size bond prints of each shop drawing and one (1) scanned electronic copy.

2. Four (4) copies of manufacturers' standard schematic drawings and one (1) scanned electronic copy.
3. Four (4) copies of Contractor's or manufacturers' calculations, and six (6) copies of manufacturers' standard data, and one (1) scanned electronic copy.
4. Four (4) copies of manufacturers' printed installation, assembly, erection, application, and placement instructions, and one (1) scanned electronic copy.
5. Two (2) of each sample item specified in the various Specification Sections, unless otherwise specified.
    a. Where samples have natural variations in texture, color, or dimension, submit samples showing the extreme range plus the middle range of variation.
    b. Unless the exact pattern and color of a product are indicated in the Contract Drawings or Specifications, whenever a choice of pattern or color is available for a product, submit accurate color charts and pattern charts to the Engineer for review and selection.
6. Four (4) copies of inspection reports, test reports, and certificates of compliance.
7. Where submittals are submitted to the Engineer for information or record purposes, submit two copies.
8. Where permits and licenses and other such documents are obtained in the City's name, submit the original and one copy.

1.05 SHOP DRAWINGS

A. Shop drawings will be prepared in accordance with ANSI Y14.1, Drafting Standards Manual, and the following requirements:

1. Shop drawings will be limited to the following standard sizes in inches: Maximum size will be 22 inches by 34 inches.

Name	WIDTH (Vertical)	LENGTH (Horizontal)
ANSI A	8 1/2 inches (215.9mm)	11.0 inches (279.4mm)
ANSI B	11.0 inches (279.4mm)	17.0 inches (431.8mm)
ANSI C	17.0 inches (431.8mm)	22.0 inches (558.8mm)
ANSI D	22.0 inches (558.8mm)	34.0 inches (863.6mm) (Maximum)

2. Each shop drawing will have the following information in the title block:
    a. Project name and contract number
    b. Shop drawing number, date, title, revision number, and sheet number
    c. Contract number, Contract sheet number, Contract page number.
    d. Contractor's name and address.
    e. Subcontractor/manufacturer/supplier name and address (if applicable)
    f. Name of installation location.

g. Specifications section(s) and/or drawings and detail numbers.

3. Each shop drawing will use symbols from one standard reference source. The Contractor will furnish a complete symbol list that includes non-standard symbols used on the shop drawing. Symbols used will conform to the list of standard references as listed below:

   a. Institute of Electrical and Electronic Engineers (IEEE).

   b. National Electric Manufacturer's Association (NEMA).

   c. ANSI Y14: American National Standards Institute "Drafting Standards Manual".

   d. ANSI Y10: American National Standards Institute "Letter Symbols for Drafting".

   e. ANSI Y32: American National Standards Institute "Graphic Symbols for Drafting".

4. Each shop drawing will include details necessary for the procurement, installation, maintenance, and repair of all components or facilities equipment provided. Change Order notices that are attached to shop drawings will not constitute revised shop drawings. Each shop drawing will include all changes and be upgraded to reflect the latest configuration.

B. Shop drawings will be submitted in accordance with the following requirements:

1. The first shop drawing submitted by the Contractor will be reviewed for conformance to the requirements herein. Once approval is given, the Contractor will use this approved drawing as the standard, and prepare subsequent drawings to a quality equal to or better than the approved standard.

2. Each shop drawing prepared and submitted for review will have in the lower right hand corner, just above the title block, a five-inch square blank space in which the Engineer may indicate the action taken.

3. All final approved shop drawings and catalog cuts will be submitted to the Engineer upon completion of the Work as specified in Article 15 of the Special Conditions, Section 01 78 39, Project Record Documents.

C. When specified, shop drawings that are prepared and submitted electronically, shall be created using AutoCAD. Shop drawings to be prepared and submitted electronically include shop drawings which will be utilized as illustrations and drawings in Operation and Maintenance Manuals.

1.06 OTHER SUBMITTALS

Other submittals will be furnished upon request for the Engineer's approval to verify compliance of all equipment and materials with the Contract Documents. These submittals will include in addition to drawings: catalog cuts, certifications of compliance, or any other substantiating information or samples of material items as necessary.

1.07 PRODUCT DATA

A. The Contractor will modify manufacturers' standard diagrams, charts, illustrations, brochures, calculations, schematics, catalog cuts, and other descriptive data to delete information which is not applicable to the Contract. The Contractor will supplement standard information with additional information applicable to this Contract, and indicate dimensions, clearances, performance characteristics, capacities, wiring and other diagrams, and controls.

B. If the Contractor utilizes drawings prepared by others, such drawings may include the standards and symbols of others if the drawings are a mix of existing product drawings and drawings prepared specifically for this Contract. In the event others provide drawings prepared specifically for this Contract, such drawings will conform in symbols, media and standards to the Contractor's drawings.

C. The Contractor will modify the manufacturer's printed installation, erection, application, and placing instructions to delete information which is not applicable to the Contract.

D. Submittals will include the following:

1. Date and revision dates.
2. Contract title and number.
3. Reference Contract Drawing numbers.
4. Applicable Contract Specification Section numbers.
5. Identification of product by either description, model number, style number, serial number, or lot number.
6. The names of the Contractor, Subcontractors, Suppliers, and manufacturers as applicable.
7. Applicable standards, such as ASTM or Federal specification numbers.

E. Certificates of Compliance:

1. The Engineer may permit the use of certain materials prior to sampling and testing if accompanied by a certificate of compliance stating that the materials involved comply in all respects with the requirements of the Contract Documents. The certificate will be signed by the manufacturer of the material. A certificate of compliance will be furnished with each lot of material delivered to the Work, and the lot so certified will be clearly identified in the certificate.
2. All materials used on the basis of a certificate of compliance may be sampled and tested at any time. The fact that material is used on the basis of a certificate of compliance will not relieve the Contractor of responsibility for incorporating material in the Work which conforms to the requirements of the Contract Documents. Any such material not conforming to such requirements will be subject to rejection whether in place or not.
3. The Engineer reserves the right to refuse the use of material submitted for approval solely on the basis of a certificate of compliance.

4. The form of the certificate of compliance and its disposition will be as approved by the Engineer.

1.08 SAMPLES

A. The Contractor will furnish to the Engineer samples required by the Contract Documents. Samples will be submitted without charge, with shipping charges prepaid. Materials for which samples are required will not be used in the Work until approved in writing by the Engineer.

B. Sample Label: Each sample will be labeled with the following data:

1. Name, number, and location on project;
2. Name of Contractor;
3. Material or equipment represented, and location in the project;
4. Name of producer, brand, trade name if applicable, and place of origin; and
5. Date of submittal.

C. The Contractor will forward a letter in triplicate to the Engineer submitting each shipment of samples and containing the information listed on the Sample Label specified herein. Approval of a sample will be only for the characteristics and use named in the submittal and approval, and will not be construed to change or modify any Contract requirement. Before submitting samples, the Contractor will assure itself that the materials or equipment will be available in the quantities required in the Contract, as no change or substitution will be permitted after a sample has been approved unless such change or substitution is approved by the Engineer in writing.

D. Samples of material from local sources will be taken by or in the presence of the Engineer. Samples taken otherwise will not be considered for testing.

E. Inspection and tests will be made, but it is understood that such inspections and tests, if made at any point other than the point of incorporation in the Work, in no way will be considered as a guaranty of acceptance of any material which may be delivered later for incorporation in the Work.

F. Approved samples not damaged in testing may be incorporated in the finished work if marked for identification and approved by the Engineer. Materials incorporated in the Work will match the approved samples.

G. Failure of any material to pass the specified tests will be sufficient cause for refusal to consider, under the Contract, any further samples of the same brand, make, or source of that material. The Engineer reserves the right to disapprove any material which has previously proven unsatisfactory in service.

H. Samples of material delivered to the site or installed in place may be taken by the Engineer for testing. Failure of samples to meet Contract requirements will annul previous approvals of the item tested.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions in this Section, "**Shop Drawings, Product Data, and Samples**", will be considered as included in the price paid for various contract items of work and no additional compensation will be allowed therefor.

END OF SECTION

SECTION 01 40 00 Testing and Inspection

PART 1 GENERAL

1.04 RELATED SECTIONS

A. General Conditions, Article 7.8 “Testing and Inspection”

J. Section 01 45 00 “Quality Control”

1.05 SCOPE

A. Testing is not a duty of the City and is solely at the discretion of the Project Engineer. Non-testing by the City does not release the Contractor from their responsibility to perform all work in conformance to the Standard Specifications and these Special Provisions.

K. At the City’s discretion, compaction testing will be performed by the City’s testing laboratory and staff, or by an independent testing laboratory, currently on call through an existing Master Service Contract.

L. Special Inspection and Geotechnical Observation shall be contracted for separately, by the City, through existing Master Service Agreements. Special Inspection and observation will be required for all footing excavation, reinforcement, and concrete inspection related to the building permits for this project, and those permit requirements. The Contractor shall coordinate with the City and the City Inspector to have the special inspector or geotechnical engineer on site for the permitted work. Refer to 1.03 herein.

1.06 INSPECTIONS AND TESTS BY CITY

A. The Contractor shall coordinate with the City Project Inspector to arrange all scheduling and on-site inspection and testing as needed to satisfy permit requirements for the project.

M. It is the responsibility of the Contractor to coordinate as needed and described herein and elsewhere in these special provisions to arrange for testing and inspection. The Contractor shall notify the City Project Inspector when permitted work is ready for specified tests and inspections.

N. Contractor Responsibilities in Inspections and Tests:

1. Advanced Notification: Refer to Article 7.8 (B) of the General Conditions.

2. Additional Testing and Inspection: Refer to Article 7.8 (C), “Responsibility for Costs”.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

3.01 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions in this section “**Testing and Inspection**,” not otherwise provided for, shall be considered included in the prices paid for the various line items of work requiring testing and inspection and no additional compensation will be allowed therefor.

END OF SECTION

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SECTION 01 41 00 Regulatory Requirements

PART 1 GENERAL

1.01 SUMMARY

This section includes regulatory and environmental requirements applicable to Contract.

1.02 SECTION INCLUDES

A. Compliance with Regulatory Requirements

O. Compliance with Americans with Disabilities Act

1.03 RELATED SECTIONS

A. Section 01 57 19 “Temporary Controls”

1.04 REFERENCES TO REGULATORY REQUIREMENTS

A. Codes, laws, ordinances, rules and regulations applicable to the Work shall have full force and effect as though printed in full in the Contract. Codes, laws, ordinances, rules and regulations are not furnished to Contractor, since Contractor is assumed to be familiar with their requirements. The listing herein of applicable codes, laws and regulations for hazardous waste abatement work is supplied to Contractor as a courtesy and shall not limit Contractor's responsibility for complying with all applicable laws, regulations or ordinances having application to the Work. Where conflict among the requirements or with these specifications exists, the most stringent requirements shall be used.

P. Contractor's work shall conform to all applicable codes, laws, ordinances, rules and regulations which are in effect on date of contracting.

Q. References on the Drawings or in the Specifications to "code" or "building code" not otherwise identified shall mean the codes specified below, together with all additions, amendments, changes, and interpretations adopted by code authorities of the jurisdiction.

R. Codes which apply to Contract include, but are not limited to, the following:

1. California Electrical Code (Part 3, Title 24, C.C.R.)
2. California Mechanical Code (Part 4, Title 24, C.C.R.)
3. California Plumbing Code (Part 5, Title 24, C.C.R),
4. National Electrical Code

Laws, Ordinances, Rules and Regulations

1. Refer to Section 01 41 10 “Regulatory Requirements”.
2. During prosecution of Work to be done under Contract, comply with applicable laws, ordinances, rules and regulations, including, but not limited to, the following:
3. Federal
   a. Americans with Disabilities Act
   b. Federal Water Pollution Control Act
   c. 29 CFR, Section 1910.1001, Asbestos
   d. 40 CFR, Subpart M, National Emission Standards for Asbestos

5. Executive Order 11246
6. State of California
    a. California Code of Regulations:
        Title 5: Education
        Title 8: Industrial Regulations
        Title 14: Natural Resources
        Title 17: Public Health
        Title 19: Public Safety
        Title 21: Public Works
        Title 22: Social Security
        Title 24: California Building Standards Code
        Title 25: Housing and Community Development
        Title 27 Environmental Protections
    b. California Education Code
    c. California Public Contract Code
    d. California Health and Safety Code
    e. California Government Code
    f. California Labor Code
    g. California Civil Code
    h. California Code of Civil Procedure
    i. CPUC General Order 95, Rules for Overhead Electric Line Construction
    j. CPUC General Order 128, Rules for Construction of Underground Electric Supply and Communications Systems
    k. California Occupational Safety and Health Administration (Cal OSHA)
    l. Occupational Safety and Health Administration (OSHA): Hazard Communications Standards.
7. State of California Agencies
    a. California Business, Consumer Services and Housing Agency
    b. Office of the State Fire Marshall
    c. Office of Statewide Health Planning and Development
8. Local Agencies:
    a. Bay Area Air Quality Management District
    b. California Green Building Standard
    c. City of Fremont
        I. Per the City of Fremont Municipal Code, Title 8, 12, 18

d. County of Alameda and Alameda County Flood Control and Water Control District

9. Other Requirements:

a. National Fire Protection Association (NFPA): Pamphlet 101, Life Safety.

b. Building Energy Efficient Standards – Title 24, Part 6

1.05 COMPLIANCE WITH AMERICANS WITH DISABILITIES ACT

Contractor acknowledges that, pursuant to the Americans with Disabilities Act (ADA), programs, services and other activities provided by a public entity to the public, whether directly or through a Contractor, must be accessible to the disabled public. Contractor shall provide the services specified in this Agreement in a manner that complies with the ADA and any and all other applicable federal, state and local disability rights legislation. Contractor agrees not to discriminate against disabled persons in the provision of services, benefits or activities provided under this Agreement and further agrees that any violation of this prohibition on the part of Contractor, its employees, agents or assigns shall constitute a material breach of this Agreement.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.02 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions of this section "**Regulatory Requirement"** not otherwise provided for, shall be considered as included in prices paid for various contract items of work involved and no additional compensation will be allowed therefor.

END OF SECTION

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SECTION 01 43 00 Quality Assurance

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Engineer's monitoring.

B. Engineer's inspections and test.

C. Inspections and Tests by Governing Authorities

D. Inspections and Tests by Serving Utilities

E. Test Reports.

F. Construction Quality Assurance Records Review.

G. Certificates of Compliance.

1.02 RELATED SECTIONS

A. Field samples and site mockups are specified in Article 15 - Special Conditions, Section 01 43 36 - Field Samples and Mockups.

B. Contractor's quality control requirements are specified in Article 15 – Special Conditions, Section 01 45 00 - Quality Control.

1.03 ENGINEER'S MONITORING

A. The Engineer will perform inspection of the Contractor's on-site construction activities. Inspection consists of a review, observation, or inspection of Contractor personnel, material, equipment, processes, and test results, performed at random or at selected stages of the construction operations. The purpose of surveillance inspection is to determine if an action has been accomplished or if documents have been prepared in accordance with selected requirements of the Contract Documents.

1.04 ENGINEER'S INSPECTIONS AND TESTS

A. The Engineer may perform inspections and tests as necessary to determine the Contractor's compliance with Contract Document requirements.

B. Unless otherwise specified, samples and test specimens required under the Contract Documents will be furnished by the Contractor and prepared for testing in ample time for the completion of the necessary tests and analyses before the subject materials or articles are to be used. The Contractor will furnish all required test specimens at its own expense.

C. For inspections and tests by the Engineer, the Engineer may provide the services of a qualified testing laboratory, soils engineer, or inspector, selected and paid for by the City.

D. Except as otherwise provided in the Contract Documents, performance of the required initial test will be by the City or their representative, and all costs therefore will be borne by the City. The cost of any failed re-tests after the first test will be borne by the Contractor.

E. A City-employed testing laboratory may supervise the preparation and selection of samples required for testing, as necessary.

F. Unless otherwise specified, all testing will be in accordance with the methods prescribed in the current specified published standards, as applicable to the class and nature of the articles or materials considered. However, the City reserves the right to use any generally accepted system of sampling and testing which, in the

opinion of the Engineer, will assure the City that the quality of the workmanship is in full accord with the Contract Documents.

G. Failure of any portion of the work to meet any of the requirements of the Contract Documents will be reasonable cause for the Engineer to require the removal or correction and reconstruction of any such work at the Contractor's sole cost and expense.

H. Testing is not a duty of the City and is solely at the discretion of the Engineer. Non-testing by the City does not release the Contractor from their responsibility to perform all work in conformance with the Contract Documents.

I. Verification of Quality: Work will be subject to verification of quality by Engineer in accordance with provisions of the General Conditions of the Contract, the City of Fremont's Quality Assurance Program, and these Contract Documents.

1. Contractor will cooperate by making Work available for inspection by the Engineer.
2. Such verification may include field inspection as required.
3. Contractor shall provide access to all parts of the Work.
4. Whenever Contractor is ready to backfill, bury, cast in concrete, hide, or otherwise cover or make inaccessible any Work under the Contract, the Contractor shall notify the Engineer not less than four calendar days in advance of beginning such work.
5. Failure by Contractor to notify Engineer shall be reasonable cause for the Engineer to require uncovering of any such work, at no cost to the City, and no applicable delay to the Contract.

J. Provide all information and assistance, as required, for verification of quality by Engineer.

K. Contract modifications, if any, resulting from such verification activities will be governed by applicable provisions in the General Conditions of the Contract.

L. Rejection of Work: City reserves the right to reject all Work not in conformance to the requirements of the Drawings and Specifications.

M. Correction of Non-Conforming Work: Non-conforming Work will be modified, replaced, repaired or redone by the Contractor at no change in Contract Price or Contract Time.

N. Acceptance of Non-Conforming Work: Acceptance of nonconforming Work, without specific written acknowledgement and approval from the Engineer, will not relieve the Contractor of the obligation to correct such Work.

O. Contract Adjustment for Non-Conforming Work: Should the Engineer determine that it is not feasible or in the City's interest to require non-conforming Work to be repaired or replaced, an equitable reduction in Contract Price will be made by agreement between City and Contractor. If equitable amount cannot be agreed upon, a Construction Change Order will be issued and the amount in dispute resolved in accordance with Article 12 – Dispute Resolution of the General Conditions.

1.05 INSPECTIONS AND TESTS BY THE CITY

A. It is the responsibility of the Contractor to coordinate all aspects of work, inspection, and observation required by governing authorities having jurisdiction over the Work under this Contract. Such authorities include, but are not limited to, the City of

Fremont Public Works Department, City of Fremont Building Department, City of Fremont Fire Department, and similar agencies.

B. Except as specifically noted, scheduling and conducting such inspections is the Contractor's responsibility and will be performed at the Contractor's expense.

C. Contractor must notify the Engineer no later than four calendar days 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 specified Work hours Contractor must notify the Engineer at least four calendar days in advance for approval. If approved, Contractor must reimburse City for the cost of the overtime inspection or testing.

D. The City may engage an inspection and testing firm. The inspection and testing firm may provide any or all of the following:

1. Provide qualified personnel at site. Cooperate with Engineer in performance of services. Engineer may direct firm, as necessary, to location of field tests.

4. Perform specified inspection, sampling, and testing in accordance with specified standards.

5. Ascertain compliance of materials with requirements of Contract Documents.

6. Promptly notify Engineer of observed irregularities or non-conformance of work or products.

7. Perform additional inspections and tests required by Engineer.

E. Reports by City Testing and Inspection Firm: After each inspection and test, one copy of report may be submitted to the Engineer.

1. Reports may identify any of the following:

a. Date issued.

b. Project name and number.

c. Identification of product and Specifications Section in which Work is specified.

d. Name of inspector.

e. Date and time of sampling or inspection.

f. Location in Project where sampling or inspection was conducted.

g. Type of inspection or test.

h. Date of test.

i. Results of tests.

j. Comments concerning conformance with Contract Documents and other requirements.

2. Test reports may indicate specified or required values and may include statement whether test results indicate satisfactory performance of products.

3. Test reports and samples taken but not tested will be reported.

4. Test reports may confirm that methods used for sampling and testing conform to specified test procedures.

5. When requested, testing and inspection firm may provide interpretations of test results.

6. Verification reports may be prepared, stating that tests and inspections specified or otherwise required for the project, have been completed and that material and workmanship comply with the Contract Drawings and Specifications.

F. Contractor Responsibilities in Inspections and Tests:

1. Advanced Notification: Refer to Article 7.8 (B) of the General Conditions.

2. Deliver adequate samples of materials proposed to be used, which require advance testing, together with proposed mix designs, to laboratory or designated location.

3. Cooperate with testing and inspection firm personnel and Engineer. Provide access to Work areas and off-site fabrication and assembly locations, including during weekends and after normal work hours.

4. Provide incidental labor and facilities to provide safe access to Work to be tested and inspected, to obtain and handle samples at the Project site or at source of products to be tested, and to store and cure test samples.

1.06 INSPECTIONS AND TEST SERVING UTILITIES

A. It is the responsibility of the Contractor to coordinate all site visits of the serving utilities, as needed for the various aspects of Work.

B. Scheduling and conducting tests and inspections required by serving utilities will be the Contractor's responsibility and will be performed at the Contractor's expense.

C. Contractor must notify the Engineer no later than four calendar days 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 specified Work hours, or on a Saturday, Sunday, or recognized City holiday, Contractor must notify the Engineer at least four calendar days in advance for approval. If approved, Contractor must reimburse the City for the cost of the overtime inspection or testing.

1.07 TEST REPORTS

A. The Engineer will make available to the Contractor copies of all test reports for tests performed by the Engineer.

1.08 CONSTRUCTION QUALTITY ASSURANCE RECORDS REVIEW

A. The Engineer may review the Contractor's, Subcontractor's, and Supplier's quality control records and performance. The Contractor will ensure that all quality control records and places of work are open and available to the Engineer for inspection. The Engineer will give 7 calendar days' notice of intention to review specific activities or installations.

1.09 CERTIFICATES OF COMPLIANCE

A. Materials used on the basis of a certificate of compliance may be sampled and tested by the Engineer at any time. The fact that material is used on the basis of a Certificate of compliance will not relieve the Contractor of its responsibility for incorporating material in the Work which conforms to the requirements of the Contract, and any such material not conforming to such requirements will be subject to rejection, whether in place or not.

B. The City reserves the right to reject a certificate of compliance and require submittal and execution of sampling and testing procedures described herein.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.03 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions in this Section, "**Quality Assurance"**, unless specified otherwise, will be considered as included in the price paid for various contract items of work and no additional compensation will be allowed therefor.

END OF SECTION

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SECTION 01 43 36 Field Samples and Mock-Ups

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Field samples and mock-ups.

B. Nonconformance.

C. Removal after completion.

1.02 FIELD SAMPLES AND MOCK-UPS

A. Field samples and mock-ups will be prepared at the Worksite by the Contractor as specified in the various Sections of these Specifications. Affected finish work will not be started until the Engineer has approved the field samples and Worksite mock-ups in writing.

B. Construct and prepare field samples and Worksite mock-ups at designated locations at the Worksite or on the structure as directed by the Engineer.

C. The Contractor will have product manufacturers inspect and approve field samples and mock-ups that involve their materials, for proper application or installation of the materials in accordance with their respective instructions and recommendations for the conditions or circumstances involved in the application or installation.

D. The Contractor will make arrangements with the respective product manufacturers to provide job or field service.

E. The Contractor will construct or prepare as many additional samples and mock-ups as may be required, as determined by the Engineer, until desired features, textures, finishes, and colors are obtained. Approved samples and mock-ups will serve as the standards of quality for the various affected units of work.

F. Preserve approved field samples and mock-ups for comparison purposes until the affected work is completed and accepted by the City. Finished work will match the approved field samples and mock-ups.

1.03 NONCONFORMANCE

A. Completed work that does not exactly match approved field samples and mock-ups will be rejected, and will be replaced with work that does exactly match the approved field samples and mock-ups at the Contractor's expense.

B. If the Contractor elects to start work before the Engineer has approved the related field samples or mock-ups, the Contractor does so at the risk of having the work rejected by the Engineer without compensation.

1.04 REMOVAL AFTER COMPLETION

Field samples and mock-ups will be removed from the Worksite and structures after completion and acceptance of the affected work or otherwise as directed by the Engineer.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions in this Section, "**Field Samples and Mock-Ups"**, will be considered as included in the price paid for various contract items of work and no additional compensation will be allowed.

END OF SECTION

SECTION 01 45 00 Quality Control

PART 1 GENERAL

1.01 SITE INVESTIGATION AND CONTROL

A. The Contractor shall verify all dimensions in the field and shall check all field conditions continuously during the Work. The Contractor shall be solely responsible for any inaccuracies built into the Work.

B. The Contractor shall inspect related and appurtenant work and shall report in writing to the Engineer, any conditions which will prevent proper completion of the Work. Any required removal, repair, or replacement caused by unsuitable conditions shall be done by the Contractor at its sole cost and expense.

1.02 RELATED SECTIONS

A. Section 01 30 00 “Submittal Procedures”

1.03 SUBMITTALS

A. Refer to Sections 01 30 00 “Submittal Procedures”, and include all Shop Drawings, Product Data, and other submittal requirements and procedures.

1.04 INSPECTION OF THE WORK

A. General: The Work shall be conducted under the general observation of the Engineer and shall be subject to inspection by representatives of the City to assure strict compliance with the requirements of the Contract Documents.

B. The authorized representative of the Engineer on the project site shall be those representatives or consultants designated by the Engineer to act on behalf of the City. The presence of the Inspectors, however, shall not relieve the Contractor of the responsibility for the proper execution of the Work in accordance with all requirements of the Contract Documents. Compliance is distinctly a duty of the Contractor, and said duty shall not be avoided by any act or omission on the part of the inspector(s).

C. All materials and articles furnished by the Contractor shall be subject to rigid inspection, and no material or articles shall be used in the Work until it has been inspected and accepted by the Engineer or the City.

D. At all times during the construction, the Contractor shall prevent the formation of any airborne dust nuisance. If the Contractor fails to remove the nuisance within 2 hours, the City may order that the work be done and all expenses incurred for the performance of this work will be deducted from payments to the Contractor.

1.05 QUALITY ASSURANCE AND QUALITY CONTROL

A. Contractor's Quality Control: Contractor shall ensure that products, services, workmanship and site conditions comply with requirements of the Drawings and Specifications by coordinating, supervising, testing and inspecting the work and by utilizing only suitably qualified personnel.

B. Quality of Products: Unless otherwise indicated or specified, all products shall be new, free of defects and fit for the intended use.

C. Quality Requirements: Work shall be accomplished in accordance with quality requirements of the Drawings and Specifications, including, by reference, all Codes, laws, rules, regulations and standards. When no quality basis is prescribed, the quality shall be in accordance with the best accepted practices of the construction industry for the locale of the Project, for projects of this type.

D. Quality of Installation: All Work shall be produced plumb, level, square and true, or true to indicated angle, and with proper alignment and relationship between the various elements.

E. Quality Control Personnel: Contractor shall employ and assign knowledgeable and skilled personnel as necessary to perform quality control functions to ensure that the Work is provided as required.

F. Protection of Completed Work: Take all measures necessary to preserve completed Work free from damage, deterioration, soiling and staining, until Acceptance by the City.

G. Standards and Code Compliance and Manufacturer's Instructions and Recommendations: Unless more stringent requirements are indicated or specified, comply with manufacturer's instructions and recommendations, reference standards and building code research report requirements in preparing, fabricating erecting, installing, applying, connecting and finishing Work.

H. Deviations from Standards and Code Compliance and Manufacturer's Instructions and Recommendations: Document and explain all deviations from reference standards and building code research report requirements and manufacturer's product installation instructions and recommendations, including acknowledgement by the manufacturer that such deviations are acceptable and appropriate for the Project.

1.06 LABORATORIES

A. Laboratory QC testing shall be conducted by qualified testing laboratories, hired through task order by the City, or performed by the City itself at its laboratory.

1.07 CONTRACTOR'S QUALITY CONTROL TESTING

A. All construction processes, procedures, and workmanship shall be inspected by the Contractor's construction Quality Control (QC) inspectors. Inspection observations, measurement, results, non-conformances, and corrective actions shall be documented on forms acceptable to the City. Inspection observation and documentation shall include description of construction activity and location by Contract Specifications Section.

B. All materials are subject to inspection, sampling, and testing at any time before Final Acceptance of the Work.

1. References in the Contract to a test designation of the American Society for Testing and Materials (ASTM) or other recognized national organization shall mean the latest revision of that test method or specification for the work in effect on the day the Request for Proposals (RFP) for the Work is dated, unless otherwise noted.

2. Materials will be sampled and tested by the Contractor's construction QC testers and samplers. Copies of all test results will be furnished to the Contractor's Representative, the QA Manager, and the City. The exception to this is when a

test is done for the Contractor as process control assuring that its process and materials source is producing an acceptable product. Process control tests usually occur when an operation is begun and when changes occur in the source of materials or method of production.

3. The City may observe any testing performed by the Contractor's construction QC testers and samplers. If the City observes a deviation from the specified sampling or testing procedures, the City shall verbally describe the observed deviation to the Construction QC Manager, followed by a written Non-Conformance Report (NCR) covering the deviation to the Construction QC Manager and Contractor's Representative within twenty-four hours.

SAMPLING AND TESTING

A. Unless otherwise specified, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM or other specified published standards, as applicable to the class and nature of the article or materials considered; however, the City reserves the right to use any generally-accepted system of sampling and testing which, in the opinion of the Engineer will assure the City that the quality of the workmanship is in full accord with the Contract Documents.

B. Laboratory Tests:

1. All laboratory testing shall be performed by an independent, qualified testing laboratory retained by task order by the City, or performed by the City itself at its laboratory.

C. Qualification of Laboratory Testing Personnel: Personnel performing laboratory tests shall be qualified for such work by virtue of prior experience and training.

D. Testing Equipment: Testing equipment shall be in satisfactory operating condition, of adequate capacity and range, and accurately calibrated. Testing equipment shall be calibrated in accordance with national standards which are certified by the National Institute of Standards and Technology. Testing equipment shall be calibrated at the frequency recommended by the equipment manufacturer.

E. Test Program Plan:

1. A Test Program Plan shall be prepared, identifying the approach for accomplishing each of the specified tests.

2. A narrative shall be prepared for each test specified, describing the test set-up, equipment, and instrumentation that will be used; procedure to be implemented; and the anticipated, as well as acceptable, test results.

3. Drawings showing the relationship of the test sample and all significant components of the test equipment shall be included, as necessary, to describe the test set-up and procedure.

4. The Test Program Plan shall include:

a. Test sequencing.

b. Equipment specifications and calibration methods for all testing equipment.

c. Identity and qualifications of personnel who will perform testing.

d. Proposed format for reporting test data.

e. The projected schedule for the test procedure submittals, test executions, and test results' report submittals.

5. After approval of the Test Program Plan, any proposed changes will require approval of the City of Fremont prior to implementing the change.

F. Any waiver by the City of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a "performance bond" to assure execution of any necessary corrective or remedial Work, shall not be construed as a waiver of any prescriptive or performance requirements of the Contract Documents. "Performance bond" as used herein is a separate bond in addition to the Contract Performance Bond required in Article 4 of the General Conditions.

G. Notwithstanding the existence of such waiver, and in addition to any testing and inspection performed by any other inspector on behalf of the City or any other public agency having jurisdiction, the Engineer shall have the right to make independent investigations and tests, and failure of any portion of the Work to meet any of the requirements of the Contract Documents, shall be reasonable cause for the Engineer to require the removal or correction and reconstruction of any such work in accordance with the General Conditions.

1.10 TIME OF INSPECTIONS AND TESTS

A. Samples and test specimens required under the Contract Documents shall be furnished by the Contractor and prepared for testing in ample time for the completion of the necessary tests and analyses before the subject materials or articles are to be used. The Contractor shall furnish all required test specimens at its own expense. Except as otherwise provided in the Contract Documents, performance of the required initial test and first re-test will be by the City, and all costs therefore will be borne by the City; except, that the cost of any test after the first re-test shall be borne by the Contractor.

B. Whenever the Contractor is ready to backfill, bury, cast in concrete, hide, or otherwise cover or make inaccessible any work under the Contract, the Contractor shall notify the Engineer not less than 48 hours in advance of beginning any such work of backfilling, burying, casting in concrete, hiding, covering, or making inaccessible any portion of the Work to be inspected, so that the required inspections can be scheduled and performed. Failure of the Contractor to notify the Engineer at least 48 hours in advance of any such inspections shall be reasonable cause for the Engineer to require sufficient delay in the Contractor's schedule to allow time for such inspections and any remedial or corrective work required, and all costs of such delays, including its impact or effect upon other portions of the Work shall be borne by the Contractor.

C. Provide timely coordination for inspection by permit and code authorities.

1.11 CITY OF FREMONT'S MONITORING

A. The City will verify that milestones are met in accordance with the Contractor's schedule of milestones and will verify quantities of any unit priced work items.

B. A monthly audit of milestones and quantities of any unit priced work items will be performed and any required correction will be made to the subsequent progress pay estimate.

C. This review and audit will assure that the milestone achievement and correct quantities are shown.

D. Documents for payment of Change Orders must also contain sufficient information to satisfy an audit.

1.12 INDEPENDENT REFEREE LABORATORY

A. The City will retain the services of an independent certified laboratory on an "on-call" basis to act as a "referee" laboratory for resolution of disputes regarding sampling and testing results reported by the City's verification samplers and testers and the Contractor's construction QC samplers and testers.

1. The services of the "referee" laboratory may be requested by the City or by the Contractor.

2. The frequency and location of sampling and testing will be mutually agreed by the City and the Contractor prior to the referee laboratory's performing its work.

3. The sampling and testing results determined by the "referee" laboratory shall be final and binding on both parties and not subject to disputes resolution.

B. The party whose sampling and testing results are not confirmed and/or supported by the "referee" laboratory (i.e., the unsuccessful party) shall be responsible for payment for the "referee" services.

1. If the City is the unsuccessful party, it will make payment directly to the "referee" laboratory.

2. If the Contractor is the unsuccessful party, the cost of the "referee" laboratory services will be deducted from the monthly progress payment(s) otherwise due, and the City will make payments to the "referee" laboratory on behalf of the Contractor.

3. If the sampling and testing results obtained by the referee laboratory are inconclusive and do not clearly identify which party's results are correct, the cost of the referee laboratory's services will be shared equally between the Contractor and the City. The City will make full payment to the referee laboratory and the Contractor's share will be deducted from the next progress payment.

C. The "referee" laboratory will not be associated with the Contract in any capacity or be affiliated with any party to the Contract or with any Principal Participant, the Designer and/or Subcontractor. The "referee" laboratory shall not be a department, agency, or office of any stakeholder.

1.13 CONTRACTOR SCHEDULING AND NOTICE TO THE CITY

A. The Contractor shall notify the City in writing by Friday noon of each week of planned design reviews and construction activities, including fabrication, for the following two

weeks to allow the City to schedule its resources. The Contractor will deliver this information at the weekly coordination meeting where related discussion will occur.

B. For activities (such as, fabrication) occurring out of the immediate Contract area (beyond 100 miles of the City), the Contractor shall give the City at least 21 Days of notice of planned work.

1.14 DOCUMENTATION

A. Construction: The Contractor shall collect and preserve each of the following types of data in written form concurrently during the Contractor's performance of the Work, all of which shall be in a format acceptable to the City. The Contractor may use forms provided by the City or its own forms providing equivalent information. Refer to Contract Specifications Section 01 43 00, Quality Assurance for additional requirements.

1. Daily manpower and equipment reports for the Contractor and each Subcontractor for construction-related activities shall be prepared and maintained by the Contractor.

2. A daily log for construction-related activities in a narrative form recording all significant occurrences on the Contract, including, unusual weather; asserted occurrences; events and conditions causing or threatening to cause any significant delay, disruption, or interference with the progress of any of the Work; significant injuries to persons or property; and a listing of each activity depicted on the current monthly plan update which is being actively prosecuted.

3. For utility-related work such data shall be maintained separately for each utility facility.

4. For harmful/hazardous material remediation work, such data shall be maintained separately for each site.

5. Records shall document all QC operations, inspections, activities, and tests performed, including the work of Subcontractors. Such records shall include any delays encountered and work noted that does not conform to the requirements of the Contract and design together with the corrective actions taken regarding such work.

6. Records shall document the measurement of quantities for all unit priced items, if any.

B. Test Reports:

1. Within five Days after completion of testing performed by or for the Contractor, submit test results of such tests to the City of Fremont.

   a. Identify test reports with the information specified for Submittals in Contract Specifications Section 01 30 00, Submittal Procedures.

   b. Include the name and address of the organization performing the test and the date(s) of the tests.

2. Test reports shall include the following information:

a. Actual test results compared with the Contract requirements and identification of all non-conforming items.

b. Calibration certificates.

3. The City of Fremont will make available to the Contractor copies of all test reports of tests performed by the City of Fremont.

C. Weekly Documentation: The Contractor shall complete and submit appropriate weekly documentation that includes factual evidence that required activities or tests have been performed, including the following:

1. The type, number, and results of QC and control activities, including reviews, inspections, tests, audits, monitoring of work performance, and materials analysis;

2. Closely-related data such as qualifications of personnel, procedures, and equipment used;

3. The identity of the QC inspector or data recorder, the type of test or observation employed, the results, the acceptability of the work, and action taken in connection with any deficiencies noted;

4. The nature of non-conforming work and causes for rejection;

5. Proposed corrective action;

6. Corrective actions taken; and

7. Results of corrective actions.

1.15 SOURCE OF MATERIALS

A. In accordance with Contract Specifications the Contractor shall notify the City of Fremont in writing of the sources from which the Contractor proposes to obtain materials requiring City approval, certification or testing.

B. The Contractor may use certificates of compliance for certain materials and products in lieu of the specified sampling and testing procedures.

1. Submit any certificates required for demonstrating proof of compliance of materials with specification requirements with each lot of material delivered to the Work. The lot so certified shall be clearly identified by the certificate. Certificates shall be signed by an authorized representative of the producer or manufacturer and shall state that the material complies in all respects with Contract requirements.

2. The Project Schedules shall indicate the date scheduled for submittal of the certificates as specified in Contract Specifications Section 01 32 16, Project Progress Schedule. In the case of multiple shipments, each of which shall be accompanied by a certificate of compliance, the scheduled date on the Project Schedules shall indicate the initial submittal only.

3. The certificate of compliance shall be accompanied by a certified copy of test results or shall state that such test results are on file with the producer or manufacturer and shall be furnished to the City on request. The certificate shall

give the name and address of the organization performing the tests, the date of the tests, and the quantity of material shipped information as specified in Contract Specifications Section 01 30 00, Submittal Procedures.

4. Materials used on the basis of a certificate of compliance may be sampled and tested by the City of Fremont at any time. The fact that material is used on the basis of a certificate of compliance shall not relieve the Contractor of its responsibility for incorporating material in the Work that conforms to the requirements of the Contract, and any such material not conforming to such requirements will be subject to rejection, whether in place or not.

5. The City reserves the right to refuse to permit the use of certain materials on the basis of a certificate of compliance.

1.16 MANUFACTURERS' SPECIFICATIONS AND INSTRUCTIONS

A. Unless otherwise indicated or specified, manufactured materials, products, processes, equipment, systems, assemblies, and the like shall be erected, installed, or applied in accordance with the manufacturers' instructions, directions, or specifications. Said erection, installation, or application shall be in accordance with printed instructions furnished by the manufacturer of the material or equipment concerned for use under conditions similar to those at the Jobsite.

B. Any deviation from the manufacturers' printed installation instructions and recommendations shall be explained and acknowledged as correct and appropriate for the circumstances, in writing, by the particular manufacturer. The Contractor will be held responsible for installations contrary to the respective manufacturers' instructions and recommendations.

1.17 SPECIALIST APPLICATOR / INSTALLER

A. Materials, equipment, systems, and assemblies requiring special knowledge and skill for the application or installation of such materials, equipment, systems, or assemblies shall be applied or installed by the specified product manufacturer or its authorized representative or by a skilled and experienced Subcontractor qualified and specializing in the application or installation of the specified product.

B. The Contractor shall ensure that the installation Subcontractor is approved by the product manufacturer, as applicable.

1.21 MANUFACTURERS' FIELD SERVICES

A. The Contractor shall have the manufacturer of a product, system, or assembly that requires special knowledge and skill for the proper application or installation of such product, system, or assembly provide appropriate field or job service at no additional cost to the City. The Contractor shall have the manufacturer inspect and approve the application or installation work.

B. The Contractor shall make all necessary arrangements with the manufacturer of the products to be installed to provide onsite consultation and inspection services to assure the correct application or installation of the product, system, or assembly.

C. The Contractor shall ensure that the manufacturer's authorized representative is present at the time any phase of this work is started.

D. The Contractor shall have the manufacturer inspect and approve all surfaces over which, or upon which, the manufacturer's product will be applied or installed.

E. The Contractor shall have the manufacturer's representative make periodic visits to the Jobsite as the work progresses as necessary for consultation and for expediting the work in the most practical manner.

1.22 FINISHED TOLERANCES

A. Except as specified otherwise in the individual Contract Specifications Sections, finished tolerances shall conform with the following requirements:

1. Walls: Finished wall surfaces shall be plumb and shall have a maximum variation of 1/8 inch in 8 feet when a straightedge is laid on the surface in any direction, and no measurable variation in any 2-foot direction.

2. Ceilings: Finished ceiling surfaces shall present true, level, and plane surfaces, with a maximum variation of 1/8 inch in 8 feet when a straightedge and water level are laid on the surface in any direction, and no measurable variation in any 2-foot direction.

3. Concrete Floors: Tolerances for concrete floors and pavement are specified in Contract Specifications Section, 03 30 00, Cast In Place Concrete.

4. Finished Floors: Finished floors shall be level to within plus or minus 1/8 inch in 10 feet. Where floor drains occur, slope finished floor to the drain at the rate of 1/8 inch per foot or as otherwise indicated on the Contract Drawings.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

A. MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions in this section "**Quality Control**" not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

END OF SECTION

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SECTION 01 55 00 Site Access and Storage

PART 1 GENERAL

1.01 GENERAL

A. The Contractor shall take all necessary precautions for the protection of the Work and the safety of the public. The Contractor shall, at the Contractor's elective option, station guards, or other deterrent devices, as may be required to deter vandalism or theft, including but not limited to barricades, fencing and other obstructions, and security lighting. The Contractor shall secure any open access points to the project area during all hours when Contractor is not actively engaged in the performance of the Work.

1.02 RELATED SECTIONS

A. Refer to General Conditions, Article 2.2, Article 7.2, Article 7.3, Article 7.5 and Article 7.9 regarding staging, temporary facilities and worksite maintenance.

B. Mobilization, see section 01 71 13, "Mobilization and Temporary Facilities".

1.03 HIGHWAY LIMITATIONS

A. The Contractor shall make its own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to and from the project site. It shall be the Contractor's responsibility to construct and maintain any access or haul roads required for its demolition operations.

B. All hauling by motor vehicles shall be confined to truck routes, except where otherwise authorized in writing by the Engineer. Truck routes are those shown on the map titled "City of Fremont Truck Routes, Adopted by City Council 4-26-1988" incorporated into these specifications, and as designated in the Fremont Municipal Code. The Contractor is responsible for acquiring all oversize/overweight vehicle permits from agencies having jurisdiction when transporting materials or equipment with size and weight exceeding established hauling criteria.

1.04 CONTRACTOR'S WORK, STAGING, AND STORAGE AREA

A. At or before the pre-construction meeting the contractor shall submit to the Supervising Construction Coordinator, as part of the Site Operations Work plan (SOW) required per Section 01 32 19 "Submittal Procedures", a Project site plan, drawn to scale, indicating the proposed layout and use of the site for access and staging. At minimum the plan will show the location and configuration of temporary construction fencing / tree protection fencing and gates, site access, storage, staging, temporary offices, subcontractor parking, storm water runoff control measures, and access for contractors doing work under concurrently under other contracts.

B. The Contractor shall make its own arrangements for any necessary off-site storage or shop areas necessary for the proper execution of the Work. Off-site shall be defined as any area outside the temporary fencing required. If the site is located on public property, the Contractor shall submit a site plan, drawn to scale, of the proposed storage, trailer, and/or staging site for the Engineer's approval. If the site is on

private property, the Contractor shall submit evidence of the property owner's approval of the use of the site.

C. Under no circumstances shall private vehicles owned by the Contractor, or other vehicles, be allowed to park or be stored in the park, outside the limits or work where existing facilities and/or landscape can be damaged.

1.05 TEMPORARY USE OF PUBLIC FACILITIES

A. Street Use: Nothing herein shall be construed to entitle the Contractor to the exclusive use of any public street, alley, way, or parking area during the performance of the Work hereunder, and it shall so conduct its operations as not to interfere unnecessarily with the public's use of the surrounding public area, or the authorized of the City, utility companies, or other agencies in such streets, alleys, ways, or parking areas.

B. Fire hydrants on or adjacent to the Work shall be kept accessible to firefighting apparatus.

C. Temporary provisions shall be made by the Contractor to assure the use of the sidewalks and the proper functioning of all gutters, sewer inlets, and other drainage facilities.

1.06 DAMAGE TO EXISTING FACILITIES

A. Any damage to areas outside the limits of work, done by the Contractor operation, shall be repaired, or removed and replacement (R&R) at the Contractor's expense.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions in this section **"Site Access and Storage",** not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

END OF SECTION

SECTION 01 55 27 Maintenance of Traffic and Access

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This Contract Specifications Section provides requirements regarding the maintenance of traffic and access.

B. Maintenance Access Plan.

C. Maintenance of traffic operations during construction for the Contract.

D. Maintenance of Traffic and Access Traffic Control Plans.

E. Maintenance of Traffic and Access to private and public properties adjacent to and along the Jobsite during construction of the Contract.

F. Management and supervisory personnel requirements.

G. Construction operations under traffic.

1.02 REFERENCES

A. Article 2 “Roles and Responsibilities” of the General Conditions, and Article 7.5 “Worksite and Nearby Property Protections”.

1.04 MAINTAINING TRAFFIC AND TRAFFIC CONTROL

A. The provisions in this section will not relieve the Contractor from his responsibility to provide such additional devices or take such measures as may be necessary to comply with the provisions of the Standard Specifications and these special provisions.

B. All signs and other warning devices shall be furnished, installed, maintained, relocated, and removed by the Contractor and shall become his property after the completion of the contract.

1.05 PUBLIC SAFETY

A. The Contractor shall provide for the safety of traffic and the public in conformance with the provisions in the Standard Specifications and these special provisions.

B. The contractor shall provide safe access around the perimeter sidewalk of the park and project site at all times. If pedestrian traffic needs to be redirected, the contractor shall provide all necessary temporary barricades, traffic cones, warning signs, lights, directional signs, and other safety devices required to redirect pedestrians along the appropriate route.

C. Personal vehicles of the Contractor's employees shall not be parked on the traveled way or shoulders, including any section closed to public traffic.

D. All excess and unsuitable material resulting from the Contractor's operation shall be removed as it develops and before the end of each working day.

E. All hauling on City streets shall be on adopted truck routes. See Truck Routes Plan (Appendix A) following these Special Provisions. The Contractor shall contact the Engineer for approved haul routes for all material entering or leaving the site.

F. Traffic may not be routed over unpaved roadway unless authorized by the Engineer.

G. Safe bicycle accommodations shall be maintained by the Contractor at all times during construction. Appropriate warning signs designed for bicyclists shall be used by the Contractor, as necessary, so bicyclists can safely traverse the construction zone.

H. The provisions in this section may be modified or altered if, in the opinion of the Engineer, public traffic will be better served and work expedited. Said modifications or alterations shall not be adopted until approved in writing by the Engineer.

I. The Contractor shall maintain a safe workplace throughout the job including, but not limited to, providing flaggers, safety equipment, barricades, safe pedestrian and bicycle passage through the work zones, and maintenance of handicap access where applicable.

J. The Contractor shall fulfill the requirements of this section 24 hours per day, seven days per week, including holidays, from the time the Notice to Proceed is issued until the project is accepted as complete.

K. Safe pedestrian and bicycle accommodations shall be maintained by the Contractor at all times during construction. Appropriate warning signs designed for bicyclists shall be used by the Contractor, as necessary, so bicyclists can safely traverse the construction zone.

L. When entering or leaving roadways carrying public traffic, the Contractor's equipment, whether empty or loaded, shall in all cases yield to public traffic.

M. Temporary Walkways: In areas where removal of existing sidewalks is necessary, access to adjacent businesses, entrances, and properties shall be maintained by temporary walkways having a width of not less than 4 feet.

N. Parking of Vehicles and Equipment:

The following restrictions apply to the parking of personal vehicles of Contractor's and Subcontractor's personnel, Contractor's, Subcontractor's and Supplier's vehicles or equipment:

1. During non-working hours, vehicles or equipment shall not be parked within the roadway clear zone or railroad right-of way;

2. Neither personal vehicles nor equipment shall be parked on accesses to businesses, residences, or public or private land where such parking blocks access; and

3. Private or public land, including parking areas at businesses, shall not be used to park personal vehicles of Contractor's employees or Contractor's or Subcontractor's vehicles or equipment.

O. Hauling on City Streets:

All hauling on City streets shall be on adopted truck routes. See Truck Routes Plan (Appendix A) following these Special Provisions. The Contractor should contact the Engineer for approved haul routes for all material entering or leaving the site.

1. When entering or leaving roadways carrying public traffic, the Contractor's equipment, whether empty or loaded, shall in all cases yield to public traffic

1.08 COMPLIANCE AND SUSPENSION

A. Failure to comply:

1. The Supervising Construction Coordinator may suspend all or part of the Contractor's construction operations or suspend payment for failure to comply with failure to correct unsafe traffic conditions within a reasonable period of time after such unsafe condition is known by the Contractor or notification is given to the Contractor in writing. The Contractor shall not wait for the City's written direction to take corrective action.

2. If the Contractor does not take appropriate action to correct the unsafe traffic conditions the City may proceed with the corrective action using its own forces or forces retained by the City. If the City must take action on its own, the cost of such will be documented and deducted from moneys owed the Contractor.

3. If the Contractor's operations are suspended due to failure to comply with or to make timely correction of an unsafe traffic condition, no change in the Contract time for construction will be granted for the period required to correct the unsafe conditions.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 GENERAL

The Contractor shall fulfill the requirements of this section 24 hours per day, seven days per week, including holidays, from the time the Notice to Proceed is issued until the project is accepted as complete.

3.02 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provision in this section "**Maintenance of Traffic and Access**", not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

END OF SECTION

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SECTION 01 56 00 Protection of Existing Facilities

PART 1 GENERAL

1.01 EXISTING FACILITIES

A. The Contractor shall protect all existing utilities, trees, shrubbery, lawn, landscaping, irrigation facilities, fences, flatwork, including curbs and gutters, park and road side signs, and all other improvements not designated for demolition and removal, and shall restore damaged or temporarily relocated utilities and other improvements as listed above to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements of the Contract Documents.

B. Potholing: The Contractor shall verify the exact locations and depths of all utilities shown and the Contractor shall make exploratory excavations of all utilities that may interfere with the Work. All such exploratory excavations shall be performed as soon as practicable after Notice to Proceed and, in any event, a sufficient time in advance of demolition to avoid possible delays to the Contractor's works. When such exploratory excavations show the utility location as shown to be in error, the Contractor shall notify the City.

1. The number of exploratory excavations shall be that number which is sufficient to determine the alignment and grade of the utility

C. All reference markings made by the Contractor shall be done with spray chalk or approved equal, and shall be removed by the Contractor when no longer needed.

D. The Contractor is responsible for any and all damages resulting from insufficient weather protection. Contractor is to coordinate exterior work to avoid damage.

E. The Contractor shall be completely responsible for the care and condition of the project improvements in their entirety until completion of the maintenance period and acceptance by the City. The Contractor shall provide such watchmen, guards, and security devices as deemed necessary to prevent destruction of property and vandalism.

1.02 QUALITY ASSURANCE

A. Tree Protection General Responsibility:

The Contractor shall be directly responsible for protection and welfare of existing trees that are in, near or along access to work area and project site. This responsibility shall continue throughout all phases of work until the entire project is completed and accepted by the City and through completion of the maintenance period.

B. Reference Standards:

Published specification, standards, tests, or recommended methods of trade industry apply to work of this section.

1.03 PROTECTION OF SURVEY MARKS

A. The Contractor shall not destroy, remove, or otherwise disturb existing survey markers without proper authorization. No pavement breaking or excavation shall be

started until all survey or other permanent marker points that will be disturbed by the Work have been properly referenced for easy and accurate restoration. It shall be the Contractor's responsibility to notify the proper representative of the City of the time and location that work will be done. Such notification shall be sufficiently in advance of demolition so that there will be no delay due to waiting for survey points to be satisfactorily referenced for restoration. All survey markers or point disturbed by the Contractor without proper authorization of the Engineer, will be accurately restored by the City at the Contractor's expense after all contract work has been completed.

1.04 PROTECTION OF INSTALLED WORK

A. All work installed, completed and accepted per the direction herein to phase construction, shall be protected from damage by other phases of construction work.

B. Contractor shall control activity in immediate work area to prevent damage.

C. Provide temporary and removable protection for installed Products, as needed.

D. Protect finished surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

1.05 EXISTING UTILITIES AND IMPROVEMENTS

A. General:

The Contractor shall protect all underground utilities and other improvements, which may be impaired during the Work. It shall be the Contractor's responsibility to ascertain the actual location of all existing utilities and other improvements that will be encountered in its demolition operations, and to see that such utilities and other improvements are adequately protected from damage due to such operations. The Contractor shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.

B. Utilities to be Moved:

In case it shall be necessary to remove from the property any public utility or franchise holder, such utility or franchise holder, will, upon the request of the Contractor, be notified by the City to move such property within a specified reasonable time. When utility lines are to be removed are encountered within the area of operations, the Contractor shall notify the Engineer a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.

C. Where proper completion of the Work requires the temporary or permanent removal and/or relocation of an existing utility or other improvement, which is shown the Contractor shall remove, and, without unnecessary delay, temporarily replace or relocate such utility or the facility. In all cases of such temporary removal or relocation, restoration to former location shall be accomplished by the Contractor in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal.

D. City's Right of Access:

The right is reserved to the City and to the owners of public utilities and franchises to enter at any time upon any public property, right-of-way, or easement for the purpose of making changes in their facilities made necessary by the Work of this contract.

E. Underground Utilities Shown or Indicated:

F. Existing utility lines that are shown or the locations of which are made known to the Contractor prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired by the Contractor.

G. Underground Utilities Not Shown or Indicated:

In the event that the Contractor damages any existing utility lines that are not shown or the locations of which are not made known to the Contractor prior to excavation, a written report thereof shall be made immediately to the City. If directed by the City, repairs shall be made by the Contractor under the provisions for changes and extra work.

H. Approval of Repairs:

All repairs to a damaged improvement are subject to inspection and approval by an authorized representative of the improvement owner before being concealed by backfill or other work.

I. Maintaining Service:

All oil and gas pipelines, power, and telephone or other communication cable ducts, gas and water mains, irrigation lines, wells, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the Work shall remain continuously in service during all operations under the Contract, unless other arrangements satisfactory to the City are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, wire or cable. The Contractor shall be responsible for and shall repair all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

1.06 TREES, IRRIGATION, AND OTHER VEGETATION WITHIN PROJECT LIMITS INCLUDING ALONG ACCESS ROUTE TO WORK AREA

A. General:

The Contractor shall exercise all necessary precautions so as not to destroy or damage any trees, or other vegetation, including that landscaping material lying within the project limits, and shall not trim or remove any trees unless such trees have been approved for trimming or removal by the City. All existing trees and other vegetation, which become damaged during demolition, shall be trimmed or replaced by the Contractor in consultation with the City Urban Forester to the satisfaction of the City and/or agency. Tree trimming and replacement shall be accomplished as approved and directed by the Engineer.

B. Contractor protection of existing trees, including protective fencing around the tree drip line is required per City Standard details.

C. Irrigation:

All irrigation elements, equipment and components within the project limits, and those elements, equipment and components outside the project limits of work, indicated to remain in working order, shall be the responsibility of the contractor to remain, and be maintained, in working order over the duration of the project, including the plant establishment period. This includes all equipment connected to components within

the project limits of work to be removed, relocated, or re-routed. At no point shall City crews enter the project limits of work to perform maintenance on the irrigation system. If City enters the site, at the request of the Contractor, or at the direction of the City due to negligence of the Contractor to perform maintenance, keep the system running, and adequately water existing lawn, trees, and other plant material, the Contractor shall be charged on a time and materials basis, by the City, and the cost for performing said work shall be retained from their contract, and deducted.

D. Trees

1. Repair compensation

a. Damage to existing tree crown or roots over 1-inch in diameter shall be immediately reported to the Engineer in writing, and, at the direction of the Engineer, with recommendations from the City's Urban Forester, repair damage immediately at the Contractor's expense and monitored by a the City's Urban Forester.

b. The City's Urban Forester shall direct repair of trees damaged by construction operations. Repairs shall be made promptly after damage occurs to prevent progressive deterioration of damaged tree.

c. Damaged tree limbs or trees which have died as a result of injury during construction shall remain the property of the City and shall remain or be removed by the Contractor as directed by the Engineer, with recommendations from the City's Assigned Arborist.

d. Any tree to remain which is damaged or destroyed owing to the Contractor's negligence or failure to provide adequate protection shall be compensated for according to the full appraisal value using the "trunk formula" method in accordance with the latest edition of The Guide for Plant Appraisal, 9th edition (published in 2000 by the International Society of Arboriculture, Savoy IL) and the Species Classification and Group Assignment (2004), a publication of the Western Chapter of the International Society of Arboriculture.

e. Replacement:

I. The Contractor shall immediately notify the City and/or other jurisdictional agency if any tree is damaged by the Contractor's operations. If, in the opinion of the City, the City's Urban Forester, or other said agency, the damage is such that tree replacement is necessary, the Contractor shall replace the tree at their expense. The tree shall be of a like size and variety as the tree damaged, or, if of a smaller size, the Contractor shall pay the owner of said tree a compensatory payment acceptable to the tree owner, subject to the approval of the City or other jurisdictional agency. The size of the trees shall not be less than 1-inch diameter nor less than 6 feet in height. Fines will be assessed against the Contractor for removal of trees without the prior written approval of the City. The minimum amount of the fine or restitution to the City will be the replacement of the tree removed, with a tree of equal or greater size and maturity and as approved by the City. Larger fines may be assessed against the Contractor depending on the circumstances and type of tree removed, especially in the case of trees listed in the City's Landmark Tree List. The value of such a tree shall be based, at minimum, on the full appraised value using the "trunk formula" method in accordance with the latest edition of The Guide for Plant Appraisal, 9th edition (published in

2000 by the International Society of Arboriculture, Savoy IL) and the Species Classification and Group Assignment (2004), a publication of the Western Chapter of the International Society of Arboriculture).

1.07 PROTECTION OF ADJACENT STRUCTURES

A. The Contractor shall take steps to protect adjacent structures from damage during all project activities, including, but not limited to, existing fencework, curb, sidewalk and gutter, grading and landscaping operations.

B. Any and all damage to adjacent structures shall be the responsibility of the Contractor.

C. If damage occurs, the Contractor will take immediate steps to remedy the situation in the field.

1.08 NOTIFICATION BY THE CONTRACTOR

A. Prior to any excavation in the vicinity of any existing underground facilities, including all water, storm drain, or other pipelines; and all roadway and state highway right-of-ways the Contractor shall notify the Underground Service Alert Agency (800.227.2600) and the respective authorities representing the owners or agencies responsible for such underground facilities not less than 48 hours prior to excavation so that a representative of said owners or agencies can mark the utility alignment or be present during such work if they so desire.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.03 MEASUREMENT AND PAYMENT

A. Full compensation for conforming to the provisions in this section "**Protection of Existing Facilities**," not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved, including mowing and irrigation of existing sod, and no additional compensation will be allowed therefor.

END OF SECTION

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SECTION 01 56 26 Temporary Construction Fencing

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary Construction Fencing.

PART 2 PRODUCTS

2.01 TEMPORARY CONSTRUCTION FENCING

A. Temporary construction fences and gates shall be furnished, installed, maintain, and relocated at the project site by the Contractor, as shown on the plans and as specified in these specifications and special provisions, and as directed by the Project Inspector, or Supervising Construction Coordinator.

B. The contractor shall be responsible for adjusting the layout of the fences as necessary to accommodate its work, to accommodate other contractors doing work, and accessing the site and building(s).

C. Temporary construction fencing shall be placed around the work area intended for use by the Contractor. A portion of the public street is available for use by the Contractor for staging. The Contractor shall submit a plan showing the location of the staging area for review by the City.

D. Temporary construction fencing and gates shall be chain link, type CL-6, six feet (6') high, as a minimum and shall conform to the specifications for permanent fencing of similar character as provided in Section 80, "Fences" of the Standard Specifications and these special provisions. Construction fencing and gates shall be simple to install, maintain, relocate, and remove. Concrete footings for metal posts will not be required. The temporary fences and gates shall be of a type that extends fully to the ground. The Contractor may upgrade the fence in height or quality to meet the conditions at the site.

E. Materials may be commercial quality providing the dimensions and sizes of said materials are equal to, or greater than, the dimensions and sized specified by the Standard Specifications.

F. Used materials may be used providing such used materials are good, sound, and are suitable for the purposed intended. The Contractor shall be the approval of the Engineer prior to installing construction fencing and gates using used materials.

G. The Contractor shall get approval from the Engineer for location of temporary fences and gates prior to installing any materials.

H. Temporary construction fencing that are damaged from any cause including vandalism during the progress of the work shall be immediately repaired or replaced by the Contractor at this expense. Any damage caused by the use of temporary fences and gates to existing features including, but not limited to, existing turf areas, holes in the ground, damage to existing vegetation, etc. shall be repaired or replaced by the Contractor at this expense. If holes are caused by the use of temporary

fences and gates, they shall be backfilled in accordance with the General Conditions, Article 7, (B).

PART 3 EXECUTION

3.01 SPECIAL CONDITIONS OF THE SITE

A. The area to be set aside for the use of the Contractor is indicated on the Drawings as "Limit of Work" and “Staging Area” Except for sub-surface utility work, curb and gutter, temporary roads and any other work specifically shown or noted, the Contractor shall confine his operations within the limits-of-work so indicated.

B. Work shall not proceed for the site until all temporary construction fencing is installed.

3.02 CONDITIONS AT THE SITE

A. The Contractor shall make all necessary inspections of the job site and of the work to be fully aware of the conditions of all temporary construction fencing at all times.

B. The Contractor shall take all steps necessary to prohibit any part of the premises, the buildings, or structures to be overloaded by setting thereon any material or equipment, or performing thereon any of his work, which could cause any loss, damage, and/or injury to person or property.

3.03 REMOVAL

Maintain all temporary construction fencing as long as needed for the safe and proper completion of the work. Remove all such temporary construction fencing as rapidly as progress of the work will permit.

3.04 FINAL SITE CLEAN-UP

See Section 01 77 00 “Closeout Procedures”.

3.05 MEASUREMENT AND PAYMENT

The linear foot unit price paid for **“Temporary Construction Fencing”** shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work covered in this section, complete and in place as shown on the plans, as required by the Special Provisions, and as required by the City Project Manager.

END OF SECTION

SECTION 01 56 30 Tree Pruning and Root Pruning

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Refer to all other sections, determine the extent and character of related work, and coordinate all work so that all work associated with this section is complete.

B. This section is complete in its entirety and is not supplemental to the standard specifications for Caltrans except where specifically noted.

C. Related Sections

1. Section 01 56 39 “Tree Protection”

2. Section 02 41 19 “Site Demolition”

1.02 DESCRIPTION OF WORK

A. The work in this section includes furnishing all labor, materials, equipment and services necessary to complete the work described on the Demolition Plans, and as specified herein but is not limited to:

B. Air Spade or Hand Excavation at Tree Roots around existing - This shall include root pruning, as directed at the direction of the City’s Assigned Urban Forester or arborist.

1.03 SUBMITTALS

A. Product data: Submit complete materials list of items to be provided under this Section. Include manufacturer's literature.

B. Submit qualifications of Certified Arborist and California licensed Pest Control Advisor.

C. Resume of arborist including certifications, licenses, and list of employees.

1.04 QUALITY ASSURANCE

A. General Responsibility: The Contractor shall be directly responsible for protection and welfare of existing trees, which are noted to remain. This responsibility shall continue throughout all phases of work until the entire project is completed and accepted by the City and through completion of the maintenance period.

B. Qualifications of workmen: Tree pruning, root pruning and trimming shall be performed only by a certified arborist, or certified tree worker, certified by the International Society of Arborists; in compliance with ISA or ANSI standards. Contractor shall be responsible for scheduling City’s Assigned Arborist, and shall have the arborist on site continuously while existing trees are being pruned or remedial work is being performed.

C. Reference Standards: Published specification, standards, tests, or recommended methods of trade industry apply to work of this section.

D. Work shall be done according to approved submittals and field direction from City’s Assigned Arborist.

1.05 REFERENCE STANDARDS

A. Published specifications, standards, tests or recommended methods of ISA or governmental organizations apply to work of this Section.

1. All tree pruning shall be in conformance with ISA standards for Crown Thinning and Crown Reduction.

2. Tree Pruning Guidelines, International Society of Arboriculture (ISA); 1995 edition.
3. American National Standards institute (ANSI) A300. 1996. “Standard Practices for Tree, Shrub and Other Woody Plant Maintenance”
4. Cal-OSHA Tree Work Safety Regulations. Title 8: Article 12
5. Code of Ethics, Western Chapter ISA; 1995 edition.
6. Glossary Of Terms, Western Chapter ISA; 1995 edition.
7. Pruning Standards, Western Chapter ISA; 1995 edition.
8. Standard for Tree Care Operations, American National Standards Institute, (Z133.1); latest edition.
9. International Society of Arboriculture (ISA) “Guide for Establishing Values of Trees and Other Plants,” prepared by the Council of Tree and Landscape Appraisers.
10. All climbing techniques shall be in accordance with the Reference Standards.

1.06 SCHEDULE

A. Work shall be done according to an approved schedule submitted in “Submittals”.

1.07 WARRANTY

A. Contractor shall warrant that all trees other than those slated for removal covered by the provisions of this Section will be healthy and in flourishing condition of active growth one year from the date of Project Completion and Acceptance.

B. Requirements of the warranty shall apply if failure of Contractor to take specified precautions and work within restrictions of this Section contributes to destruction of or injury to a tree, in the judgment of the City Urban Forster.

C. If a tree is destroyed, or injured so that in the judgment of the Parks Supervisor it should be replaced, it shall be removed at Contractor's expense. The Contractor shall replace in kind up to the appraised value of the tree lost.

PART 2 PRODUCTS

2.01 EQUIPMENT

A. Root Pruning: All work shall be done by hand using chain saws, hand saws, Sawz-all, or other method that allows for surgical removal. The use of mechanical root pruning tools, such as a Vermeer Root Pruner may be allowed so along as the equipment does not result in the roots being broken, fractured, or split horizontally beyond the vertical cut.

B. Vacuum Excavator: Roots may be exposed using a water and vacuum excavator, Ditch Witch FX20, FX30, FX60 or equal product.

C. Backhoe: Roots within radial trench may be removed using a backhoe after roots have been cut clean.

D. Herbicide: To kill turf around trees, use a contact herbicide. Translocated herbicides will not be acceptable, or used near the trees.

E. All equipment used for completing the work covered in this section shall conform to the requirements of CAL-OSHA Tree Work Safety Regulations Title 8: Article 12.

2.02 CERTIFIED ARBORIST

A. Root pruning shall be performed only by a certified arborist, or certified tree worker, certified by the International Society of Arborists; in compliance with ISA or ANSI standards.

B. Contractor, or certified arborist performing tree removal, tree pruning, and root pruning, shall be responsible for obtaining and scheduling the City's Assigned Arborist for site inspection, and shall have the City's Assigned Arborist on site continuously while existing trees or roots are being pruned or remedial work is being performed.

2.03 CITY ASSIGNED ARBORIST/CONSULTING ARBORIST

A. The City shall retain Hortscience as the City's Assigned Arborist/Consulting Arborist, for on-call work related to this project, if it is determined that the Contractor's construction activity may be detrimental to the health of existing trees.

B. The City's Assigned Arborist/Consulting Arborist shall be brought on site during construction to observe construction activities in and around the root zone of existing trees, make determinations on how to preserve the root zone, make determinations on roots to be cut, and direct the Contractor's operations within the drip line and root zone of the tree.

C. It will be the Contractor's responsibility to coordinate, and take direction from, and implement the direction of the City's Assigned Arborist/Consulting Arborist in the field under their supervision.

D. The City may determine that it is not necessary to have the consulting arborist on site, and will have the City Urban Forester observe and direct tree removal, tree pruning, crown thinning, and root pruning instead. The contactor Subcontractor will be required to schedule and coordinate with the City Urban Forester to ensure work is done to the City's satisfaction.

E. Schedule should be submitted at least 1 week before anticipated work on site is to be performed.

F. City Urban Forester – Dennis Montes, 510-494-4746.

PART 3 EXECUTION

3.01 PRE-CONSTRUCTION TREATMENTS AND RECOMMENDATIONS

A. The Contractor shall meet with the Consulting Arborist or City Urban Forester before beginning work to discuss work procedures, tree protection and tree pruning.

B. Where possible, cap and abandon all existing underground utilities within the Tree Protection Zone (TPZ) in place. Removal of utility boxes by hand is acceptable but no trenching should be performed within the TPZ in an effort to remove utilities, irrigation lines, etc.

C. Install Tree Protection Fencing at all trees to be retained to completely enclose the Tree Protection Zone prior to demolition, grubbing or grading. Tree Protection Fences shall be 6 ft. chain link or equivalent as described in Section 01 56 39. Tree Protection Fences are to remain until all grading and construction is completed.

D. All tree work shall comply with the Migratory Bird Treaty Act as well as California Fish and Wildlife code 3503-3513 to not disturb nesting birds. Tree pruning and removal should be scheduled outside of the breeding season to avoid scheduling delays.

Breeding bird surveys should be conducted prior to tree work. Qualified biologists should be involved in establishing work buffers for active nests.

E. Tree(s) to be removed that have branches extending into the canopy of tree(s) to remain must be removed by a qualified arborist and not by construction Contractors. The qualified arborist shall remove the tree in a manner that causes no damage to the tree(s) and understory to remain. Tree stumps shall be ground 12" below ground surface.

F. Any brush clearing required within the TPZ shall be accomplished with hand-operated equipment.

G. Trees to be removed shall be felled so as to fall away from TPZ and avoid pulling and breaking of roots of trees to remain. If roots are entwined, the consultant may require first severing the major woody root mass before extracting the trees, or grinding the stump below ground.

H. All down brush and trees shall be removed from the TPZ either by hand, or with equipment sitting outside the TPZ. Extraction shall occur by lifting the material out, not by skidding across the ground.

I. Apply and maintain 4-6" of wood chip mulch within the TPZ.

3.02 HAND EXCAVATION AROUND TREES

A. Clear and grub and excavate within the drip line and root zone of the existing trees to achieve new subgrade, facilitate utility trenching and establish finished grade.

B. Excavate to new subgrade to accommodate full concrete section per the project plans and details.

C. When excavation is to occur around, and within the drip line of trees, as indicated on the plans, all excavation work shall be done by hand within the tree root zone. Mechanical excavation will not be allowed.

D. The minimum bid for this work shall be based on hand excavation. At the contractor's option, with approval by the Project Landscape Architect, excavation can be done using a water or vacuum excavator (air spade) to minimize damage to root system, and to reduce the line item cost. Mechanical excavation will not be allowed. The contractor shall be required need to provide the comparative cost to indicate the cost reduction.

E. Hand dig, or water/vacuum excavate a trench at the edge of the area where excavation will be required to construct paving, curb and gutter. Depth of the trench should be determined by the depth of the excavation required, including aggregate base, to construct the paving, curb and gutter, or concrete paving.

F. Main lateral roots and taproots shall not be cut. Smaller roots that interfere with installation of new work may be cut with prior approval as described elsewhere herein.

G. Roots shall be completely exposed to at least 2 inches below the bottom of the roots. Main lateral roots and taproots shall only be pruned under the direction of the City's Arborist. An attempt shall be made to preserve all roots 1/2" diameter and larger. Roots under two (2) inches in diameter, that interfere with installation of new work, may be cut and removed after field review and approval of such proposed cuts by the City's Arborist.

H. Roots shall be relocated in backfill areas wherever possible. If large, main lateral roots are encountered, they shall be exposed beyond excavation limits as required to bend and relocate without breaking. If relocation of roots is not practical, roots shall

be cut and removed from within the excavation limits after field review and approval of such cuts by the City's Arborist.

I. Exposed roots shall not be allowed to dry out before permanent backfill is placed. Temporary earth cover shall be provided, or roots shall be packed with peat moss and covered with a layer of burlap and temporarily supported and protected from damage until covered with backfill. The cover over the roots shall be wetted twice a day, during day and evening, at the Contractor's expense, and no additional payment shall be made therefore.

J. The above excavations should be carried out by a certified arborist or certified tree worker, and monitored by the City's Arborist. At that time, the City's Arborist should evaluate any damage which has already occurred and the extent of the root damage that would be required to construct the proposed improvements. It will be determined at that time whether the tree is a satisfactory candidate for preservation. If the tree is to be preserved, the City's Arborist should direct and monitor the pruning of roots and removal of loose bark as needed.

3.03 REPAIR COMPENSATION

A. Damage to existing tree crown or roots over 1-inch in diameter shall be immediately reported to the Engineer in writing, and, at the direction of the Engineer, with recommendations from the City's Assigned Arborist, repair damage immediately at the Contractor's expense and monitored by a the City's Assigned Arborist.

B. The City's Assigned Arborist shall direct repair of trees damaged by construction operations. Repairs shall be made promptly after damage occurs to prevent progressive deterioration of damaged tree.

C. Damaged tree limbs or trees which have died as a result of injury during construction shall remain the property of the City and shall remain or be removed by the Contractor as directed by the Engineer, with recommendations from the City's Urban Forester.

D. Any tree to remain which is damaged or destroyed owing to the Contractor's negligence or failure to provide adequate protection shall be compensated for according to the full appraisal value using the "trunk formula" method in accordance with the latest edition of The Guide for Plant Appraisal, 9th edition (published in 2000 by the International Society of Arboriculture, Savoy IL) and the Species Classification and Group Assignment (2004), a publication of the Western Chapter of the International Society of Arboriculture.

E. The Contractor shall immediately notify the City and/or other jurisdictional agency if any tree is damaged by the Contractor's operations. If, in the opinion of the City, the City's Assigned Arborist, or other said agency, the damage is such that tree replacement is necessary, the Contractor shall replace the tree at their expense. The tree shall be of a like size and variety as the tree damaged, or, if of a smaller size, the Contractor shall pay the City of said tree a compensatory payment acceptable to the tree City, subject to the approval of the City or other jurisdictional agency. The size of the trees shall not be less than 1-inch diameter nor less than 6 feet in height. Fines will be assessed against the Contractor for removal of trees without the prior written approval of the City. The minimum amount of the fine or restitution to the City will be the replacement of the tree removed, with a tree of equal or greater size and maturity and as approved by the City. Larger fines may be assessed against the Contractor depending on the circumstances and type of tree removed, especially in the case of trees listed in the City's Landmark Tree List. The value of such a tree shall be based, at minimum, on the full appraised value using the "trunk formula" method in accordance with the latest edition of The Guide for Plant Appraisal, 9th edition (published in 2000 by the International Society of Arboriculture, Savoy IL) and

the Species Classification and Group Assignment (2004), a publication of the Western Chapter of the International Society of Arboriculture).

3.04 ROOT PRUNING

A. Upon demolition of existing site conditions, the Contractor shall excavate around tree roots requiring further field investigation at the direction of the City's Arborist. Roots shall be exposed to allow an unimpeded view around the entire root circumference.

B. Saw cutting of asphalt or concrete to full depth, should not occur adjacent to trees until the exposed roots have been adequately evaluated and there is assurance from the City' Assigned Arborist that full depth saw cutting will not result in detrimental damage to the root structure of the trees in question.

C. Once exposed, the City's Arborist shall make a determination regarding which roots to cut, where to cut them, approve the tools used to make the cuts and observe the root cuts; or, once exposed the arborist may determine that the tree will simply require removal, as root pruning may structurally weaken the tree; or, the arborist may determine that the roots do not require any pruning and the Contractor may then install base material to achieve the new road section, or curb and gutter section.

D. The Contractor shall coordinate with the City's Assigned Arborist to have them on-site to help coordinate and direct the root pruning operation.

E. If the underground root conditions differ from the direction and information shown on the plans, the Contractor shall excavate, root prune, tree trim, or remove trees at the City Arborist's direction in the field.

F. All excavation of tree roots, root pruning, tree removal, and tree trimming work, performed by the Contractor, shall be observed and directed by the City's Arborist

G. Roots shall be cut within the trench, or excavation limits, with a root cutting machine, rock cutter, sawz-all, or other approved root pruning equipment.

H. Any roots 1-inch in diameter or larger requiring removal shall be cut cleanly in live tissue. Cut and exposed roots and the surrounding soil shall be moistened and covered with a thick mulch (4 inches) to prevent desiccation. No pruning seals or paints shall be used on wounds. A water absorbent mater (i.e. burlap) shall be secured at the top of the trench and shall be draped over the exposed roots. This material shall be kept moistened and soil shall be replaced as soon as practicable.

I. After root cutting is complete along the edge of the proposed trench or excavation, it is acceptable to either grub out or grind out with a 24 inch stump grinder surface roots which are more than 8 feet from the trunk.

J. Do not encroach closer than 8 feet to the trunk of each tree.

K. While excavation is commencing the Contractor shall coordinate to have the City's Assigned Arborist on site to observe the excavation and direct root pruning as needed to expedite construction effort.

L. All work described in this section shall be performed according to the following published specifications, standards, tests or recommended methods:

1. Tree Pruning Guidelines, International Society of Arboriculture (ISA); current edition.
2. Cal-OSHA Tree Work Safety Regulations. Title 8: Article 12
3. Code of Ethics, Western Chapter ISA; current edition.
4. Glossary Of Terms, Western Chapter ISA; current edition.

5. Pruning Standards, Western Chapter ISA; current edition.

6. Standard for Tree Care Operations, American National Standards Institute, (Z133.1); current edition.

3.05 MEASUREMENT AND PAYMENT

A. The each price paid for "**Hand Excavate at Trees**" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all the work covered in this section, complete in place as shown on the plans, as required by the Special provisions, and as directed by the City's Engineer or their designee, and no additional compensation will be allowed therefor.

END OF SECTION

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SECTION 01 56 39 Tree Protection

PART 1 GENERAL

1.01 DESCRIPTION

A. Section includes protecting and maintaining existing trees, not specifically designated for removal, affected by this Work, whether or not tree trunk is located within project site.

B. Tree Protection Measures shall be applied to all Landscape Trees designated for preservation with tree protection fencing as indicated on plans. These measures shall include but not be limited to all items listed within the “Tree Preservation Notes” and the “Tree Preservation Detail” including all Tree Protection fences.

C. General: The Contractor shall exercise all necessary precautions so as not to destroy or damage any trees, or other vegetation, including that landscaping material lying within the project limits, and shall not trim or remove any trees unless such trees have been approved for trimming or removal by the City or other jurisdictional agency. All existing trees and other vegetation, which become damaged during demolition, shall be trimmed or replaced by the Contractor in consultation with a certified arborist to the satisfaction of the City and/or agency. Tree trimming and replacement shall be accomplished as approved and directed by the Engineer.

D. Replacement: Refer herein to Section 3.05 “Tree Replacement”

E. All trees to be preserved and protected shall be watered by whatever means necessary to keep the trees in a healthy condition.

1.02 RELATED SECTIONS

A. Section 01 56 30 “Tree Pruning and Root Pruning”

B. Section 02 41 00 “Site Demolition”

C. Section 31 20 00 “Rough Grading”

D. Landscape Standard Details, LSD-9 & LSD-10, or most current revision.

1.03 DEFINITIONS

A. DBH – Diameter at Breast Height

B. "Drip line" is defined as outermost extent of tree canopy, encompassing tree canopy, trunk, roots and soil. In no case shall drip line encompass an area less than a 10 foot diameter circle.

C. "Injury" is defined, without limitation, as any bruising, scarring, tearing, or breaking of roots, branches or trunk; or soil compaction or contamination resulting in decline of health of tree.

D. "Critical Root Zone" is defined as a minimal distance from the trunk where roots must be protected from construction related activities

E. “Root Pruning”: All pruning shall be done by a State of California Licensed Tree Contractor (C61/D49). All pruning shall be done by Certified Arborist or Certified Tree Worker in accordance with the Best Management Practices for Pruning (International Society of Arboriculture, 2008-Revised) and adhere to the most recent editions of the American National Standard for Tree Care Operations (Z133.1) and Pruning (A300).

F. Consulting Arborist: Refer to Section 01 56 30 “Tree Removal, tree Pruning, and Root Pruning”, Part 2.03.

G. Certified Arborist or Certified Tree Worker: A worker that has been certified by the International Society of Arboriculture (ISA), in compliance with ISA standards, as experienced and capable of tree trimming and root pruning per the ISA guidelines, or the requirements as defined herein.

H. Landscape Standard Details (LSD) – Included as part of the Fremont City Standard Details for Improvements within Public Right of Way; Approved by City Council, Resolution No 2006-31, April 1985; amended December 13, 2011; and last revised September 5, 2012.

I. Infrastructure: The limits of work of the project as delineated on the plans, described in the special provisions, and as described by the Standard Specifications.

1.04 QUALITY ASSURANCE

A. General Responsibility: The Contractor shall be directly responsible for protection and welfare of existing trees, which are noted to remain. This responsibility shall continue throughout the full construction period until the entire project is completed and accepted by the City and through completion of the maintenance period.

B. Qualifications of workmen: Trimming shall be performed only by a certified arborist, or certified tree worker, certified by the International Society of Arborists; in compliance with ISA or ANSI standards. Contractor shall be responsible for obtaining and scheduling arborist, and shall have an arborist on site continuously while existing trees or roots are being pruned or remedial work is being performed. Arborist must be approved by the City of Fremont Urban Forester in writing.

C. Reference Standards: Published specification, standards, tests, or recommended methods of trade industry apply to work of this section.

D. International Society of Arboriculture (ISA) “Guide for Establishing Values of Trees and Other Plants,” prepared by the Council of Tree and Landscape Appraisers.

1.05 JOB CONDITION

A. Contractor shall install tree protection fencing before any construction equipment enters the site, and must not be removed for the duration of the project. Fencing can be adjusted during the demolition, grading and construction activities.

B. Sequencing schedule: Coordinate and cooperate with other trades to enable the work to proceed as rapidly and efficiently as possible.

1.06 GUARANTEE

A. Contractor shall guarantee that all plants covered by the provisions of this Section will be healthy and in flourishing condition of active growth one year from the date of final completion.

B. During the warranty period the Contractor shall be liable for damages to all trees covered by the provisions of this Section.

PART 2 PRODUCTS

2.01 TREE PROTECTION FENCING

A. Tree Protection Fence: 6-foot high chain link fence, sturdy and capable of acting as a barrier against objects, vehicles, etc., and designed so as to allow for access to

inside for care of tree as required. It shall be continuously maintained and repaired as necessary. Metal shall be galvanized.

B. Refer to LSD-9 and Tree Protection Details and notes incorporated into the project plans.

C. Install tree protection fencing around trees to be preserved at a distance required from the base of the trunk to the drip line of the tree. Fencing shall remain until landscape work has commenced, and it shall be removed when authorized by the Project Landscape Architect.

D. Fence Relocation: During the course of construction, relocation of the fence may be required to facilitate construction. Contractor shall request authorization to relocate fence. Requests for Authorization shall be in writing to the City's Engineer 48 hours prior to anticipate relocation at no cost to the City.

2.02 TREE BARK MULCH

Prior to beginning construction, install tree protection fencing. For trees being protected using LSD-9 immediately after fencing is installed, cover the entire soil area inside the fence with a three-inch thick layer of mulch, holding the mulch back from the tree trunk a minimum of 6 inches. Mulch shall be Sun-up Walk-on bark, or approved equal.

PART 3 EXECUTION

3.01 TREE PROTECTION AND TREE PRESERVATION

A. Tree Preservation Notes per City's Standard Detail LSD-9, LSD-10 and the contract plan details:

1. Current standard detail at city engineering division shall prevail.
2. Tree protection measures must be in place before construction, demolition and/or grading activities commence. City of Fremont will stop construction if tree protection measures are not in place and maintained throughout the construction period.
3. Trees called out for preservation shall be fenced at the drip line. Fencing may occur at the combined drip lines of groves of trees. Place a three-inch thick layer of bark mulch beneath drip lines of trees to be preserved. Keep bark mulch back from the tree trunk a minimum of 6 inches.
4. Fencing shall be 6 feet tall chain link fencing with steel posts embedded in the ground.
5. No grading shall occur within the drip lines/fenced area of existing trees unless required by the plans, or the nature of the work.
6. No construction materials or construction vehicles may be stored within the drip lines/fenced area of existing trees.
7. Construction vehicles or machinery may not pass between two or more existing trees identified for preservation if their canopies are within 10 feet of touching. Additional fencing may be required by the city as needed.
8. The Contractor is required to have an arborist certified by the International Society of Arboriculture (ISA), approved by the city, on site if site construction efforts require removal of existing roots or branch pruning. Roots approved for cutting must be cut cleanly with a saw. Ripping or shredding roots subject to fine/penalty.

9. Unauthorized tree removal is subject to replacement equal to the appraised value of the tree lost per FMC 4-5108.

10. The Contractor is required to water, fertilize and attend to other maintenance needs of existing trees to maintain healthy growth throughout the construction period. An earthen berm measuring minimum 6 feet in diameter, and 6 inches in height shall be constructed at the base of each tree to function as a temporary watering basin during the construction period. Trees shall be watered according to weather and tree species requirements.

11. If trees are being relocated: relocation of existing trees shall occur under the observation and direction of a certified arborist approved by the city of Fremont.

12. Trunk wrap protection shall occur for trees situated in small tree wells or sidewalk planters.

B. Contractor shall install tree protection fencing before any construction equipment enters the site, and must not be removed during the demolition or grading process. If fencing is installed, fencing can be adjusted during the demolition, grading and construction activities.

C. Install tree protection fencing around trees to be preserved at a distance required from the base of the trunk to the drip line of the tree. Fencing shall remain until landscape work has commenced, and it shall be removed when authorized by the Engineer.

D. Immediately after fencing is installed, cover soil area inside fence with three-inch thick layer of mulch. Mulch shall be held back from the base of the tree trunk a minimum of 6 inches.

E. During the course of construction, relocation of the fence may be required to facilitate construction. Contractor shall request authorization to relocate fence. Requests for Authorization shall be in writing to the City's Engineer 48 hours prior to anticipate relocation at no cost to the City.

3.02 PROTECTION OF TREES

A. Water: Provide ample water supply of potable quality and sufficient quantity for all operations required in this section. The Contractor shall provide a schedule to the Project Manager outlining the proposed watering schedule for trees affected by construction.

B. Trees shall not be allowed to deteriorate and shall be maintained in a healthy and vigorous condition during the course of construction and maintenance period.

C. During the course of construction, the Contractor shall take all necessary precautions, as outlined herein, to protect the existing trees to be preserved from injury or death. Protection shall be given to the roots, trunk, and foliage of all existing trees to remain. Trees, subject to the provisions of this Section, which have been injured, or may be affected by construction, shall be assessed by the City's Arborist, and then repaired immediately by a certified tree worker, under the direction of the City's Arborist. Repair may include removal of rough edges and sprung bark and severely injured branches, or other necessary work, as determined by the City's Arborist.

D. Irrigation system servicing trees that will be affected by construction shall be repaired, replaced, or relocated according to the plans, within 30 days of removal. If the existing irrigation system is turned off, removed, or out of service for more than 30 days, all trees shall be hand watered, or watered by whatever means necessary to keep the trees in a healthy and vigorous condition during the course of construction and maintenance period.

E. Tree protection fencing shall be installed for the protection of existing trees to be preserved. No construction, demolition, or work of any nature will be allowed within the fenced area without prior written approval by the Project Landscape Architect.

1. Approval by the City's Project Landscape Architect for work within the fenced area shall not release the Contractor from any of the provisions specified herein for the protection of existing trees to be preserved.

2. During the course of construction of approved work within the fenced area, no roots larger than two inches in diameter shall be cut without prior written approval the City's Project Landscape Architect.

F. During construction, the existing site surface drainage patterns shall not be altered within the area.

G. Take necessary measures to maintain healthy living conditions for existing trees to be preserved. Such measures shall include but not limited to periodic washing of leaves for removal of dust, irrigation, redistribution of bark mulch, etc.

H. No construction, demolition, or work of any nature will be allowed within the fenced area without prior written approval by the City's Engineer or Project Landscape Architect. Approval by the City's Engineer for work within the fenced area shall not release the Contractor from any of the provisions specified herein for the protection of existing trees to be preserved. During the course of construction of approved work within the fenced area, no roots larger than two inches in diameter shall be cut without direction from the City's Arborist in the field.

I. Do not permit the following within drip line of any existing tree to be preserved.

1. Storage or parking of automobiles or other vehicles.

2. Stockpiling of building materials or refuse of excavated materials.

3. Skinning or bruising of bark.

4. Use of trees as support posts, power poles, or signposts; anchorage for ropes, guy wires, or power lines; or other similar functions.

5. Dumping of poisonous materials on or around trees and roots. Such material includes but is not limited to paint, petroleum products, contaminated water, or other deleterious materials.

6. Cutting of tree roots by utility trenching, foundation digging, placement of curbs and trenches, and other miscellaneous excavation without prior approval of the Engineer and monitored by a certified arborist.

7. Damage to trunk, limbs or foliage caused by maneuvering vehicles or stacking material or equipment too close to the tree.

8. Compaction of the root area by movement of trucks or grading machines; storage of equipment, gravel, earth fill, or construction supplies.

9. Excessive water or heat from equipment, utility line construction, or burning of trash under or near shrubs or trees.

10. Damage to root system from flooding, erosion, and excessive wetting and drying resulting from dewatering and other operations.

3.03 EXCAVATION AROUND TREES

A. Refer to Section 01 56 30 "Tree Pruning and Root Pruning"

3.04 REPAIR COMPENSATION

Refer to Section 01 56 30 “Tree Pruning and Root Pruning”

3.05 TREE REPLACEMENT

A. The Contractor shall immediately notify the City and/or other jurisdictional agency if any tree is damaged by the Contractor’s operations. If, in the opinion of the City or said other agency, the damage is such that replacement is necessary, the Contractor shall replace the tree at their expense. The tree shall be of a like size and variety as the tree damaged, or, if of a smaller size, the Contractor shall pay the City of said tree a compensatory payment acceptable to the tree City, subject to the approval of the City or other jurisdictional agency.

B. The size of the trees shall not be less than 1-inch diameter nor less than 6 feet in height.

C. Fines will be assessed against the Contractor for removal of trees without the prior written approval of the City. The minimum amount of the fine or restitution to the City will be the replacement of the tree removed, with one of equal or greater size and maturity and as approved by the City. Larger fines may be assessed against the Contractor depending on the circumstances and type of tree removed, especially in the case of trees listed in the City’s Historical Tree List.

3.06 IRRIGATION SYSTEM

A. If system is in place, protect existing irrigation system service point from damage.

B. If repair or relocation is required, make repairs, or perform relocation, ensure it is automated, and re-activate the system in order to water trees that may be affected by excavation, root pruning or crown thinning.

C. Set up a watering program to ensure that existing trees are provided with adequate water to prevent drying out during construction

D. Full compensation for conforming to the provisions in “Irrigation System” and the replacement, relocation and activation of the existing irrigation system shall be considered as included in the units price paid for “Irrigation Modifications” and no additional compensation will be allowed therefor.

3.07 TREE TRIMMING, TREE PRUNING, CROWN THINNING, ROOT PRUNING

Refer to Section 01 56 30 “Tree Removal, Tree Pruning and Root Pruning”

3.08 MAINTENANCE

Contractor shall be responsible to perform periodic inspections of existing trees to be preserved and submit written proposals to the City’s Engineer for additional maintenance work as may be required to ensure the health and general well-being of the trees. Contractor shall retain, at the direction of the Engineer, a certified arborist to perform or monitor this work.

3.09 MEASUREMENT AND PAYMENT

A. The linear foot final pay quantity for “**Tree Protection Fencing (F)**”, shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all the work covered in this Section to protect trees, including placement of bark mulch, related maintenance, watering, and the relocation of fencing to facilitate construction, complete in place as shown on the plans, as required by the Special Provisions, and as required by the City’s Engineer, Landscape Architect or Certified Arborist. Quantities shall not be measured and shall be the final pay quantity for which payment is made as specified in Section 8.2 “Progress Payment” and 8.8,

"Final Payment" of the General Conditions and no additional payment shall be made therefor.

END OF SECTION

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SECTION 01 57 19 Temporary Controls

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pedestrian and patron controls

B. Traffic plans and controls

C. Construction operations under traffic

D. Pollution Abatement – General Requirements

E. Dust control.

F. Erosion and Sediment Control and Water Pollution Control

G. Rubbish control.

H. Mud control.

I. Noise and vibration control.

J. Chemicals.

1.02 REFERENCES

A. State of California, Department of Transportation (Caltrans), Standard Specifications 2018.

B. State of California, Department of Transportation (Caltrans), California Manual of Uniform Traffic Control Devices (California MUTCD), Part 1, Temporary Traffic Control.

C. State of California, Vehicle Code.

D. State of California General Permit Order 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2012-006-DWQ) or most current version.

E. California Regional Water Quality Control Board San Francisco Bay Municipal Regional Storm water NPDES Permit, Order No. R2-2015-0049.

F. American National Standards Institute (ANSI) S1.4: Specification for Sound Level Meters.

G. Refer to Article 7.9 of the General Conditions for Worksite Maintenance and Operation including:

1. Air quality and air emissions control
    a. Dust and debris
    b. Clean up
    c. Disposal and Completion

American National Standards Institute (ANSI) S1.4: Specification for Sound Level Meters.

1.03 RELATED SECTIONS

A. Section 01 41 00 - Regulatory Requirements.

1.04 SUBMITTALS

A. General: Refer to Contract Specifications Section 01 30 00, Submittal Procedures.

B. Water Pollution Control Plans

C. Noise and Vibration Monitoring Plan as described in Part 1.12, herein.

1.05 PEDESTRIAN AND PATRON CONTROLS

A. Pedestrian Handling Plan

1. The Contractor will prepare a pedestrian handling plan for the Work within Park property to reflect any changes in pedestrian and patron paths including the accessible path. The accessible path will be as determined by the City in accordance with the requirements of California Building Code and the Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines. The pedestrian handling plan will include drawing(s) showing proposed pedestrian handling devices including temporary signage and wayfinding signs. The Contractor will submit the plan for review and approval by the City's Engineer. All pedestrian handling devices and signage will be in compliance with the accessibility requirements of the California Building Code and the Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines.

a. Include pedestrian handling plans for each phase of the work requiring different pedestrian diversion patterns and methods of control. Include for each phase detailed schedules for performance of work and include proposed pedestrian handling devices.

B. Work Area Controls

1. All construction work within and around the Park facilities will be separated from the public with appropriate barriers to prevent public access to construction areas and to contain construction hazards.

a. When the construction work is not within the Worksite perimeter fence, a barrier will be placed around the construction work area to prevent public access to the work area and to protect the public from construction operations. The area to be enclosed within barriers will not encroach into an exit path nor block the access path to elevators, escalators or stairways. Barriers on the platform level will not be closer than 7 feet from the platform edge. Barriers on the concourse level will not interfere with access to fare gates or automatic fare collection vending equipment unless approved by the Engineer in writing.

b. A barrier that will be removed at the end of the work hours or work shift is a short- term barrier. Work performed within a short-term barrier must be able to be safely secured and not present a hazard to the public when the barrier is removed. Short- term barriers can be portable crowd control barriers, traffic delineator connected with rails, etc. to form a solid barrier, or other field constructed barriers approved by the Engineer.

c. A barrier that protects work that cannot be safely secured, is a hazard to the public, or remains in place after the end of the work hours or work shift is a long-term barrier. Long-term barriers will be a minimum of 8 feet in height. Long-term barriers will be constructed in accordance with the Barrier Design requirements of Chapter 33 of the California Building Code, and will be constructed with fire resistant materials. The use of fire retardant treated lumber and plywood is acceptable. Long-term barriers will be painted and maintained free of graffiti; paint color to be selected by the Engineer.

1.06 TRAFFIC PLANS AND CONTROLS

A. The Contractor will prepare a traffic control plan required for the Work, if street closure is foreseen in order to accomplish construction. If no road closure is required, the requirement for a traffic control plan is waived.

B. The traffic plan shall include drawings showing proposed traffic control devices including temporary signage and temporary pavement markings and striping. Traffic control shall conform to the provisions of Part 6, Temporary Traffic Control of the latest California Manual on Uniform Traffic Control Devices.

C. The Contractor shall furnish, install, operate, maintain, and remove when no longer required, all traffic control and protective devices required for the approved traffic plan.

D. The traffic control plan will be submitted to the Engineer in accordance with Article 15 – Special Conditions, and Section 01 30 00 Submittal Procedure.

1.07 CONSTRUCTION OPERATIONS UNDER TRAFFIC

A. "Construction equipment" is defined as all types of equipment, vehicles, and tools used in connection with construction work. The term "workers" includes every person or firm performing work in or adjacent to public streets.

B. When in traffic lanes, all vehicles and equipment will be operated at normal traffic speeds. If this is not practicable, a slow moving vehicle emblem will be displayed in accordance with the California Vehicle Code. Construction equipment will not be parked in any lane intended for use by normal traffic. Equipment parked or stored at the work site will be behind a guard rail, barrier, curb, or other protective device.

C. One-Way Traffic: No construction equipment will be operated in traffic lanes, except in the designated direction of travel for respective lanes.

D. Equipment Travel:

1. No construction equipment other than that designated and used for general highway transportation will be moved on streets during hours of darkness or periods of adverse weather conditions that reduce normal visibility.

a. Any construction equipment or material required for construction operations which exceeds the maximum vehicle dimensions specified in the Motor Vehicle Code, will be moved only in accordance with established State and local regulations. No such oversize load will be moved over public streets without first obtaining approval of the appropriate jurisdictional authority.

E. When flagging is required, provide certified flaggers and flagging in accordance with the requirements of the California MUTCD, Part 6.

F. All temporary control devices in connection with construction work will be removed at the close of the workday, unless the state of the work is such that warning devices are still needed and are adapted for night closing.

1.08 POLLUTION ABATEMENT - GENERAL REQUIREMENTS

A. Conduct construction operations in a manner that will minimize pollution of the environment surrounding the area of the Work by all practicable means and methods. Apply specific controls as specified in the Contract Specifications and as follows:

1. Waste Materials: No waste or eroded materials shall be allowed to enter natural or man-made water or sewage removal systems. Eroded materials from excavations or stockpiled fill shall be contained within the Jobsite.

1.09 DUST CONTROL

A. Refer to Article 7.9 of the General Conditions, “Worksite Maintenance and Operations”

B. The Contractor shall furnish all labor, equipment, and means required and shall carry out effective measures wherever and as often as necessary to prevent its operation from producing dust in amounts damaging to property, cultivated vegetation, or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity. The Contractor shall be responsible for any damage resulting from any dust originating from its operations. The dust abatement measures shall be continued until the Contractor is relieved of further responsibility by the City.

C. Upon failure of the Contractor to remove the nuisance dust as specified in Paragraph B within 2 hours after notification by the Supervising Construction Coordinator, the City may order that such work be done by others, and all costs therefore shall be deducted from monies owned or to be owed the Contractor.

D. It is understood that the provisions in Section 10, “Dust Control” will not prevent the Contractor from applying water or dust palliative for his convenience if he so desires; however, the Contractor shall endeavor, whenever possible to restrict the use of water to control dust for his convenience due to the current need to conserve water.

E. As a part of the SWPPP, the Contractor shall submit a Dust Control Plan describing proposed methods and equipment to be used for dust control, street sweeping and cleaning operations.

F. Contractor shall provide dust control at all times, including holidays and weekends, as required to abate dust nuisance on and about the Jobsite which is a result of construction activities.

G. Quantities and equipment for dust control shall be sufficient to effectively prevent dust nuisance on and about the Jobsite; and when weather conditions warrant, sprinkler equipment shall be on hand at all times for immediate availability.

H. The City Inspector, City Engineer or Project Manager shall have authority to order dust control work whenever conditions warrant, and there shall be no additional cost to the City therefor. Dust control shall be effectively maintained whether or not the City Inspector, City Engineer or Project Manager orders such work.

I. Complaints from the public shall be reported to the City Inspector, City Engineer or Project Manager and shall be acted on immediately.

J. Where earthwork operations are in progress, keep exposed earth surfaces dampened continuously. Also, keep dirt access ways and roads dampened continuously.

K. If portions of the Jobsite are temporarily inactive or abandoned for whatever reason, provide dust control and abatement continuously during such periods of inactivity.

L. Where dust resulting from construction activities has collected on public sidewalks and streets, hose down such sidewalks and streets to abate flying dust parts. Clean all sidewalks and streets from accumulated dirt and dust.

1.10 RUBBISH CONTROL

During the progress of the Work, the Contractor shall keep the site of the Work and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. The Contractor shall dispose of all rubbish and waste materials of any nature occurring at the Work site, and shall establish regular intervals of collection and disposal of such materials and waste. The Contractor shall also keep its haul roads free from dirt, rubbish,

and unnecessary obstructions resulting from its operations. Disposal of all rubbish and surplus materials shall be off the site of construction in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable laws and regulations.

1.11 MUD CONTROL

A. Contractor shall take proper measures to prevent tracking of mud onto public streets, drives, and sidewalks. Such measures shall include, but are not limited to, covering muddy areas on the Jobsite with clean, dry sand.

B. All egress from the Jobsite shall be maintained in a dry condition, and any mud tracked onto streets, sidewalks, or drives shall be immediately removed, and the affected area shall be cleaned. The City Inspector, City Engineer or Project Manager may order such work at any time the conditions warrant.

C. Contractor shall provide and maintain truck wheel washes and cleaning stations either at all points of haul route ingress and egress to public right-of-way or at a central location within the Jobsite. Wash water sedimentation removal and discharge quality shall be in accordance with regulatory requirements for discharge into receiving utilities or bodies of water. All trucks, or other vehicles leaving the Jobsite, shall be cleaned of mud and dirt, including mud and dirt clinging to exterior body surfaces of vehicles.

D. All trucks coming to the Jobsite or leaving the Jobsite with materials or loose debris shall be loaded in a manner that will prevent dropping of materials or debris on streets. Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately.

E. Contractor shall engage a street sweeping and cleaning service or otherwise provide for the sweeping and cleaning of haul routes and work areas within public right-of-way. Street sweeping and cleaning operations shall comply with City of Fremont requirements. The duration of this activity shall be concurrent with excavation, hauling, and stockpiling operations. The minimum cleaning and sweeping frequency shall be continuous during continuous hauling operations and as needed during intermittent operations. The City Inspector, City Engineer or Project Manager may order additional street sweeping and cleaning at no additional expense to the City as conditions warrant.

F. The applicable requirements for mud control shall be included in the Contractor's SWPPP.

1.12 NOISE AND VIBRATION CONTROL

A. Refer to Article 7.20 "Noise Control" of the General Conditions.

B. Requirements: Minimize noise caused by construction operations, and provide working machinery and equipment fitted with efficient noise suppression devices. Employ other noise abatement measures as necessary for protection of employees and the public. In addition, restrict working hours and schedule operations in a manner that will minimize, to the greatest extent feasible, disturbance to residents in the vicinity of the Work.

C. Definitions:

1. Daytime refers to the period from 7:00 a.m. to 5:00 p.m. local time daily except Sundays and legal holidays.

a. Nighttime refers to all other times including all day Sunday and legal holidays.

b. Construction Limits are defined for the purpose of these noise and vibration control requirements as the City right-of-way lines, construction easement boundaries, or property lines as shown in the Contract Drawings.

D. Contractor shall submit a Noise and Vibration Monitoring Plan describing proposed noise and vibration monitoring and recording equipment and positioning.

E. Noise Control Requirements: Contractor shall employ noise-reducing construction practices such that construction noise does not exceed the limits specified herein. Employ other noise abatement measures as necessary for protection of employees and the public. Measures to be employed may include but are not limited to the following:

1. Restrict working hours and schedule operations in a manner that will minimize, to the greatest extent feasible, disturbance to residents in the vicinity of the Work.

a. Use equipment with enclosed engines and/or high performance mufflers.

b. Locate stationary equipment as far as possible from noise-sensitive uses.

c. Construct noise barriers, such as temporary walls or piles of excavated material between noise activities and noise sensitive uses.

d. Re-route construction-related traffic along roads that will result in the least amount of disturbance to residences.

F. Vibration Control Requirements: Contractor will employ vibration-reducing construction practices such that construction vibration does not exceed 80 VdB (more than 1 hour per Day), 90 VdB (less than 1 hour per day), or 100 VdB (less than 10 minutes per Day), or a peak particle velocity damage threshold of 0.20 inch per second for fragile buildings or structures. Measures to be employed may include but are not limited to the following.

1. Locate vibration-generating equipment as far as possible from vibration-sensitive land uses.

a. Avoid simultaneous operation of multiple pieces of vibration-generating equipment.

b. Avoid nighttime construction in residential areas.

c. Avoid construction processes that generate high vibration levels

d. Avoid the use of vibratory rollers near vibration-sensitive uses.

G. Monitoring:

1. Monitor noise and vibration levels of work operations to assure compliance with the noise limitations specified herein. Retain record of noise measurements for inspection by the City Inspector, City Engineer or Project Manager.

a. Promptly inform the City Inspector, City Engineer or Project Manager of any complaints received from the public regarding noise and vibration. Describe the action proposed and the schedule for implementation, and subsequently inform the City Inspector, City Engineer or Project Manager of the results of the action.

b. Monitor noise and vibration levels day and night and for each new activity or piece of equipment. Start by measuring three times a Day that work operations occur plus once a night for 3 consecutive Days that work operations occur. Monitor noise and vibration levels at least once a week thereafter.

H. Measurement Procedure:

1. Except where otherwise indicated, perform all noise measurements using the A-weight network and "slow" response of an instrument complying with the criteria for a Type 2 General Purpose sound level meter as described in ANSI S1.4.

   a. Measure impulsive or impact noises with an impulse sound level meter complying with the criteria of IEC 179 for impulse sound level meters. As an alternative procedure, a Type 2 General Purpose sound level meter on C-weighting and "fast" response may be used to estimate peak values of impulsive or impact noises. Transient meter indications of 125 dbC "fast" or higher will be considered as indications of impulsive noise levels of 140 dBA or greater.

   b. Measure noise levels at buildings affected acoustically by the Contractor's operations at points between 3 feet and 6 feet from the building face to minimize the effect of reflections.

   c. Measure noise levels at points on the outer boundaries of Construction Limits for noise emanating from within.

   d. Where more than one criterion of noise limits is applicable, use the more restrictive requirement for determining compliance.

I. Continuous Construction Noise: Prevent noise from stationary sources, parked mobile sources, or any source or combination of sources producing repetitive or long-term noise lasting more than a few hours from exceeding the following limits:

1. Maximum Allowable Continuous Noise Level, dBA:

Affected Residential Areas	Daytime	Nighttime
Single family residences	60	50
Arterials or in multi-family residential areas, including hospitals	65	55
Semi-residential/commercial areas, including hotels	70	60

Affected Commercial Areas	At All Times
Semi-residential/commercial areas, including schools	65
Commercial areas with no nighttime residency	70

Affected Industrial Areas	
All locations	80

J. Intermittent Construction Noise: Prevent noises from non-stationary mobile equipment operated by a driver or from any source of non-scheduled, intermittent, non-repetitive, short term noises not lasting more than a few hours from exceeding the following limits:

1. Maximum Allowable Intermittent Noise Level, dBA:

Affected Residential Areas	Daytime	Nighttime
Single family residences	75	60
Arterials or in multi-family residential areas, including hospitals	75	65
Semi-residential/commercial areas, including hotels	80	70

Affected Commercial Areas	At All Times
Semi-residential/commercial areas, including schools	80
Commercial areas with no nighttime residency	85

1.13 CHEMICALS

All chemicals used during project construction or furnished for project operation, whether defoliant, soil-sterilant, herbicide, pesticide, disinfectant, polymer, reactant or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.

1.14 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions in this section "**Temporary Controls**", including best management practices, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefor, unless specified otherwise.

END OF SECTION

SECTION 01 58 00 Project Identification Signage

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Contract Identification and Construction Signage

B. Mounting post, bolts and footing

C. Removal and backfill of post holes

1.02 DESCRIPTION OF WORK

A. The Contractor is responsible to furnish and erect one (1) professionally-made project information signs.

B. Sign location shall be at project site, not along project access route. Or at a location determined in the field and approved by the City's Project Landscape Architect or Project Manager adjacent to the construction site.

1.03 PROJECT INFORMATION CONSTRUCTION SIGN

A. Size: 4' H x 6' W.

B. Design, Layout, and Size: Design, layout, and size of lettering and colors shall conform to the details shown on the attached "Illustration of Sign Layout."

C. All text to be Century Gothic, black text on white background. Letters and wording to be spaced as indicated on the template.

D. City logo shall be Standard colors as provided in the template.

E. Border around the sign shall be a single line with no bevel.

F. Plan graphics of the improvements shall be placed in the upper left corner of the sign. City logo will be at top and centered with the project title directly below logo, and project description below title.

G. Sign material shall be .080 sheet aluminum, with 1" radius corners. Fastening hardware shall be commercial quality.

H. Sign to be mounted on minimum 4" wood posts embedded in the ground, with 6'-6" clearance beneath the bottom of the sign.

I. Any deviations shall be approved by the project manager prior to fabrication.

J. City will provide an AutoCAD template to the contractor or their sign shop. Refer to the end of this section for graphic example.

K. Excavate post holes, provide mounting fastener.

1.04 INSTALLATION AND MAINTENANCE

A. Installation: Sign mounting and sign parts shall be installed in accordance with Caltrans Standard Plans for Roadside Signs – Wood Post.

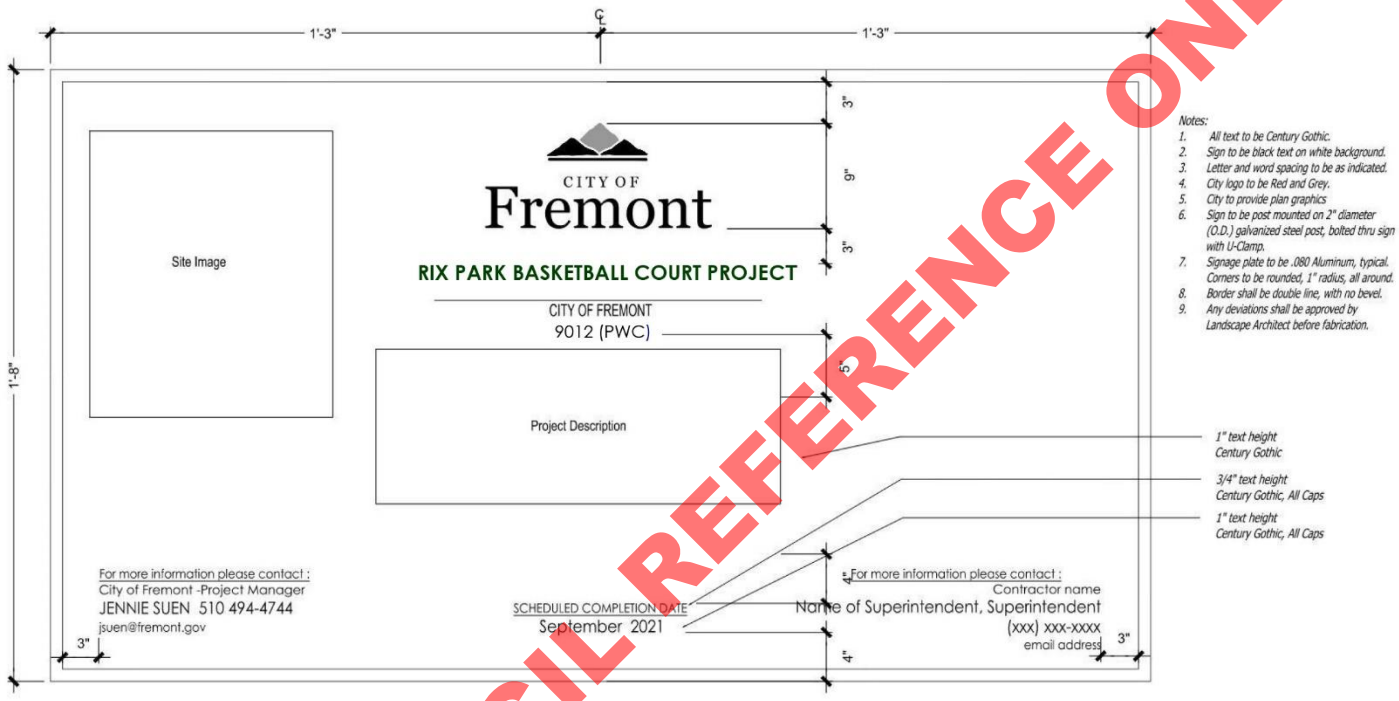
B. Maintenance: Keep signs clean and in good repair until Contract Completion.

1.05 SUBMITTALS

A. Refer to Contract Specifications Section 01 30 00, Submittal Procedures.

B. Submit Shop Drawings of Contract funding signs and field office signs including designs, layouts, sizes, and proposed locations within 15 Days of Notice to Proceed.

1.06 ILLUSTRATION OF SIGN LAYOUT



1.07 PROJECT DESCRIPTION LANGUAGE

Rix Park Basketball Court Project consists of demolition and removal of basketball court asphalt surfacing and subbase; demolition and removal of basketball standard with associated concrete footing; clearing and grubbing of existing sod area, installation on new asphalt basketball court with subbase, including striping and color installation; installation of basketball standards with footing; installation of 6" wide curb; modification to existing irrigation adjoining new court and old court; installation of various walkways, installation of topsoil and new sod at old basketball court location; and minor re-grading to accommodate the new court.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 CLOSEOUT

Upon completion of the Work, the signs will be removed and disposed of off City property, as determined by the Engineer.

3.02 MEASUREMENT AND PAYMENT

The contract each unit price paid for **"Project Identification Signage"** shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involved, complete in place, as shown on the plans, as required by these Special Provisions, and as directed by the City Engineer and no additional compensation will be allowed therefor.

END OF SECTION

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SECTION 01 60 00 Product Requirements

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Administrative and procedural requirements governing Contractor's selection of products for use in Project.

1.02 RELATED SECTIONS

A. Section 01 25 00 "Product Substitution Procedures"

B. Section 01 30 00 "Submittal Procedures"

1.03 DEFINITIONS

A. Definitions used in this Article are not intended to change meaning of other terms used in Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well-recognized meanings tin construction industry.

1. Products: Items purchased for incorporation in Work, whether purchased for Project or taken previously purchased stock. Term "product" includes terms "material," "equipment," "system," and terms of similar intent.

a. Names Products: Items identified by manufacturer's product name, including make or model number or other designation, shown or lists in manufacturer's published product literature, that is current as of date of Contract Documents.

2. Materials: Products substantially shaped, cut, worked, missed, finished, refined or otherwise fabricated, processed, or installed to form part of Work.

3. Equipment: Product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.04 SUBMITTALS

A. Product List: Prepare list showing products specified in tabular form acceptable to Construction Manager and Project Landscape Architect. Include generic names of products required. Include manufacturer's name and proprietary product names for each item listed.

1. Refer to Section 01 30 00 "Submittal Procedures"

1.05 QUALITY ASSURANCE

A. Source Limitations: To fullest extent possible, provide products of same kind from single source.

B. Compatibility of Options: When given option of selecting between two (2) or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on exterior.

1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.

2. Equipment Nameplates: Provide permanent nameplate on each item of service-connected or power-operated equipment. Locate on easily accessible surface that is inconspicuous in occupied spaces. Nameplate shall contain following information and other essential operating data:

   a. Name of product and manufacturer

   b. Model and serial number

   c. Capacity

   d. Speed

   e. Ratings

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products according to manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

1. Schedule delivery to minimize long-term storage at site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to site in undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products upon delivery to ensure compliance with Contract Documents and to ensure that products are undamaged and property protected.

5. Store products at site in manner that will facilitate inspection and measurement of quantity or counting of units.

6. Store heavy materials away from Project structure in manner that will not endanger supporting construction.

7. Store products subject to damage by elements above ground, under cover in weather-tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 PRODUCTS

2.01 PRODUCT SELECTION

A. General Product Requirements: Provide products that comply with Contract Documents, that are undamaged and, unless otherwise, indicated, new at time of installation.

1. Provide products complete with accessories, trim, finish, safety guards, and other devised and details needed for complete installation and intended use and effect.

2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

B. Product Selection Procedures: Contract Documents and governing regulations govern product selection. Procedures governing product selection include following:

1. Nonproprietary Specifications: When Specifications list products or manufacturers that are available and may be incorporated in Work, but do not restrict Contractor to use of these products only, Contractor may propose any available product that complies with Contract requirements. Comply with Section 01 25 00 to obtain approval for use of unnamed product.

2. Products Specified by Indicating Basis for Design: Design and approval is based on Systems, products, and assemblies of manufacturer indicated. Equivalent systems, products, and assemblies of other named manufacturers may be used; however, Contractor is responsible for additional approvals required, for coordination with remainder of Contract Documents, and for costs of redesign or recalculation required. Comply with Section 01 25 00 to obtain approval for use of unnamed product.

3. Descriptive Specification Requirements. Where Specifications describe product or assembly, listing exact characteristics required, with or without use of brand or trade name, provide product or assembly that provides characteristics and otherwise complies with Contract requirements.

4. Performance Specification Requirements. Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by manufacturer for application indicated.

   a. Manufacturer's recommendations may be contained in published product literature or by manufacturer's certification of performance.

5. Compliance with Standards, Codes, and Regulations: Where Specifications only require compliance with imposed code, standard, or regulation, select product that complies with standards, codes, or regulations specified.

6. Visual Matching: Where Specifications require matching established Sample, Project Landscape Architect's decision will be final on whether proposed product matches satisfactorily.

   a. Where no product available within specified category matches satisfactorily and complies with other specified requirements, comply with provisions of Section 01 25 00 "Product Substitution Procedures" for selection of matching product in another product category.

7. Visual Selection: Where specified product requirements include phase "as selected from manufacturer's standard colors, patterns, textures" or similar phase, select product and manufacturer that complies with other specified

requirements. City's Project Landscape Architect will select color, pattern, and texture from product line selected.

PART 3 EXECUTION

3.01 INSTALLATION OF PRODUCTS

A. Comply with manufacturer's instructions and recommendations for installation of products in applications indicated. Anchor each product securely in place accurately located and aligned and other Work.

1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

3.02 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions in this section "**Product Requirements**", not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

END OF SECTION 01 60 00

SECTION 01 71 13 Mobilization and Temporary Facilities

PART 1 GENERAL

1.01 RELATED SECTIONS

A. General Conditions, Article 7.2 (E)

B. Section 01 55 00 “Site Access and Storage”

C. Section 01 56 26 “Temporary Construction Fencing”

D. Section 02 41 00 “Site Demolition”

E. Caltrans Standard Specifications, 2018

1.02 DESCRIPTION

Work includes:

A. Mobilization, temporary facilities and controls required for this work, at all sites include, but are not limited to: staging areas; temporary utilities such as water, electricity and telephone; haul roads; enclosures such as tarpaulins, barricades, and canopies; sanitary facilities; scaffolding and safety equipment, and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site. All such temporary facilities for all sites shall be located for convenience and safety and maintained in a safe and sanitary condition at all times until completion of the Contract, then removed from the site and disposed of as required or as directed.

B. Mobilization will include mobilization of all construction equipment, materials, supplies, appurtenances, facilities, and the like, staffed and ready for commencing and prosecuting the Work; and the subsequent demobilization and removal from the Worksite of said equipment, appurtenances, facilities, and the like upon completion of the Work.

C. Mobilization will also include assembly and delivery to the Worksite of equipment, tools, materials, and supplies necessary for the prosecution of work which are not intended to be incorporated in the Work; the clearing of and preparation of the Contractor's staging area; the complete assembly, in working order, of equipment necessary to perform the required Work; personnel services preparatory to commencing actual Work; and all other preparatory work required to permit commencement of the actual work on construction items for which payment is provided under the Contract.

1.03 COMPLIANCE WITH CODES AND REGULATIONS

Compliance with all requirements of pertinent safety regulations is described in the General Conditions of the Contract for Construction and shall include, but not necessarily be limited to: Federal Occupational Health Administration (OSHA) and latest edition, Uniform Building Code (with California Amendments) and ADA (American Disability Act).

1.04 PRODUCT HANDLING

Use all means necessary to maintain all temporary facilities and controls in proper and safe condition throughout progress of the work. In the event of damage or loss, immediately make all repairs and replacements necessary and at no additional cost to the Owner.

1.05 SUBMITTALS

General Arrangement and Layout Drawings showing arrangement of all temporary facilities including all offices, parking, material storage warehouses, shops, material laydown, staging and storage areas, fences, and roads, within 30 Days of Notice to Proceed.

1.06 GOVERNING LAWS

Temporary facilities shall be in compliance with applicable federal, State, county, municipal, and local utility laws, rules, and regulations. Nothing in these Contract Documents shall be construed to permit work not conforming to such codes and regulations.

1.07 TOOLS AND SUPPLIES

Provide engineering equipment and facilities, construction tools, equipment, materials, and supplies of the types and quantities necessary to facilitate the timely execution of the work.

1.08 DEMOBILIZATION

A. Upon completion of the Work, remove construction tools, apparatus, equipment mobile units and buildings, unused materials and supplies, and personnel from the Worksite.

B. Restore all areas utilized for mobilization to their original, natural state or, when called for in the Contract Documents, complete such areas indicated.

PART 2 PRODUCTS

2.01 TEMPORARY UTILITIES

A. The Contractor shall notify all Utility Companies of their Work. Notice will give sufficient time for inspection and disconnect of the utilities by the said Utility Companies.

B. The Contractor shall pay all charges of gas, electric, and telephone utilities for temporary connections, disconnections and service to the work.

C. Provide safe distribution of required utilities to the job areas for use of all trades.

D. The Contractor shall pay all charges of water, sewage and drainage for temporary services and connection/disconnection charges to the work. The City will pay for all permanent service charges for electrical, water, sewer and storm drainage.

2.02 TEMPORARY WATER

A. Provide, maintain and pay for suitable quality water service required for construction operations.

B. The Contractor shall not make connection to, or take water from, any fire hydrant or pipeline without first obtaining permission from Alameda County Water District (ACWD) or other authority having jurisdiction over the use of said fire hydrant or pipeline and from and from the Fremont Fire Department (FFD). For each such connection made, the Contractor shall first attach to the fire hydrant or pipeline a valve and a construction meter supplied by ACWD or said other authority or agency.

C. Furnish and install all necessary temporary piping and, upon completion of the work, remove all such temporary piping.

D. If necessary, extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing, if necessary.

E. Removal of Water Connections: Before final acceptance of the Work on the project, all temporary connections and piping installed by the Contractor shall be entirely removed, and all affected improvements shall be restored to their original condition, or better, to the satisfaction of the Engineer, the City, and/or other agency owning the affected utility.

2.03 TEMPORARY ELECTRICITY

A. Power: The Contractor shall provide all necessary temporary power required for its operations under the Contract, and shall provide and maintain all temporary power lines required to perform the Work in a safe and satisfactory manner. Contact PG&E Senior Electrical Estimator, Ariel Maldonado, 510-683-3084 to submit a temporary power application and obtain temporary power, if required for the Contractor's operations.

B. Lighting: All work conducted at night or under conditions of deficient daylight shall be suitably lighted to insure proper Work and to afford adequate facilities for inspection and safe working conditions.

C. Approval of Electrical Connections: All temporary connections for electricity shall be subject to approval of the City, the Engineer and the power company representative, and shall be removed in like manner at the Contractor's expense prior to final acceptance of the Work by the City.

D. Wiring: All wiring for temporary electric light and power shall be properly installed and maintained and shall be securely fastened in place. All electrical facilities shall conform to the requirements of CCR: Title 8, Industrial Relations, Subchapter 5, Electrical Safety Orders, and Subpart K of OSHA Safety and Health Standards for Construction.

E. Removal of Electrical Connections: Before final acceptance of the Work on the project, all temporary connections and piping installed by the Contractor shall be entirely removed, and all affected improvements shall be restored to their original condition, or better, to the satisfaction of the Engineer, the City, and/or other agency owning the affected utility.

2.04 TEMPORARY TELEPHONE

Contractor is responsible for providing site telephone and fax as required. Existing telephones at the project site is not available for use. Maintain in the Contractor's field

office or in a protected location on the job site for the use of the subcontractors. Superintendent may opt for a cellular phone.

2.05 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Existing facilities are not available for Contractor's use.

B. Provide adequate fixed or portable chemical toilet conveniences whenever needed for the use of employees, including, washing facilities, and drinking water for the use of all employees and persons engaged on or about the Work, including Subcontractors and their employees. Drinking water shall be potable, and drinking water facilities shall be clean and sanitary.

C. Minimum dimensional requirements: Height 90"; Width 67"; Depth 86.5"; seat height: 19"; capacity 68 gallons.

D. Locate sanitary facilities where approved by City staff. To be determined in the field prior to construction and delivery

E. Maintain in a clean and sanitary condition during the course of the Work. Keep such facilities adequately supplied with toilet paper, paper toweling, paper cups, and related supplies as required. At minimum, provide a weekly service schedule for cleaning and servicing.

F. Sanitary and Other Organic Wastes: The Contractor shall establish a regular collection of all sanitary and organic wastes. All refuse from sanitary facilities provided by the Contractor or organic material wastes from any other source related to the Contractor's operations shall be disposed of away from the site in a manner satisfactory to the Engineer and in accordance with all laws and regulations pertaining thereto.

G. At completion of the Work, sanitary facilities shall be properly disinfected and all evidence of same removed from the Jobsite.

H. Comply with all minimum requirements of the Health Department or other public agency having jurisdiction. Maintain in a sanitary condition at all time – secure toilets in non-work hours from vandalism.

2.06 STAGING AREAS, STORAGE AND PARKING AREAS

A. The Contractor may utilize the existing street parking for parking of construction equipment, staging and storing materials. Parking of vehicles by construction personnel shall be limited to areas along street outside the limits-of-work.

B. These areas will be provided to the Contractor for the durations indicated in the Contract Specifications.

C. The Contractor shall provide a plan outlining the area required for staging and provide temporary construction fencing to secure and protect proposed area. The Contractor shall be fully responsible for the safety and security of their materials and equipment staged and stored in this area.

D. The Contractor shall provide parking facilities for the Contractor's personnel, Subcontractors, Supplier's delivery vehicles, and authorized visitors. Off the Jobsite

parking facilities (if any) shall not impair or interfere with existing community parking and traffic conditions, regulations, and restrictions.

E. Storage areas, construction parking, staging and construction yards shall be illuminated at a level at least 0.25 to 0.50 foot-candles average.

F. No parking or vehicle storage will be permitted in environmentally sensitive areas.

G. The Contract Drawings may indicate work areas available to the Contractor for storage of materials and for parking of construction equipment. If so indicated, these areas will be provided to the Contractor for the durations indicated in the Contract Specifications. Additional work and storage space, if required, shall be provided by the Contractor at Contractor's expense.

2.07 ENCLOSED STORAGE AND SHOPS

A. The Contractor shall provide all temporary storage and shop rooms that may be required at the Jobsite for safe and proper storage of tools, materials, and equipment. Construct such rooms only in locations indicated or as approved by the Supervising Construction Coordinator, and so as not to interfere with the proper installation and completion of other work.

B. Remove such rooms within 3 Days of receipt of notices from the Supervising Construction Coordinator that removal is necessary, and incur all expenses for such removal.

C. Storage of gasoline or similar fuels shall conform to National Fire Protection Association (NFPA) regulations and local fire department regulations and shall be confined within definite boundaries apart from buildings as approved by the Supervising Construction Coordinator and the jurisdictional fire marshal.

2.08 PROTECTIVE BARRICADES AND SAFETY PRECAUTIONS

A. Construct and maintain barricades, lights, shoring, and warning signs as required by federal and State safety ordinances and as required to protect the City's property from damage or loss and as necessary for the protection of the public and adjacent properties. Provide walks around obstructions made in a public place for prosecuting the Work. Leave all protection in place and maintain until removal is authorized.

B. Guard and protect all workers, pedestrians, and the public from excavations, construction equipment, obstructions, and other dangers with adequate railings, guard rails, temporary walks, barricades, warning signs, directional signs, overhead protection, planking, decking, danger lights, and other suitable safeguards.

C. Flaggers shall be provided to direct or divert pedestrian or vehicular traffic when necessary.

2.09 PUMPING

Keep the site, excavations, and structures free of accumulation of water at all times, whether from underground seepage, rainfall, drainage, or broken utility lines at no expense to the Owner.

2.11 FIRE PROTECTION

Temporary fire extinguishers shall be provided and available at the job site in accordance with the appropriate NFPA Bulletins and good practice.

2.12 BARRIERS, ENCLOSURES AND TEMPORARY CONSTRUCTION FENCING

A. See “Temporary Construction Fencing” found herein Section 01 56 26.

B. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and properties from damage from construction operations and demolition in accordance with OSHA and governing authorities having jurisdiction.

2.13 TEMPORARY ACCESS FACILITIES

A. The Contractor shall construct, maintain, and later remove temporary access bridges, driveways, roadways, and other items needed for Contractor access to and within the Jobsite.

B. Contractor shall be responsible for any damage to streets, curbs and sidewalks due to the use of such facilities, and such damaged portions shall be repaired as required to place them in the same condition as existed prior to the commencement of the work.

C. Extend and relocate access and parking space usage as Work progress requires. Provide and maintain access to fire hydrants, free of obstructions. Provide means of removing mud from vehicle wheels before entering streets.

D. Contractors shall comply in every respect with applicable Building Codes regarding the use of public streets and sidewalks and provide the proper barricading and lighting of public thoroughfares surrounding the construction activities.

E. Arrange for temporary parking areas on-site for construction personnel.

F. Parking of vehicles by construction personnel shall be limited to areas within the existing parking lot outside the limits-of-work, as designated by the Project Landscape Architect, or on the plans.

G. Use all means necessary to maintain all temporary facilities and controls in proper and safe condition throughout progress of the work. In the event of damage or loss, immediately make all repairs and replacements necessary and at no additional cost to the City.

H. All areas affected by Contractor-constructed temporary facilities shall be restored to their original condition upon removal of the temporary facilities.

2.14 TEMPORARY PARKING AREAS

A. Extend and relocate access and parking space usage as Work progress requires.

B. Provide and maintain access to fire hydrants, free of obstructions.

C. Provide means of removing mud from vehicle wheels before entering streets.

D. Coordinate and arrange for temporary parking areas on-site to accommodate construction personnel within the existing parking lot outside the limits-of-work, as designated by the Project Landscape Architect, or on the plans.

2.15 PROTECTION OF INSTALLED WORK

A. All work installed, completed and accepted per the direction herein to phase construction, shall be protected from damage by other phases of construction work.

B. Contractor shall control activity in immediate work area to prevent damage.

C. Provide temporary and removable protection for installed Products, as needed.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

2.16 SECURITY

A. The Contractor shall provide for security of the Work and the Jobsite until final inspection and Acceptance of the Work. Storage areas shall be suitably fenced and lighted.

B. The City assumes no responsibility for protection of structures and finished work or for loss of materials and equipment from the time that Contract operations have commenced until Acceptance of the Work.

C. If watchman/security service is deemed necessary by the Contractor, such protection shall be provided by the Contractor, and all costs therefore shall be paid for by the Contractor.

D. Damaged, lost, or stolen materials and equipment, whether or not stored or already installed, shall be replaced by the Contractor with new specified materials and equipment, including reinstallation where applicable, at no additional cost to the District.

2.16 PROGRESS CLEANING AND WASTE REMOVAL

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish on a daily basis.

C. Collect and remove waste materials, debris, and rubbish from site as Section 01 74 19 “Construction and Demolition Debris Management”.

2.17 POSTING OF REGULATIONS

Comply with industry standards and applicable laws and regulations of authorities having jurisdiction in the posting of regulations.

PART 3 EXECUTION

3.01 SPECIAL CONDITIONS OF THE SITE

A. The area to be set aside for the use of the Contractor is indicated on the Drawings as "Limit of Work" and “Staging Area”. The Contractor shall confine his operations within the limits-of-work so indicated.

B. Work shall not proceed for the site until all temporary work such as utilities, barricades, and sanitary facilities are furnished and installed.

3.02 MATERIAL STORAGE AND PROTECTION

A. During the progress of the work, products and materials shall be neatly stored in accordance with the appropriate manufacturer's recommendations and shall be properly cared for and protected from weather, vandalism and theft.

B. All installed products and materials shall be adequately protected until such time as the Owner accepts the Project.

3.03 CONDITIONS AT THE SITE

A. The Contractor shall make all necessary inspections of the job site and of the work to be fully aware of the conditions of all temporary facilities and controls at all times.

B. The Contractor shall take all steps necessary to prohibit any part of the premises, the buildings, or structures to be overloaded by setting thereon any material or equipment, or performing thereon any of his work, which could cause any loss, damage, and/or injury to person or property.

C. The Contractor shall make a close inspection of all materials as delivered and shall promptly return all defective materials without waiting for their rejection by the Project Landscape Architect.

3.04 REMOVAL

Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the work. Remove all such temporary facilities and controls as rapidly as progress of the work will permit.

3.06 FINAL SITE CLEAN-UP

Prior to final inspection, thoroughly clean the entire site and restore to a neat, acceptable condition. Remove from the entire site all construction waste and unused materials, dunnage, loose rock and stones, excess earth, roots, weeds, and all debris of any description resulting from the work. Hose down and scrub where necessary all new concrete and asphalt pavement and paved walks, and all existing concrete and asphalt pavement and walks dirtied as a result of the work. Thoroughly remove mortar drippings from concrete walks and other pavements, where they occur – do not power spray concrete decks with high pressure.

3.07 CLOSEOUT

A. Upon completion of the Work, or prior thereto when required by the Supervising Construction Coordinator, remove temporary facilities' structures and installations from the District's property.

B. Return exterior areas utilized for temporary facilities to their original, natural state or, when called for on the Contract Documents, complete such areas as indicated.

3.08 MEASUREMENT AND PAYMENT

The lump sum price paid for **"Mobilization and Temporary Facilities"** shall include full compensation for furnishing all labor, materials, tools, equipment, incidentals, including temporary utilities or facilities, temporary sanitary facilities, and controls for all sites as described herein, and for doing all the work covered in this section, complete and in place as shown on the plans, as required by the Special Provisions, and as required by the

Project City Project Manager or Project Landscape Architect.

END OF SECTION

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SECTION 01 72 40 Conformance Surveying

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. Conformance Surveying work shall be completed by a Licensed Surveyor and be based on established site bench marks, monuments, lines, and levels necessary for the work covered by this Contract.

B. The City of Fremont will provide initial control, bench marks, monument and alignment lines, and cut and fill staking as the beginning of the project, one time. Control, bench mark and staking destroyed by the contractor will be the responsibility of the Contractor to replace. Conformance surveying shall be done at the contractor's expense to confirm the as-built conditions built by the contractor from staking and surveying initially laid out by the City of Fremont.

C. Scope of work:

1. Providing conformance surveying required for proper completion of the work at the following stages:

a. After spreading and rough grading of on-site material and import of clean engineered fill to establish paving sections.

b. Finished grade of all landscape and planting areas.

c. Finished surface of all paving (concrete and asphalt).

d. Other applicable project components.

1.02 REFERENCES AND STANDARDS

A. Perform work in accordance with all applicable laws, codes, and regulations required by the City of Fremont, County of Alameda, State of California.

B. Reference to "Standard Specification" shall mean the current Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation, Caltrans.

C. California Code of Regulations, Title 24, current edition, also known as the California Building Code (CBC).

1.03 RELATED DOCUMENTS

A. These special provisions are part of the plans and shall include all labor, materials, equipment, reasonable incidentals, and services necessary to the execution of the work.

B. Refer to all other sections, determine the extent and character of related work, and coordinate all work to produce a complete, properly constructed product.

Related Sections

1. Section 01 30 00 "Submittals"
2. Section 03 30 00 "Cast In Place Concrete"
3. Section 31 20 00 "Rough Grading"
4. Section 31 22 19 "Finish/Fine Grading"
5. Section 32 11 23 "Aggregate Base Course"
6. Section 32 12 16 "Asphalt Paving and Surfacing"

1.04 SUBMITTALS

A. Contractor will be required to submit three (3) hard copies and one (1) electronic copy (in AutoCAD or scaled PDF image) of all conformance surveys for the project. The Contractor shall ensure that all survey data is completed with the supervision of a licensed surveyor. The City Representative shall provide a written response within five (5) working days of receipt of said drawings and identify any areas out of tolerance.

1.05 QUALITY CONTROL AND REWORK

A. Any portion of the survey that does not conform to the grading tolerance requirements identified in this specification section will be corrected by the Contractor. Areas out of conformance will be resurveyed at the Contractor's sole expense (following the identical procedure stated above) by the Surveyor, and these revised points shall be added to the original digital file for resubmittal, review and acceptance by the City Representative.

B. All delays and costs incurred due to grades out of conformance are the sole responsibility of the Contractor. At any point during construction following acceptance of any portion of the survey by the City, the City reserves the right to recheck the surface grades (at no cost to the Contractor) to verify it is still in conformance. It is the Contractor's responsibility to protect the grading and compaction tolerances of the surveyed surface after conformance surveying operations are complete and accepted, and prior to installation of any subsequent materials. Any work identified by the survey that is outside of the acceptable tolerances shall be corrected by the Contractor at its sole expense.

PART 2 MATERIALS

Not used.

PART 3 EXECUTION

3.01 LAYING OUT THE WORK

A. Contractor shall employ a Registered Civil Engineer or Licensed Land Surveyor (hereafter referred to as Surveyor) to perform any conformance surveying work required by the Contractor.

B. Prior to beginning work, Contractor shall secure the electronic grading plan from the City for use by the Surveyor. The surveyor shall provide all conformance survey drawings. The drawings shall provide both the design elevations and the as-constructed spot elevations. These elevations shall be for comparison to those on the contract documents for the same location. Contractor shall also show the difference in these two numbers. In addition, unique reference numbers shall be assigned to each point for reference purposes. For spacing requirements, refer to specific type of improvement identified in this specification section.

C. Accuracy of all surveys provided in this section shall be to 0.01 feet.

3.02 SUBGRADE, FINISHED GRADE AND FINISHED SURFACE CONFORMANCE SURVEYING

A. Top of subgrade elevations shall be verified using laser-operation survey instruments. Grades at each point must be within ½ -inch plus or minus from the elevations shown on the plans. In addition, no two adjacent points within the grid shall cumulatively deviate more than ¾-inch (0.06 feet) from the respective points' design grades. Contractor shall not install the stone base without written approval by the Supervising Construction Coordinator, City Inspector or Project Landscape Architect to proceed.

B. After the completion of the existing or import material to establish finished grade of the landscape and planting areas, an additional conformance survey shall be completed to verify finished grade.

C. Upon completion of all fine grading operations, and paving sections throughout the project site, a final conformance survey shall be completed to verify all finished grade elevations and finished surface elevations.

D. The Contractor will be responsible to provide certified conformance surveys prepared by a Licensed Surveyor.

E. Surveys shall be based on a 25 foot grid showing the subgrade elevations of the rough graded stockpiled materials, finished grade elevations for all landscape and planting areas, and finished surface elevations for all paving surfaces, top of curb elevations, poured in place surfacing, apron, rim and invert elevations of areas drains and field inlets, and other finished surfaces.

F. The final conformance survey plan shall show the comparison of the design grades versus the as-constructed grades.

G. Finish surface and finished grade planarity shall be verified, and if necessary adjusted, by the Contractor using string line method. A mason's line held taught between two workman separated by a distance of approximately 40 feet, shall be placed directly on the finished surface, parallel to the direction of greatest slope. A third workman shall check for separations between the mason's line and the finished surface that are equal to or greater than the specified tolerances. Areas of separation shall be outlined with marking paint and the depth of separation indicated.

3.03 MEASUREMENT AND PAYMENT

A. The price paid for Conformance Surveying shall be included in the contract unit price paid for "Rough Grading (F)" and no separate payment will be made therefor.

END OF SECTION

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SECTION 01 74 19 Construction and Demolition Debris Management

PART 1 GENERAL

1.01 SUMMARY

A. This section specifies requirements for managing construction and demolition debris, diverting debris from the landfill and accepted hauling practices.

B. Related requirements specified elsewhere include, but are not limited to:

1. Fremont Municipal Code
2. California Building Standards Code, most current version (including CalGreen)
3. Alameda County Waste Management Authority Ordinance 2008-01

1.02 PERFORMANCE REQUIREMENT

A. Performance Requirement: The performance requirement for this project is to divert:
- 100% of the asphalt and concrete through reuse or recycling
- 100% of plant debris to be composted or used as mulch
- 65% of remaining construction and demolition debris to be reused or recycled

B. The Performance Requirement shall be satisfied by providing all of the following:

1. An approved Waste Handling Plan within 10 days of Notice to Proceed
2. Two Debris Diversion & Disposal Reports that include:
   - receipts, weigh tags or other acceptable documentation from approved recycling facilities that clearly indicate the performance requirement was met
   - the City of origin listed as Fremont
   - the type and weight of material reused or recycled
   - the weight of material landfilled (garbage).

1.03 DEFINITIONS

A. **"Approved Recycling Facility"** means an off-site facility that provides processing of material for recycling, composting or other diversion from landfill and is approved by the City of Fremont. See the attached list for the facilities that are approved. Only these approved facilities may be used.

B. "**Construction and Demolition Debris**" shall mean material generated as a result of construction, repair or demolition on pavement, houses, commercial buildings and other structures, as well as construction job sites, including discarded packaging, containers and waste construction materials. Materials may include a mixture of municipal solid waste and recyclable materials, such as, brick, concrete, scrap wood, scrap metal, sheet rock, cardboard, packaging and rubble.

C. "**Divert**" includes reuse and recycling, and to use material for any purpose other than disposal in a landfill or transformation.

D. "**Generator**" means an owner or responsible party (including employees and contractors of generators) of a residential dwelling, business, commercial or residential facility, and construction site, which generates municipal solid waste, organics and recyclable materials as a result of its business, facility or property activity, including construction sites.

E. "**Hauler**" means any person or entity that transports municipal solid waste, recyclables, organics or other discarded materials.

F. "**Municipal Solid Waste**" means all putrescible and non-putrescible solid, semisolid and liquid wastes, including garbage, trash, refuse, rubbish, ashes, industrial waste, and other discarded wastes, including residue from recycling, composting and other similar processes.

G. "**Recyclable Materials**" mean materials which may be returned to the economic mainstream as commodities for reuse, or for processing to create new or reconstituted products, which if not segregated from municipal solid waste would otherwise become municipal solid waste. Recyclable materials include single commodity construction and demolition debris.

H. "**Self-Haul**" means generators who transport their own materials by using a vehicle owned by the generator and driven by the generator or their employee, rather than using the hauling services of the City's franchise hauler or a third party hauling company.

I. "**Single Commodity Construction and Demolition Debris**" means soil, asphalt and concrete resulting from construction, remodeling, repair or demolition on pavement, houses, commercial buildings, multi-family dwellings and other structures, including construction job sites and that is source separated from each other and other materials, and contains less than 10% garbage or municipal solid waste. Any hauler who pays their business tax may haul soil, asphalt, and concrete in a debris box.

1.04 SUBMITTALS

A. The Contractor is required to submit a schedule that will describe all construction, demolition and removal procedures, sequence of activities, and schedule of activities. The schedule must be submitted within 10 calendar days after receipt of the Notice to Proceed, prior to any demolition or construction activities, and must be approved by the Project Manager.

B. The Contractor is required to submit a Waste Handling Plan to indicate how materials will be diverted from landfill and which facility will be used. The Waste Handling Plan must be submitted within 10 calendar days after receipt of Notice to Proceed and must be approved prior to any demolition or construction activities. Submit this form to: City Project Manager (See Notice to Bidders for contact information).

C. The Contractor is required to submit a completed Debris Diversion & Disposal Report including receipts, weigh tags or other acceptable documentation at 50 percent completion of the Work. The report should be submitted within 30 calendar days of 50% completion of the Work.

D. The Contractor is required to submit a completed Debris Diversion & Disposal Report including receipts, weigh tags or other acceptable documentation at 100 percent completion of the Work. The report should be submitted within 30 calendar days of the completion of the Work. Final payment will not be issued until the documentation is approved or outstanding fines resolved.

E. Contractors who choose to self-haul construction debris instead of using a Republic Services debris box will be required to submit monthly Debris Diversion & Disposal Reports and deliver the material to approved facilities.

1.05 QUALITY ASSURANCE

A. A City of Fremont Business tax (license) is required of all hired persons working in Fremont, including all contractors, subcontractors, and vendors.

B. Republic Services is the only hauler authorized to haul construction and demolition debris

from Fremont. The contractor must subscribe to debris box service with Republic Services for all construction and demolition debris materials, except soil, asphalt and concrete.

C. Alternately, the contractor may self-haul the construction and demolition debris, using their own employees,
equipment and vehicles, to an approved recycling facility on the attached list, as long as the debris hauling is an incidental part of construction or demolition services provided by the contractor.

D. Soil, asphalt and concrete resulting from construction, remodeling, repair or demolition on pavement, houses, commercial buildings, multi-family dwellings and other structures, including construction job sites should be source separated from each other and other materials. Any hauler who pays their business tax may haul soil, asphalt, and concrete in a debris box.

1.06 WASTE HANDLING PLAN DEVELOPMENT and IMPLEMENTATION

A. The Waste Handling Plan is an estimate of the amount and type of debris that will be generated from the project. It is important to create a Waste Handling Plan prior to starting the project to identify costs, potential savings and ensure proper recycling of the materials needed to achieve the diversion requirement. Estimate the amount and type of debris generated from the project, and then develop a plan for diverting the required percentage of construction and demolition debris from the landfill.

1. Identify each type of debris item generated during the project (wood, scrap metal, etc.). Propose means and methods for collecting and separating each type of debris deemed reusable or recyclable. *Recommended Handling and Storage Procedures* with suggested actions for salvage or recycling of each type of demolition and construction debris are provided at the end of this section.

2. Estimate the weight or volume, by number of tons or cubic yards (CY), of each item that will be reused, recycled, or disposed in a landfill. Enter this number in the appropriate columns. If the materials are to be reused on site, list that in Reuse column: i.e., "wood waste chipped on site for mulch."

3. Include an estimate of each type of construction debris generated by the project. Items subject to the estimate and diversion requirement include:

a. Asphalt & Concrete
b. Brick/Masonry/Tiles
c. Building Materials (doors, windows, fixtures, etc.)
d. Cardboard
e. Carpet/Padding/Foam
f. Ceiling Tiles (acoustic)
g. Dirt/Soil/Clean Fill
h. Drywall/Sheetrock
i. Electrical Components (light fixtures, cables, etc.)
j. Landscape Debris (Plant & Tree Trimmings)
k. Metal
l. Mixed C&D (3+ materials in one load that will be taken to an approved facility for recycling)
m. Mechanical Debris (ducts, plumbing fixtures, etc.)
n. Plastic
o. Trash/Garbage
p. Universal waste (thermostats, batteries, fluorescent tubes, etc.)

q. Wood and Pallets

4. All the asphalt/concrete must be reused or recycled. All plant debris must be separated from other materials and composted or used for mulch and delivered only to facilities approved by the city of Fremont. 65% of the remaining debris must be reused or recycled to comply with the CalGreen Building Code. Asphalt, concrete and plant debris do not count toward meeting the 65% diversion requirement.

5. List the name of an approved recycling facility for each type of debris. Contact the facility and verify that they can accept that debris item in the proposed quantities anticipated. Schedule each debris item and list the recycling service and recycling company name, telephone number, address, and person contacted.

B. Implementation

1. Maintain a log of each load, of each debris category item diverted from landfill and materials sent to recycling facilities. Maintain the receipts and weigh tags from all disposal and recycling activities.

   a. Include the following information in the log: type of load, load weight, name of recycling service or facility, and date accepted by recycling service or by facility.
   b. The Project Manager reserves the right to audit the log at any time. Contractor shall retain and provide to Project Manager all weight tickets, copies of receipts, invoices, and any other documentation related to the recycling or disposal of debris generated by the job.
   c. Units of measure: Use same units as stated in the approved plan "good faith" estimate of construction or demolition debris (tons or cubic yards).

2. Designate specific on-site area(s) to facilitate separation of materials for potential reuse, salvage, and recycling. Do not mix garbage with materials designated for reuse, recycling or composting. Loads designated for recycling may not contain more than 10% garbage by weight or volume.

   a. Keep garbage bins and pile areas neat and clean. Signage is required to clearly mark bins for each category of debris.
   b. When ordering a debris box, be sure to specify that the materials are from a construction site and must be recycled, not landfilled. Inform the debris box vendor that you will require documentation that clearly states the city of origin as Fremont, and identifies the type and weight of material reused or recycled.
   c. Landscape/plant debris: Separate plant and tree debris from other materials. The landscape debris must be composted, used for mulch or biofuel. Alameda County ordinance requires that plant and tree debris is composted. Landscape debris shall not be taken out of Alameda County, except to the approved facilities below.

3. Training and Coordination

   a. Provide on-site instruction of appropriate salvage, reuse, separation, handling, and recycling methods to be used by all entities at the appropriate stages of the Project.
   b. Provide copies of the Waste Handling Plan to all on-site supervisors, each subcontractor, and the Project Manager.
   c. Include construction debris management on the agenda of meetings. At a minimum, discuss mandatory recycling requirements and debris management issues at the following meetings:

      1) Pre-demolition/pre-construction meeting

2) Regularly scheduled job-site meetings

PART 2 – MATERIALS, EQUIPMENT AND FACILITIES

2.01 MATERIALS

A. Furnish all materials, tools, equipment, devices, appurtenances, and services required for performing the salvage, demolition, and construction. Dispose of debris in a safe, acceptable manner, at approved facilities. Burying of trash and debris on the site is not permitted.

1. Republic Services is the only approved debris box hauler for materials in Fremont (except for separated loads of concrete, asphalt or soil). It is illegal to subcontract with a third party to haul garbage or other construction debris.
2. Alternately, the contractor may self-haul construction and demolition debris to an approved recycling facility, with some restrictions. Debris removal must be provided incidentally to construction or demolition services provided by the contractor. Contractors can self-haul construction debris off site, if all these conditions are met:
   - Contractor is providing a construction or demolition service on site and the debris removal is an incidental part of the work performed; and
   - Contractors use their own employees, company vehicles and equipment; and
   - Contractors deliver the construction debris to an approved facility (see list of approved facilities)
   - A City of Fremont Business tax (license) is required of all hired persons working in Fremont, including all contractors, subcontractors, and vendors.
3. The following facilities are the only facilities approved to accept construction and demolition debris for recycling:

Name of Facility	Address	Phone
Fremont Recycling &Transfer Station	41149 Boyce Road, Fremont	(510) 252-0500
Newby Island Landfill	1601 Dixon Landing Road, Milpitas	(408) 432-1234
Zanker Material Processing Facility	675 Los Esteros Road, San Jose	(408) 263-2384
Davis Street Recycling and Transfer Station	2615 Davis Street, San Leandro	(510) 563-4257
Berkeley Transfer Station	1201 2nd St, Berkeley	(510) 981-7270
Vasco Road Landfill	4001 N. Vasco Rd, Livermore	(925) 447-0491
Guadalupe Landfill	15999 Guadalupe Mines Road, San Jose	(408) 268-1670

4. Approved services for specific construction debris types:

PART 3 – EXECUTION

Type of Material	*Approved Hauling Options*
All Garbage and Construction / Demolition debris	• Republic Services debris box or • Contractor self-haul to approved facility in list
Source separated recyclable material (wood, plant debris/green waste, sheetrock)	• Republic Services debris box or • Contractor self-haul to approved facility in list
Source separated recycling commodity (metal, cardboard)	• Republic Services debris box or • Contractor self-haul to approved facility or • Any approved debris box from metal recycler (Schnitzer Steel, Sims Metals etc.)
Source separated inerts (concrete, asphalt, soil)	• Republic Services debris box or • Contractor self-haul to approved facility/quarry or • Any approved debris box from inert recycler (Vulcan Materials, etc.)
The following materials cannot be collected in Republic Services debris box containers: asbestos, batteries and other universal waste, hazardous waste, liquids, paint, oils, medical waste, tires, televisions, monitors and appliances containing chlorofluorocarbons(CFCs)	

3.01 GENERAL

A. Conduct construction and demolition to minimize interference with adjacent building areas.

B. Conduct operations with minimum interference to public or private access.

C. Maintain protected egress and access at all times.

D. Perform demolition work in accordance with ANSI A10.6 and the accepted demolition plan or program.

E. Remove items indicated for demolition within the limits of the work, and as required to complete the work of this contract. Do not remove anything beyond the limits of work indicated without prior written approval by the Project Manager. If in doubt whether to remove an item, obtain written approval by the Project Manager prior to proceeding.

F. Remove materials from site as work progresses, but at least once per week. Remove debris from the site so that the debris accumulation will not delay the progress of the work. Debris shall be containerized at all times. Debris shall be the property and responsibility of the Contractor, unless otherwise specified and shall be removed and disposed of in a legal manner off the City's property.

3.02 MEASUREMENT AND PAYMENT

A. Full compensation for conforming to the provisions in this section "Construction and Demolition Debris Management", not otherwise provided for, shall be considered included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefor, unless specified otherwise.

CITY OF Fremont

Waste Hand Waste Handling Plan - Form 1

(Pre-Demolition/Pre-Construction)

Permit BLD/PWC # _____ Project Name: _____

Project Address: _____ Date: _____

Contractor: _____ Contact: _____

Phone: _____ Email: _____

To complete the form:

Place an **"X"** in the box next to each type of material that will be generated from the project

- For materials that will go in a **debris box**, place the **X** in that column
- For materials that the **contractor will self-haul** using their own equipment and vehicles, place the **X** in that column
- For materials that the contractor will self-haul, provide the name of an approved recycling facility where the materials will be delivered. Approved facilities are listed in this Section.
- Return form to Project Manager within 10 days of the Notice to Proceed

Material	Republic Services Debris Box	Other Debris Box	Self-Haul by Contractor	Name of Recycling Facility
Asphalt / Concrete / Soil				
Plant or Tree Debris – (100% compost				
Cardboard				
Metal				
Mixed Construction & Demolition debris (ie, wood, metal, drywall, plastic)				
Wood – unpainted/pallets				
Garbage				
Universal Waste (thermostats, batteries)				
Other:				

Recycling requirements:

- **RECYCLE 100% of asphalt and concrete and non-contaminated dirt/soil.**
- **RECYCLE 65% of remaining materials generated**
- **SEPARATE plant/tree debris from other material, and COMPOST 100% of plant debris**

SAVE ALL RECEIPTS FOR SUBMITTAL WITH A FINAL DIVERSION REPORT
Failure to provide proper documentation may result in a $1000/ton penalty for each ton not recycled

Waste Handling Plan Acknowledgment			
The Foreman for each Subcontractor that comes on site is to receive a copy of the Construction Waste Handling Plan and complete this Acknowledgment Form. I have read the Waste Handling Plan for the project; I understand the goals of this plan and agree to follow the procedures in the Fremont Municipal Code (*Fremont Municipal Code § 8.40-Solid Waste, Recyclables and Organics Management Ordinance* www.fremont.gov).			
DAT	**SUBCONTRACTOR COMPANY NAME**	**FOREMAN NAME**	**SIGNATURE**

All Subcontractors shall comply with the project's Waste Handling Plan, and will provide weight and waste diversion data for their debris. Foremen shall sign the Acknowledgment Sheet.

Subcontractors who fail to comply with the Waste Handling Plan will be subject to backcharges or withholding of payment, as deemed appropriate. For instance, Subcontractors who contaminate debris boxes that have been designated for a single material type will be subject to backcharge or withheld payment.

1. The project's debris diversion requirements are 100% of asphalt, concrete, inerts, plant debris.

2. 65% of the remaining waste that is generated on this jobsite will be diverted from the landfill and recycled for other use.

3. The Waste Handling Plan identifies the materials that will be generated from the project, and the diversion strategy for each material type.

4. Waste prevention and recycling activities will be discussed at the beginning of subcontractor meetings. As each new subcontractor comes on-site, the contractor will present him/her with a copy of the Plan and provide a tour of the jobsite to identify materials to be salvaged and the procedures for handling jobsite debris. All Subcontractor foremen will acknowledge in writing that they have read and will abide by the Plan. The Waste Handling Plan will be posted at the jobsite trailer.

5. Salvage: Excess materials that cannot be used in the project should be returned to the vendor, the owner, or donated to charity if feasible.

6. Republic Services debris boxes will be delivered to the Fremont Recycling and Transfer Station. As site conditions permit, additional debris boxes should be used for particular phases of construction (e.g., concrete and wood waste) to ensure the highest amount of diversion possible.

7. In the event that the waste diversion rate is projected to be lower than what is required, then a strategy of source-separated waste diversion and/or waste stream reduction will be implemented. Source separated waste refers to jobsite waste that is not mixed but is instead allocated to a debris box designated for a single material type, such as clean wood or metal.

8. In the event that site use constraints (such as limited space) restrict the number of debris boxes that can be used for collection of designated waste the project Superintendent will, as deemed appropriate, allocate specific areas onsite where individual material types are to be consolidated. These collection points are not to be contaminated with non-designated waste types.

CITY OF Fremont

Debris Diversion & Disposal Report
(After Demolition/Construction)

Attach copies of receipts, gate tags, or other verifying documentation.

Applicant must reuse or recycle 100% of asphalt/concrete and 65% of remaining items. Failure to provide documentation will result in a $1000 per ton penalty for each ton not recycled or documented properly.

Permit BLD/PWC: _____ Project Name: _____

Project Address: _____ Date: _____

Contractor: _____ Contact: _____

Phone: _____ Email: _____

Type of Project: _____

Material	Tons/CY Reused	Tons/CY Recycled	Tons/CY Landfilled	Name of Recycling Facility or Service
Asphalt/ Concrete **(100% reuse/recycle required)**			N/A	
Plant or Tree Debris **(100% reuse/compost required)**			N/A	
Dirt/Clean Fill			N/A	
Brick				
Building Materials (doors, etc.)				
Cardboard				
Carpet/Foam/Padding				
Dry Wall/Sheetrock (scrap)				
Film Plastic				
Metal				
Mixed Const & Demo (C&D) (ie,wood, metal, drywall, film plastic)				
Plastic				
Wood - unpainted or pallets				
Wood - treated/painted	N/A	N/A		
Garbage	N/A	N/A		
Other:				
Totals:				

PROJECT SUMMARY

A. Total tons of materials salvaged, reused, or recycled (except A/C): _____

B. Total tons of materials landfilled (not recycled): _____

C. Total tons of materials generated for the project (Line A+B): _____

D. Percentage of materials recycled/reused (divide A by C x100%): _____%

For City Use Only: **Approved** _____ **Not Approved** _____

Waived _____ **Staff Initials** _____

Instructions for Completing the Debris Diversion & Disposal Report (DDDR)

The Debris Diversion & Disposal Report lists the actual amount of debris that was generated from the construction or demolition project.

1. Identify each type of debris item generated during the project (wood, scrap metal, etc.)
2. Enter the total weight or volume (by number of tons or cubic yards (CY)), of each item that was reused, recycled, or disposed in a landfill. Enter this number in the appropriate columns.
3. All the asphalt/concrete was to be reused or recycled. 65% of everything else must be reused or recycled to comply with the mandatory debris recycling ordinance. The asphalt and concrete tonnage will not count towards the 65% diversion requirement.
4. Attach receipts from each of the approved facilities or service providers who recycled/processed that material. Approved facilities are listed below. The receipts must indicate "Fremont" as the City of origin to be accepted.
5. If the materials were reused on site, list that in Reuse column: i.e., "wood waste chipped on site for mulch" with an estimate of the weight or volume.

Attach all receipts from all facilities and vendors for each type of debris item. The totals on the form should match the receipts. This report is due within 30 days of completing your project. An approved report and the receipts are needed before Final Permit Approval is issued from the City and the Building Inspector. Failure to provide documentation will result in a $1000 per ton penalty for each ton not recycled.

Approved Construction & Demolition Recycling Facilities

Fremont Recycling & Transfer Station:
41149 Boyce Road, Fremont 510-252-0500 www.fremont-recycling.com

Newby Island Landfill/Recycling Facility
1601 Dixon Landing Road, Milpitas 408-262-1401

Zanker Material Processing Facility
675 Los Esteros Road, San Jose 408-263-2384

Guadalupe Landfill
15999 Guadalupe Mines Road, San Jose 408-268-1670

Davis St Transfer Station
2615 Davis Street, San Leandro 510-563-4257

Stevens Creek Quarry (concrete, asphalt, dirt only)
12100 Stevens Canyon Rd, Cupertino 408-253-2512

Recommended Handling & Storage Procedures

Item or Material by Division	Suggested Action
02 SITEWORK	
Asphalt Paving	***Salvageable*** - reuse for temporary road construction
Chain Link Fencing	***Salvageable*** - roll up chain link and cut off posts to maximum length allowable - all accessories (tops, clamps, bolts, straps, etc.) should be kept together in a container
Wood Fencing	***Salvageable*** - if possible, dismantle in sections for easy re-erection - cut posts off at ground level
03 CONCRETE	
Cast-in-place Concrete	Recyclable - typically too large for salvage and reuse
Precast Concrete	Recyclable - typically too large for salvage and reuse
04 MASONRY	
Concrete Block	***Salvageable*** - if not concrete filled - recyclable if filled with concrete
Paving Stones	***Salvageable*** - stack and palletize for easy removal
Brick	***Salvageable*** - if set with lime-based mortar - recyclable if set with concrete
Decorative Concrete Block	***Salvageable*** - if not concrete filled - recyclable if filled with concrete
05 METALS	
Reinforcing Steel (rebar)	Recyclable - usually imbedded in concrete, therefore not reusable
Steel Flashing	Recyclable - usually not in suitable condition for reuse
Interior Metal Wall Studs	Recyclable - usually too time-consuming to save in suitable condition for reuse, therefore not cost effective
Structural Steel	***Salvageable*** - includes I-Beams, H-Beams, Square Tubing, Pipe, and Chanel Iron - ensure care is taken to keep straight - separate by size
Cast Iron	Recyclable - usually too old and brittle for reuse
Copper	Recyclable - rarely salvageable due to the possibility of damage while salvaging
Aluminum Soffit	Recyclable - usually not in suitable condition for reuse
Misc. Steel	***Salvageable*** - includes Pipe, Q-decking, Square-tubing, and Wilson joists - prior to reuse must determine the item's structural ability to meet current Building Code - recyclable if item is bent or structural ability is compromised
06 WOOD & PLASTICS	
Regular Wood Framing	***Salvageable*** - all lumber should be slated, stacked and banded according to dimension and lengths - stacks should be kept uniform (ensure piles fit in accordance with truck deck, 2 piles side by side - each pile a maximum width of 4' each including dunnage, height of piles should be kept to 3' to 4' maximum)
Pressure Treated Wood Framing	***Salvageable*** - same as regular wood framing
Regular Plywood Sheathing	***Salvageable*** - stack in piles keeping full sheets together and partial sheets together in lots of 50 pieces - separate by ¼", ½", ¾" etc. - recommend stacking nail side to nail side - materials should be kept dry by covering with plastic sheeting (which also allows for air flow)
Pressure Treated Plywood Sheathing	***Salvageable*** - same as regular plywood sheathing
Laminated Beams	***Salvageable*** - beams should be kept dry by covering with plastic sheeting (which also allows for air flow) - beams should be supported in such a manner as to keep them straight and should be slated to allow air flow when stacked
Wood Truss Joists	***Salvageable*** - joists should be supported in such a manner as to keep them straight and should be slated to allow air flow when stacked
Heavy Timbers/Posts	***Salvageable*** - all timber should be sorted according to dimension and length - timber should be slated to allow air flow - all damaged ends should be trimmed
Washroom Counters	***Salvageable*** - if fixtures are removed, counters can be stored vertically (like doors) - should be kept dry

07 THERMAL & MOISTURE PROTECTION	
Roofing Gravel	***Salvageable*** - reusable
Fiberglass Bat Insulation	***Salvageable*** - prevent from getting wet
Rigid Fiberglass Insulation	***Salvageable*** - prevent from getting wet
Plastic sheeting Rigid Insulation	***Salvageable*** - stack and band for easy transport
Copper Flashing	Recyclable - usually too time-consuming to save in suitable condition for reuse, therefore not cost effective
Roof Drains, Metal	Recyclable - usually too time-consuming to save in suitable condition for reuse, therefore not cost effective
08 DOORS & WINDOWS	
Doors, Metal	***Salvageable*** - remove with full frame and hardware - apply a metal self tapping screw through the top of the door to hold it in the frame as a unit - label keys belonging to each door
Doors, Wood	***Salvageable*** - remove with full frame and hardware - nail the door through the frame to hold it from falling out of jam - label keys belonging to each door
Bi-Fold Doors, Metal	***Salvageable*** - remove all hardware parts and attach to door (e.g. in plastic zip lock bags) - wrap track on edge of door with duct tape
Bi-Fold Doors, Wood	***Salvageable*** - remove all hardware parts and attach to door (e.g. in plastic zip lock bags) - screw track on edge of door
Overhead Doors	***Salvageable*** - must be removed carefully (as doors have spring assembly) - all door hardware should be kept together - (hinges, screws, rollers, guides etc.) - door panels should be stacked face to face - track should be marked left and right - note, it is very important to keep all parts
Patio Doors	***Salvageable*** - remove and stand vertically with drains to the bottom
Metal Sliding Doors	***Salvageable*** - dependent on size and condition of doors and hardware - recyclable otherwise if too large or not in suitable condition
Mechanical Closures	***Salvageable*** - dependent on age and physical condition
Panic Hardware	***Salvageable*** - keep all parts together (e.g. in plastic zip lock bags)
Pre-Finished Aluminum Thermal Windows	***Salvageable*** - dependent on the size - smaller windows should always be salvaged but larger windows can be difficult to resell (especially if fixed/non-opening)
Metal Sash Windows	***Salvageable*** - if small but limited marketability - recyclable otherwise by removing glass and recycling metal frame
Glass Panels	***Salvageable*** - limited marketability - store vertically or horizontally - ensure panels are level or supported in order to prevent damage to the seal
Unframed Glass Mirrors	***Salvageable*** - store vertically on either a carpet, cardboard, or rubber surface for protection - recommend storing face to face
Store Fronts	***Salvageable*** - best to be keep in one unit - store on A-frame rack and tie back
Skylights	***Salvageable*** - ensure that seal is not broken - store where not affected by wind
09 FINISHES	
Carpet/Carpet Tiles	***Salvageable*** - if in very good condition
Terra Cotta Tile	***Salvageable*** - dependent on quantities available, since sometimes difficult to match if product is obsolete
Metal Base Board	Recyclable - usually too time-consuming to save in suitable condition for reuse, therefore not cost effective
Wood Base Board	***Salvageable*** - remove, denail (if possible), stack face to face, and hold together with duct tape - keep sizes and lengths together (if possible)
Hardwood Flooring	***Salvageable*** - if tongue and groove flooring - remove, denail, stack face to face, and hold together with duct tape - keep lengths together (if possible) - thin strip flooring is not salvageable (i.e. too thin for refinishing)
Gypsum Panels	Recyclable
Wood Paneling	***Salvageable*** - if in suitable condition (otherwise not cost effective) - recyclable otherwise (with clean wood)
Metal Suspension System	Recyclable - usually too time-consuming to save in suitable condition for reuse,

	therefore not cost effective
Specialty Wood Finishes	***Salvageable*** - includes mantels, built-in shelving, bookcases, crown moldings, and window sash - keep all trim work where possible
Cabinets	***Salvageable*** - includes kitchen and bathroom cabinets - if possible, take a picture of the cabinet in place prior to removal as this will give potential purchasers a better idea of how the cabinets look in place
10 SPECIALTIES	
Toilet Partitions	***Salvageable*** - must ensure all hardware is available
Framed Glass Mirrors	***Salvageable*** - store vertically on either a carpet or rubber surface for protection - recommend storing face to face
Towel Racks, Soap Dispensers, and Other Washroom Accessories	***Salvageable*** - for commercial products ensure all keys to open units are included
Shower Stalls	***Salvageable*** - if acrylic stalls - ensure the stall is suitable condition and not cracked or overly worn
Chalk boards and White boards	***Salvageable*** - limited marketability
Metal Lockers	***Salvageable*** - for ease of handling and resale, break into units of 6 or less
Old Hardware	***Salvageable*** - includes glass door knobs, hinges, and antique items
11 EQUIPMENT	
Household appliances	***Salvageable*** - if in suitable condition - includes fridges, stoves, stove hoods, dish washers, freezers, washers, and dryers
12 FURNISHINGS	
Metal File Cabinets	***Salvageable*** - only if in very good condition
Metal Shelving Unit	***Salvageable*** - when dismantling ensure all bolts, nuts and additional parts are kept together - recommend marking sections in order to make it easier to re-erect
Commercial Metal Racking	***Salvageable*** - when dismantling ensure all bolts, nuts and additional parts are kept together - recommend marking sections in order to make it easier to re-erect
Metal Desks	***Salvageable*** - if in suitable condition - recyclable otherwise
Wood Desks	***Salvageable*** - if in suitable condition
14 CONVEYING SYSTEMS	
Winches	***Salvageable*** - if in suitable mechanical condition - recyclable otherwise
15 MECHANICAL	
Toilets	***Salvageable*** - limited marketability due to current Plumbing Codes (white toilets offer the best resale opportunities) - recyclable otherwise (sink with concrete and taps with metals)
Urinals	***Salvageable*** - ensure there are no cracks and the hardware is working - recyclable otherwise (sink with concrete and taps with metals)
Ceramic Sinks	***Salvageable*** - if in suitable condition, recyclable otherwise (sink with concrete and taps with metals)
Stainless Steel Tanks	***Salvageable*** - dependent on previous usage (sometimes required to destroy for contamination reasons) - recyclable otherwise
Janitor Sinks	***Salvageable*** - dependent on its condition - recyclable if made of old cast iron
Bath Tubs	***Salvageable*** - dependent on its condition and colour (white bath tubs and old claw foot tubs offer the best resale opportunities)
Radiators	***Salvageable*** - dependent on size (for ease of handling, 20 to 25 ribs would be the maximum suitable size for salvaging) and condition - recyclable otherwise
Hot Water Tanks	***Salvageable*** - if year 1995 or newer - recyclable otherwise
Suspended Blow Heaters	***Salvageable*** - if year 1990 or newer - recyclable otherwise
Wall Mount Radiators	***Salvageable*** - dependent on its condition - recyclable otherwise
Wall Mount Electric Radiators	***Salvageable*** - dependent on its condition - recyclable otherwise

Mechanical Water Pumps & Tanks	***Salvageable*** - dependent on its condition - recyclable otherwise
Oil Interceptor	Recyclable
Oil Storage Tank	***Salvageable*** - dependent on previous usage (sometimes required to destroy for contamination reasons) - recyclable otherwise
Ventilation Ducting	***Salvageable*** - dependent on size and condition - recyclable otherwise
Metal Ducting\Ventilation	***Salvageable*** - dependent on size and condition - recyclable otherwise
Stainless Steel Ducting\Ventilation	***Salvageable*** - dependent on size and condition - recyclable otherwise
Copper Ducting\Ventilation	***Salvageable*** - dependent on size and condition - recyclable otherwise
Aluminum Ducting\Ventilation	***Salvageable*** - dependent on size and condition - recyclable otherwise
Piping	***Salvageable*** - dependent on size and condition - recyclable otherwise
Exhaust Hood, Galvanized Metal	***Salvageable*** - dependent on size and condition - recyclable otherwise
Exhaust Hood, Stainless Steel	***Salvageable*** - dependent on size and condition - recyclable otherwise
Supply Air Units	***Salvageable*** - dependent on age, condition, and marketability - specialty item
Return Air Metal Grill	***Salvageable*** - if in suitable condition or collectable, recyclable otherwise (with metals)
Fresh Air Metal Diffuser	***Salvageable*** - if in suitable condition or collectable, recyclable otherwise (with metals)
Fire Bells	***Salvageable*** - if in suitable condition or collectable, recyclable otherwise (with metals)
Air Receiver Tank	***Salvageable*** - based on marketability - specialty item
Compressor Tank	***Salvageable*** - based on marketability - specialty item
Compressor Motor	***Salvageable*** - dependent on age and condition - recyclable otherwise
After Cooler	***Salvageable*** - based on marketability - specialty item
Boilers (hot water heating)	***Salvageable*** - dependent on age, size and condition - recyclable otherwise
HVAC Roof Systems	***Salvageable*** - dependent on age and condition - recyclable otherwise
Gas Furnaces	***Salvageable*** - dependent on size and condition and if year 1995 or newer - recyclable otherwise
16 ELECTRICAL	
Transformers	Usually tested for PCBs and if confirmed, then handled as a special waste - ***salvageable*** otherwise
Switch Boxes	***Salvageable*** - dependent on age, size and condition - recyclable otherwise
Receptacle Switches	***Salvageable*** - dependent on age and condition - landfilled otherwise
Receptacle Plugs	***Salvageable*** - dependent on age and condition - landfilled otherwise
Heat Detectors	***Salvageable*** - dependent on age, size and condition - landfilled otherwise
Exhaust Fans	***Salvageable*** - dependent on age, size and condition - recyclable otherwise
Electrical Ceiling Blade-Fans	***Salvageable*** - dependent on age, size and condition - recyclable otherwise
Incandescent Light Fixtures	***Salvageable*** - dependent on age, size and condition - recyclable or landfilled otherwise
Fluorescent Light Fixtures	Usually tested for PCBs and if confirmed, then handled as a special waste - ***salvageable*** otherwise - dependent on age and condition
Battery Lighting Fixtures (wall mount)	***Salvageable*** - dependent on age (as sometimes batteries are limited to holding a charge) - landfilled otherwise
Exit Lights	***Salvageable*** - dependent on age (as sometimes batteries are limited to holding a charge) - landfilled otherwise
Panel Boxes	***Salvageable*** - dependent on age, size and condition - recyclable otherwise
Commercial Vapor Lights	***Salvageable*** - dependent on age and condition - landfilled otherwise
Street Lights on Poles	***Salvageable*** - dependent on age, size and condition - recyclable otherwise

END OF SECTION

SECTION 01 74 23 Final Cleaning

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cleaning and cleanup during construction.

B. Disposal of debris.

C. Final site cleanup.

1.02 RELATED SECTIONS

Refer to General Conditions, Article 7, Subsection 7.9 “Worksite Maintenance and Operations”.

1.03 CLEANING AND CLEANUP DURING CONSTRUCTION

A. The entire site of the Work, including the Contractor's work and storage areas, shall be kept in a neat, clean, and orderly condition at all times during the course of this Contract. The Engineer may, at any time during construction, order a general cleanup of the site as a part of the Work, and there shall be no additional cost to the City therefor. The Contractor shall provide general daily clean-up and disposal service for removal of waste, rubbish, trash, and debris away from the Worksite.

B. Perform cleaning of all facilities, as required during construction, to prevent accumulations of dust, dirt, soil, trash, and debris, so that a clean and safe working environment will be present at all times.

C. Walkways shall also be kept neat and free of pebbles and other obstacles to walking comfortably, equivalent to broom clean of paved surfaces.

D. The Contractor shall remove all graffiti placed during the course of the Work within the Contractor’s enclosed secured areas at the work site. The Contractor shall remove the graffiti within 24 hours after its detection in these areas.

1.04 DISPOSAL OF DEBRIS

A. Dispose of waste, trash, and debris in a safe, acceptable manner, in accordance with applicable laws and ordinances and as prescribed by authorities having jurisdiction. Bury no waste material and debris on the site. Burning of trash and debris on the site will not be permitted.

B. Location of disposal site for trash and debris and length of haul are the Contractor's responsibility.

1.05 FINAL SITE CLEANUP

A. Prior to Final Inspection, thoroughly clean the entire site and put it into a clean and neat, acceptable condition. Remove from the site all construction waste and unused materials, dunnage, loose rock and stones, excess earth, and debris of any description resulting from the Work.

B. Hose down and scrub clean where necessary all pavement and paved walks. Any runoff from this activity must be vacuumed or diverted as necessary away from the underground storm drain system.

C. Thoroughly remove mortar droppings from concrete slabs and pavement where they occur. Hose down and scrub clean all concrete flatwork and exposed vertical surfaces of concrete and masonry. Any runoff from this activity must be vacuumed or diverted as necessary away from the underground storm drain system.

D. Free and clear all new and existing drainage systems.

E. Clean and protect all conduit openings.

F. Prior to Final Inspection, the Contractor shall remove all markings from streets, sidewalks, walls and other City infrastructure within the work site and staging areas.

PART 2 PRODUCTS

2.01 CLEANING PRODUCTS

A. Utilize cleaning products that meet the requirements of the Green Seal GS-37 standard or comply with the requirements and maximum VOC limits of Title 17, California Code of Regulations, Division 3, Chapter 1, Subchapter 8.5, Article 2, Regulation for Reducing VOC Emissions from Consumer Products (September 2001).

B. Utilize janitorial paper products and trash bags that meet the minimum percentages of post-consumer recycled content and recovered content requirements of EPA's Comprehensive Procurements Guidelines.

PART 3 EXECUTION

3.01 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions in this Section, "**Final Cleaning"**, will be considered as included in the price paid for various contract items of work and no additional compensation will be allowed therefor.

END OF SECTION

SECTION 01 77 00 Closeout Procedures

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements preparatory to final inspection.

B. Final inspection.

C. Acceptance of the Work and final payment.

1.02 RELATED SECTIONS

A. Article 11 – Completion and Warranty Provisions of the General Conditions.

1.03 REQUIREMENTS PREPARATORY TO FINAL INSPECTION

A. Prior to final inspection, the Contractor will perform or provide the following, as applicable:

1. Temporary facilities, except as may be required for punch list work, will be removed from the site.

2. The site and all applicable appurtenances and improvements will be cleaned as specified in Section 01 74 23 – Final Cleaning.

3. Record ("As-Built") drawings and specifications will be completed, signed, and submitted to the Engineer as specified in Section 01 78 39 - Project Record Documents.

4. Operating instructions for equipment will be properly mounted and posted as specified in Section 01 78 39 – Project Record Documents.

5. Guaranties and warranties will be submitted to the Engineer, as specified in the General Conditions and various sections of the Specifications, along with required operations and maintenance manuals as specified in Section 01 78 39 – Project Record Documents.

B. The Contractor will be represented by its principal superintendent and such Subcontractors and Suppliers as may be necessary to answer the questions of the Engineer's inspection team.

C. Certain elements of the Work, such as mechanical and electrical work, may be scheduled separately at appointed times in order to keep the preliminary inspection more focused and the number of persons in the Engineer's inspection team to a minimum.

D. From the information gathered from this inspection, the Engineer will prepare a punch list of work to be performed, corrected, or completed.

E. All work on the punch list will be completed by the Contractor prior to requesting the final inspection.

1.04 FINAL INSPECTION

A. When all requirements of the above prepared punch list have been completed, the Contractor will request the final inspection.

B. The request will be made in writing, addressed to the Engineer, at least 14 calendar days in advance of the requested date of the final inspection.

C. The Contractor will be represented by its principal superintendent and such Subcontractors and Suppliers as may be necessary to verify the completion of the Work including punch list items.

D. Depending on the extensiveness of the punch list items, certain elements of the Work may be scheduled separately for final inspection at appointed times.

1.05 ACCEPTANCE OF THE WORK AND FINAL PAYMENT

A. Acceptance of the Work will be made in accordance with Article 8.4, and Article 11.1(D) of the General Conditions.

B. Final payment will be made in accordance with Article 11.1(E) of the General Conditions.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions in this Section, **"Closeout Procedures"**, will be considered as included in the price paid for various contract items of work and no additional compensation will be allowed therefor.

END OF SECTION

SECTION 01 78 39 Project Record Documents

PART 1 GENERAL

1.01 SECTION INCLUDES:

A. Maintenance of Record Documents.

B. Drawings.

C. Specifications.

D. Submission of documents.

1.02 MAINTENANCE OF RECORD DOCUMENTS

A. Maintain at the Worksite one copy of the following documents for record purposes:

1. Conformed Contract Documents.
2. Change Orders.
3. Approved Submittals.
4. Clarifications or Explanatory Details or Request For Information (RFI).
5. Inspection Reports.
6. Laboratory Test Records.
7. Field Test Reports and Records.
8. Factory Test Reports and Records.

B. Maintain for record purposes at a location approved by the Engineer, electronic files for those documents which are required to be submitted electronically. Ensure that backups of electronic files are made on a regular basis and stored at a remote location.

C. Store documents used for record purposes in the Contractor's field office or other approved location, apart from documents used for construction. Do not use record documents for construction or fabrication purposes.

D. Provide files and racks for storage of documents.

E. File documents in accordance with the filing format of the Contract Specifications, by Section number and title.

F. Maintain documents in clean, dry, legible condition.

G. Label each document "Project Record".

H. Make documents available at all times for inspection by the Engineer. Make copies of electronic documents available upon Engineer's request.

1.03 DRAWINGS

A. Record ("As-Built") Drawings (also referred to as "redlines):

1. Maintain record ("as-built") drawings of all work and subcontracts, continuously as the job progresses. A separate set of prints, for this purpose only, will be kept at the Contractor's field office at all times. One set of full size 22 by 34 inch prints will be maintained for recording "as-built" revisions and special features. At the Contractor's option, an electronically kept set of Conformed Contract Documents may be kept for recording "as-built" revisions. Electronic files shall be in a PDF format. Make documents (either prints or electronic files) available at all times for inspection by the Engineer.

2. These drawings will be kept up-to-date and are required to be so certified by the Engineer at the time invoices are submitted for progress payments. The Engineer may withhold progress payments if record drawings are not kept current.

3. The City will furnish the Contractor a complete set of full-size copies of the Contract Drawings for the purpose of making prints for record ("as-built") drawings. At the Contractor's option, the City will furnish the Contractor a complete set of electronic files of the Contract Drawings in PDF format for the purpose of maintaining record ("as-built") drawings electronically.

4. Deviations from the drawings, utilities and services, mechanical and electrical lines, details, and other work will be incorporated on the record ("as-built") prints in red ink, or in red pencil if sharp, neat, and clearly legible.

5. During the course of construction, identify actual locations to scale in red on the Contract Drawings for runs of mechanical and electrical work, including utilities and services, installed in walls, or otherwise concealed. Deviations from the Drawings will be shown in detail. Locate main runs, whether wiring, piping, conduit, ductwork, or drain lines by dimension and elevation. Shop Drawings may be used to reflect record ("as- built") conditions, in which case the appropriate Contract Document will be marked to refer to such Shop Drawings as part of the record ("as-built") configuration.

6. No work will be permanently concealed until the required information has been recorded.

7. Where the Contract Drawings are not of sufficient size, scale, or detail, the Contractor will furnish its own drawings for incorporation of details and dimensions.

8. The final submittal of record ("as-built") drawings will be stamped "Project Record", signed and dated in blue ink by the Contractor, and will be delivered to the Engineer, in a hard copy and electronically, prior to the final inspection as specified in Section 01 77 00, Closeout Procedures.

B. Change Orders:

1. Changes to the Contract Drawings as the result of Change Orders will be incorporated on the prints, and these changes will be identified by Change Order number and effective date.

2. When revised Contract Drawings are issued as the basis of, or along with, Change Orders, these revised drawings will be incorporated into the record ("as-built") set and identified with Change Order number and effective date. Drawings deleted by Change Order will not be part of the record ("as-built") set. The City will furnish the Contractor with reproductions and electronic files of such revised City-furnished Contract Drawings.

C. Submittals:

1. One complete set of approved Submittals in PDF format will be collected and maintained for record purposes.
2. Pages of catalog cuts will be clear, legible, and permanent. These catalog cuts will become the property of the City.
3. Shop drawings will be electronic. These drawings will become the property of the City.
4. Submittals will be filed and maintained electronically.
5. Submittals will be delivered to the Engineer electronically.

D. Electronic Documents: Record ("as-built") information, as applicable, will be recorded on an electronic copy of those documents which are required to be submitted electronically.

1. For those drawings which are required to be submitted electronically, submit three complete sets of half-size (11 by 17 inch, unless otherwise required) hard copy originals plotted on 20 lb. bond paper, zero solvent. The image will be pressure-fused using a laser or LED plotter. Inkjet plotter is also acceptable. Sepia, blue or brown lines are not acceptable.
2. Record documents for each submittal which was required to be prepared and submitted electronically will include two CD-ROMs of the electronic version. Electronic files will include a matrix or document showing how the files are set up and how to access them. Include no extraneous files. Folder arrangement must be clear and understandable and subfolders are to be used only when necessary.

1.04 SPECIFICATIONS

A. Contract Specifications:

1. The specifications for record purposes will be filed in one or more large-ring, 3-ring binder or binders. An electronic copy of the record specifications shall be provided in PDF format.
2. Information, changes, and notes will be recorded in the specifications in blank areas, such as page margins or the backs of opposite pages, or on separate sheets inserted in the binder. All such information, changes, and notes will be legibly recorded with red pen or red printing as appropriate.
3. In applicable specification sections, record the manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually furnished and installed, including manufacturer and supplier's address and telephone number.
4. The record specifications will be complete and will include all applicable Contract Documents other than drawings.

B. Change Orders:

1. Change Orders will be incorporated into the front of the record specifications in reverse chronological order. Use appropriate page dividers to identify Change Orders and to separate Change Orders from the Specifications.
2. In addition, changes to the Specifications effected by Change Order will be legibly annotated on the affected page or pages of the Specifications or adjacent thereto.

1.05 SUBMISSION OF DOCUMENTS

A. At completion of the Work, and before requesting final inspection, deliver Worksite record documents to the Engineer.

B. For record ("as-built") drawings, submit 2 blackline prints (1 full size and 1 half-size), and one electronic (pdf) copy with revisions incorporated on the prints in red ink. For those documents which are required to be maintained electronically, submit 1 full size plot and 1 half-size plot of drawings, hard copies of 8 1/2 by 11 inch documents, and electronic files on CD-ROM.

C. Software:

1. Submit all documentation, licenses, and electronic media associated with the purchase of commercially available software furnished to the City under this Contract. The documentation and media will be submitted in appropriate storage containers or in the original media packaging.

2. Where development of User's Guides is specified, User's Guides will be submitted.

3. Unless otherwise specified, documentation will be prepared in accordance with recognized industry standards for such documentation as approved by the Engineer.

D. Submission of record documents will be accompanied with a transmittal letter, in triplicate, containing the following information:

1. Date of submission.

2. Project title and number.

3. Contractor's name and address.

4. Title and number of each record document.

5. Certification that each document as submitted is complete and accurate.

6. Signature of Contractor, or its authorized representative.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 MEASUREMENT AND PAYMENT

Full compensation for conforming to the provisions in this Section, **Project Record Documents**, will be considered as included in the price paid for various contract items of work and no additional compensation will be allowed therefor.

END OF SECTION

DIVISION 2 – EXISTING CONDITIONS

SECTION 02 41 00 SITE DEMOLITION

PART 1 GENERAL

1.06 SCOPE

A. Site Demolition work includes the furnishing of labor, materials of any kind, tools, equipment, implements, machinery, methods of process, and services necessary to clear the site as shown on the plans, described by these Special Provisions, and as directed by the Engineer. The work shall include, but shall not necessarily be limited to, the following:

1. Installation of temporary construction fencing
2. Remove and dispose of existing basketball court and aggregate base
3. Stockpile subgrade soil material for re-use
    a. Any excess stockpiles soil shall be off hauled prior to the end of the project.

1.07 RELATED SECTIONS

A. Section 01 00 00 “Supplemental to the General Requirements”

B. Section 01 30 00 “Submittal Procedures”

C. Section 01 32 30 “Photographic Documentation”

D. Section 01 71 13 “Mobilization and Temporary Construction Facilities”

E. Section 01 72 40 “Conformance Survey”

F. Section 01 74 19 “Construction and Demolition Debris Management”

G. Section 01 56 00 “Protection of Existing Facilities”

H. Section 01 56 26 “Temporary Construction Fencing”

I. Section 31 20 00 “Rough Grading”

J. Section 32 84 00 “Irrigation Adjustment”

K. Section 11A and 11B, City Of Fremont Standard Trench Backfill Specification, Standard Specifications, dated January 1995 (amended).

L. All Technical Sections found herein

M. Public Safety: Refer to the Special Provisions herein, Section 01 00 00 “Supplemental to the General Conditions” and Caltrans Standard Specifications.

1.08 SUBMITTALS

A. Submit under provisions of Section 01 30 00 “Submittal Procedures”

B. Proposed Protection Measures: Submit informational report, including Drawings that indicate the measures proposed for protecting individuals and property to dust control, noise and other environmental conditions.

C. Indicate proposed location of construction fencing

D. Schedule -- Submit for :

1. Demolition schedule review as a part of construction schedule
2. Waste Handling Plan, see Section 01 74 19

E. Detailed information on methods and sequencing for accomplishing this Work shall be submitted to Project Landscape Architect no later than 10 days prior to commencement.

F. The Contractor shall provide copies of written agreements from private land, City, landfill operators, or other agencies accepting disposal of any demolished material prior to any work.

G. The Contractor shall submit to the City a haul route plan for approval, prior to commencing any work.

H. Truck Movement is limited between the hours of 7 am and 4 pm, PST.

1.09 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. USA Underground Service Alert

B. CAL-OSHA

1.10 DISPOSAL AND CLEAN UP

A. All debris, waste material, tools, equipment, shall be removed from the project site and disposed of in accordance with the provisions in Section 7.9(D) of the General Conditions.

B. Materials required to be recycled shall be done so in accordance with Section 01 74 19 Construction and Demolition Debris Management. Regulations.

C. Remove all materials, including all debris, waste material, tools, equipment, etc., from the project site upon, completion of work.

D. Regulations for Hauling and Disposal: Comply with all Federal, State, and Local Agency hauling and disposal regulations, and comply with all pertinent regulations of OSHA and local codes and practices.

1.11 JOB CONDITIONS

A. UTILITIES: Underground utilities exist in work areas; use extreme caution. Pothole to verify actual depth/ location of utilities. Notify city Engineer in writing if existing conditions interfere with any construction. Locations shown on the plan are approximate and for general information only. Notify underground service alert (USA) at least 48 hours prior to an excavation on this project (phone: 800-227-2600). Locate and mark all utilities prior to start of construction.

B. For utilities within the project site, a private utility locating firm may be required, at the option of the contractor, to identified underground utilities which may not be identified through USA.

C. Remove materials carefully, to extent shown or required. Provide neat and orderly junctions between existing and new materials.

D. Protect from damage existing trees, structures and facilities that are to remain.

E. Perform Work so as to provide the least interference and most protection to existing facilities and improvements to remain.

F. Provide not less than 72 hours' notice of activities that will affect operations of adjacent occupied buildings.

G. Maintain access to existing walkways, exits, and other facilities used by adjacent residents and occupants of adjacent buildings.

1. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from the City or other authorities

having jurisdiction.

1.12 PROTECTION

A. Provide as necessary to protect public, the City's employees, existing finishes, improvements to remain, existing utilities, and adjoining property from damage, all in accordance with applicable regulations.

B. Dust Palliation: All necessary precautions, including watering, shall be taken to control air-borne dust to within reasonable limits. If serious problems and/or complaints arise due to air-borne dust, and when directed by the City's Engineer, or Project Inspector, operations causing such problems shall be temporarily discontinued.

C. Explosives: Use of explosives will not be permitted.

1.13 QUALITY ASSURANCE

A. Codes and Regulations: Comply with governing codes and regulations. Use experienced workers.

PART 2 MATERIALS/PRODUCTS

2.03 TEMPORARY CONSTRUCTION FENCING

A. Refer to Section 01 56 26, "Temporary Construction Fencing" for further information.

PART 3 EXECUTION

3.03 MOBILIZATION

A. Refer to Section 01 71 13, "Mobilization and Temporary Construction Facilities" for additional information.

3.04 TEMPORARY CONSTRUCTION FENCING

A. As first order of work, the contractor shall install all new temporary construction fencing to secure the site, staging area, and work zone.

B. Establish and clearly mark the accessible route to the project site entry.

C. Section 01 56 26, the contractor shall be responsible for adjusting the layout of the fences as necessary to accommodate their work, and to accommodate other contractor's doing work, accessing the site, accessing any buildings.

D. No additional payment will be made for adjusting the layout of the temporary construction fencing.

3.05 CONSTRUCTION SURVEYING, STAKING AND CONFORMANCE SURVEYING

A. Refer to Section 01 72 40 "Conformance Surveying" for additional information.

3.06 SITE DEMOLITION

A. Occupancy and Water Pollution Control

1. Water sprinkling, temporary enclosures, chutes, watering trucks, and other suitable methods shall be used to limit dust and dirt rising and scattering in the air. The Contractor shall comply with all government regulations pertaining to environmental protection.

2. Water shall not be used in a manner that creates hazardous or objectionable conditions such as ice, flooding, muddy conditions, or pollution.

3. Implement all best Management Practices per the Contractor's Water Pollution

Control Plan.

4. The site shall be kept neat and orderly during the demolition to the maximum extent practical.

5. Public right-of-way and private property shall be kept free of debris at all times. Stockpiles of demolished items or materials shall be removed from the site on a daily basis or stored in waste containers which shall be emptied on a weekly basis or as conditions require in order to manage the accumulation of waste. Accumulations of flammable materials shall not be permitted.

B. Inspection

1. Prior to all work of this section, Contractor shall carefully inspect site and all objects designated to be removed and to be preserved.

2. Locate all existing active utility lines traversing the site and determine the requirements for their removal and/or protection.

3. Where existing conditions conflict with representations of the Contract Documents, notify the Engineer and obtain written clarification prior to commencement of demolition.

4. Do not commence Demolition Work until unsatisfactory conditions have been corrected.

C. Potholing

1. Prior to rough grading, excavation and trenching for utilities, and any removal of vegetation, the Contractor shall locate all underground utility facilities so that proper precautions may be taken to not damage such facilities. Failure to follow this procedure places the responsibility for repairing any damage resulting from work upon the Contractor, and all repairs shall be done at the Contractor's expense.

2. The Contractor shall backfill all voids created by clearing and grubbing work with on-site native material, backfilled in a slightly convex mound to compensate for settling. Backfill material in all non-paved areas may be selected from the on-site excavations to be performed and shall be clean, free of lumps and debris greater than one inch and shall be cohesive.

3. Notify the Project inspector of any conflicts regarding the depth of existing underground utilities that may be affected by, or come into contact with new work.

4. Any underground utilities damaged by the contractor due to not adequately potholing to determine depth, and not adequately protected shall be repaired at the contractor’s expense.

D. Utilities and Facilities to Remain and be Protected

1. Protect all existing utility boxes, including junction boxes not identified to be demolished or removed.

2. Junction boxes shall remain at the existing elevations in the field and new surfacing work shall conform to those elevations and positively drain away from those boxes and facilities.

E. Irrigation System Removal

1. Irrigation heads, valves, and controllers shall be salvaged and provided to City. Refer to Section 32 84 00 “Irrigation Adjustments”

2. Refer to Irrigation Plans and Demolition Plans for additional information. Plans are diagrammatic and may require removal beyond, or less than, the limits delineated on the plans.
3. Prior to rough grading, remove all irrigation laterals and sprinkler head, and other existing irrigation components indicated on the drawings. Remove back to points to be capped, spliced or reconnection points. Remove items in a manner that minimizes damage to the components.
4. All irrigation mainline, laterals, valves, and heads as delineated on the plans, shall remain.
5. If sections of pipe are designated to be abandoned in place, greater than 4 inches in diameter, the pipe shall be backfilled with slurry to prevent collapse during rough grading and future. Pipe shall be capped at one end and a hole drilled into that end to allow for air to escape during pumping operations. Slurry shall be pumped from the high end to low end, or other method as determined by the contractor.
6. All components designated for removal shall be done in a manner that minimizes damage to the components. Deliver only salvageable items to City's Representative. All other items shall be disposed of legally by the Contractor.
7. The existing mainline shall remain in service at all time during construction. If a shutdown of the main line is necessary to facilitate construction, coordinate the timing with the Project Inspector and Parks Maintenance personnel to ensure the irrigation system does not run. At no time will the main line be shut down for more than 48 hours to accommodate work.
8. The relocated heads and valves shall be in working order so that existing sod and planting to remain in place may be irrigated adequately through the time of the project.
9. All trenches in landscaped areas shall be backfilled with native material and compacted to 88 percent minimum relative compaction, prior to excavation of subgrade. All trenches under decomposed granite shall be backfilled using trench backfill.
10. The soil subgrade should be moisture conditioned and compacted at over optimum water content. Relative compaction values are based on the laboratory test procedure ASTM 01557-02.
11. Protect all elements designated to remain in place and in service as delineated on the plans.
12. All voids created due to excavation of irrigation system components to be removed, shall be backfilled with native on site materials, or trench backfill.
13. The relocated heads and valves shall be in working order so that existing sod and planting to remain in place may be irrigated adequately through the time of the project.

F. Existing Basketball Court and Basketball Standard Removal

1. The general area of asphalt removal is shown on the Plans.
2. Remove all asphalt surfacing and base rock to subgrade. See Plans, sheet L2.0 for existing asphalt and base rock thicknesses.
3. Remove basketball standard and its concrete footing, including base material, as shown in plans.

a. Backfill shall be native on-site soil compacted to 88% - 90% relative compaction.

4. The removed basketball standard, asphalt and concrete material, including base rock shall be disposed of off-site at an approved recycling facility. Refer to the requirements in Section 01 74 19 “Construction and Demolition Waste Management”.

G. Existing gravel pathway removal

1. The general area of gravel pathway removal is shown in the Plans.

2. Remove the gravel pathway, including any base material to subgrade. Depth may vary in order to accommodate pedestrian concrete paving section. Do not use existing gravel pathway’s base material for new concrete paving subbase material.

3. The removed gravel pathway with base material shall be disposed of off-site at an approved recycling facility. Refer to the requirements in Section 01 74 19 “Construction and Demolition Waste Management”.

3.07 MEASUREMENT AND PAYMENT

A. Refer to 01 56 26 **“Temporary Construction Fencing”** for measurement and payment of “Temporary Construction Fencing”

B. The contract lump sum payment for “Site Demolition” shall include full furnishing all labor, materials, tools, equipment, and incidentals and doing all the work, including, demolition of basketball court, basketball standard and footing, demolition of gravel pathway, irrigation system removal, clean-up, disposal, including off haul and disposal of excess excavated on-site soil, and complying with applicable regulations, complete in place as shown on the plans, as required by these Special Provisions, and as directed by the City Engineer or their designee and no separate payment will be made therefor.

END OF SECTION

DIVISION 3 - CONCRETE

SECTION 03 11 00 CONCRETE FORMWORK

PART 1 – GENERAL

1.01 SCOPE

Supply and install all formwork for all cast-in-place concrete as shown on the plans and as specified herein.

1.02 COORDINATION

A. All pipes, sleeves, anchors and bolts, angle frames, inserts, supports, ties and other materials in connection with concrete construction shall be placed and secured in position before the concrete is placed.

B. The Contractor shall obtain information and instructions from other trades and suppliers in ample time to schedule and coordinate the installation of items furnished by them to be embedded in concrete so that provision for their work can be made without delaying the project.

C. Cutting and/or patching made necessary by failure or delay in complying with these requirements shall be done at no cost to the City.

1.03 CLEAN-UP

During the progress of the work and at the completion of the work, the Contractor must conform to the requirements of Division 1, General Requirements of these Special Provisions.

PART 2 – MATERIALS

2.01 MATERIALS

A. Forms for Slabs and Exposed Concrete: Forms for flat, exposed surfaces shall be 5-Ply Exterior B-B (Concrete Form) panels conforming to the requirements of U.S. Department of Commerce Product Standard PS 1-66. See requirements for thickness hereinafter. Panels with raised or separated face veneers shall not be used for exposed concrete.

B. Form Facing Material

1. Provide non-porous surface such as steel, plastic, or high-density overlaid plywood with watertight joint seals to prevent leakage.

2. Plywood panels shall have a smooth surface treatment to prevent any development of bond or adhesion to concrete and to seal plywood surfaces against moisture.

C. Form Ties: Fiberglass rods tinted to match concrete.

D. Form Release: Burke Form Sealer, manufactured by W.J. Burke Company, or approved equal, shall be used and shall be applied in strict accordance with the manufacturer's directions, or approved equal.

E. Rough Hardware: Nails, bolts, screws, anchors, etc., as shown or needed shall be furnished and set.

PART 3 – EXECUTION

3.01 WORKMANSHIP

A. Footings shall rest on firm, undisturbed or compacted soil at a minimum depth below finish or natural grade as stated on the plans.

B. Forms for concrete shall be complete and of such strength and construction as to prevent any spread, shifting, or settling of same when concrete is deposited therein and tight enough to avoid any leakage or washing out of cement mortar from the concrete.

C. All forms and false-work shall be designed in a manner so that the stresses in the different members can be determined, including the details. They shall have sufficient rigidity so as to resist deflection more than one-eighth inch (1/8") between supports after the concrete has been placed therein, and to assure a smooth and even appearance of the surfaces. Any plywood forms shall be not less than one-quarter inch (1/4") thick. If necessary to prevent deflections, plywood shall be backed with other material.

D. Bolts, rods and other approved devices shall be used for internal ties and spreaders. These shall be of such construction that when the forms are removed, no metal shall be within one inch (1") of an exterior face.

E. Pipes exceeding one-third (1/3) of slab thickness shall not be placed in structural concrete unless approved by the Engineer. Pipes may be placed through structural concrete in sleeves, but may not be embedded therein.

F. Special care shall be taken that forms are true to the required lines, grades and surfaces so as to give a uniform neat and workmanlike finish to all concrete surfaces and to make form supports of sufficient strength, properly braced and on adequate foundations so that there shall be no settling or distortion when the weight of concrete is added.

G. All dirt, chips, sawdust, rubbish, water etc., shall be completely removed from the forms by water hosing and air pressure before any concrete is deposited therein. No wooden ties nor blocking shall be left in concrete except where indicated for attachment of other work.

H. Any wood forms other than plywood shall be thoroughly water soaked before placing any concrete. The wetting of forms shall be started at least twelve (12) hours before concreting.

I. Upon removal of forms, all bolts, wires for anchoring, etc., shall be either removed, cut off to lengths as directed or left in place for anchorage of other work as specified.

J. When a concrete pour has been stopped for a sufficient length of time so that shrinkage or warp has separated the forms and the concrete, provisions shall be made to draw the forms into firm contact with the concrete before placing additional concrete. Care must be taken to prevent any shoulder or ledge being formed at a cold joint.

K. Forms to be reused shall be in good condition and shall be thoroughly cleaned before being reused.

L. Construction details shall be in conformance with the Standard Specifications and City of Fremont Standard Detail for curb, gutter and sidewalk, except where modified herein, or as detailed on the plans.

M. Construction joints shall be made and located generally as indicated on the plans and in a manner so as not to impair the strength of the structure and only at locations as approved by the Engineer.

N. Anchor bolts shall be set into concrete the distance specified by the manufacturer.

3.02 MEASUREMENT AND PAYMENT

A. Payment for "**Concrete Formwork** " is considered to be included in the contract price paid for various concrete items of work that require formwork and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work covered in this section, complete in place as shown on the plans, as required by the Special Provisions, and as required by the Engineer, and no separate payment will be made therefor.

END OF SECTION

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SECTION 03 20 00 CONCRETE REINFORCEMENT

PART 1 GENERAL

1.01 SCOPE

Supply and install all reinforcing steel as shown and called for on the plans, structural drawings and in these special provisions.

1.02 COORDINATION

This Contractor and other trades whose work makes it necessary for them to cooperate, shall coordinate their work so as not to interfere with each other. Interferences between items of various trades shall be resolved before any concrete is poured.

1.03 STORAGE

Reinforcement shall be stored in a manner that will avoid excessive rusting or coating with grease, oil, dirt or other objectionable materials.

1.04 CLEAN-UP

During the progress of the work and at the completion of the work, the Contractor must conform to the requirements of Division 1, General Requirements of these Special Provisions.

PART 2 MATERIALS

2.01 REINFORCING BARS – FLAT WORK AND CURB WORK

A. Reinforcing detailing, fabrication, and placement shall conform to the California Building Code (CBC), "The Manual of Standard Practice of the Concrete Reinforcing Steel Institute" and the "Building Code Requirements for Structural Concrete and Commentary", ACI 318 unless otherwise noted

B. Reinforcing steel shall conform to the following standards:

1. Deformed bars #3 - ASTM A615, Grade 40
2. Deformed bars #4 and larger - ASTM A615, Grade 60

C. Reinforcing fabrication and placing shall conform to the Manual of Standard Practice of the Western Concrete Reinforcing Institute, unless otherwise noted.

D. All reinforcing shall be marked do identification can be made when the final in-place inspection is made. Reinforcing spacing shown are the maximum on center and all reinforcing is continuous, unless noted otherwise.

E. All reinforcing bars shall be corrosion-resistant types at locations in contact with exposed surfaces. Reinforcing shall be clean of rust, grease and other materials likely to impair bond.

F. All reinforcing shall be made cold

G. Supports for reinforcing bars in footings shall be of sufficient strength to adequately support the bars, and shall be of the type approved by the Engineer.

H. Supports or spacers for bars in walls shall be such that exterior face of wall will not be marred when forms are stripped and final finish has been completed.

I. Tie wire shall be No. 16 American Wire Gauge or heavier, black annealed. All reinforcing shall be properly and securely wired and properly supported above grade and away from forms to establish proper clearances.

J. Miscellaneous Reinforcing Accessories: Spacers, chairs, dobies, ties, and other devices necessary for properly placing, spacing, supporting, and fastening reinforcement in place.

2.02 DOWELING

A. Dowels must be #4 deformed bars and comply with ASTM A615, Grade 60

B. Dowels shall be twelve (12”) inches long, #4 deformed bar, spaced twenty-four (24”) inches on center, and extend a minimum of four (4") inches into the existing concrete.

C. Epoxy for doweling shall conform to the provisions in Section 95, "Epoxy," of the 2018 Caltrans Standard Specifications. The Contractor shall prepare the pavement surface prior to application according to the manufacturer’s recommendations.

2.03 EPOXY

A. Epoxy for doweling shall conform to the provisions in Section 95, "Epoxy," of the 2018 Caltrans Standard Specifications.

B. The Contractor shall prepare the pavement surface prior to application according to the manufacturer’s recommendations.

PART 3 EXECUTION

3.01 WORKMANSHIP

A. All work shall comply with the requirements set forth in the “Manual of Standard Practice for Detailing Reinforced Concrete Structures”, published by the American Concrete Institute except where more exacting requirements are specified in the Contract Documents.

B. Bars shall be accurately bent and placed as indicated on the plans.

C. Bars shall be securely fastened and supported so that they may be walked upon without displacement and to prevent movement during placing of concrete.

D. Any construction joints in members added by the Contractor shall be reinforced as directed by the Engineer at no additional expense to the City.

E. Termination and continuation of concrete pours: Concrete pours that are to be terminated longitudinally along a pathway, due to amount of square foot to be poured in a single day, or other reason, shall be formed at the terminal edge where a deep joint is to be placed. The terminal edge shall be a cold joint and be prepared to accept the next concrete pour. Edge shall be tooled as delineated in the plan details, and doweled as described elsewhere herein.

3.02 CONNECTION TO EXISTING CONCRETE AND COLD JOINTS

A. Wherever sidewalk, mow band or curb is removed, the entire section of sidewalk or curb between deep joints shall be removed and replaced. Horizontal dowels for proposed curb, gutter and sidewalk to be tied into existing curb, gutter and sidewalk to connect new work to existing.

B. Where a concrete pour end with the intent to be continued, that cold joint edge shall be tooled and doweled to accept the next concrete pour.

C. Cold joints shall occur where a deep joint was anticipated, based on the spacing outlined in the plans and details for the various sidewalk width, or plaza layouts.

B. Epoxy rebar dowels into drilled holes. Dowels shall be placed prior to placement of new adjacent concrete.

3.03 PLACING REINFORCING STEEL

A. Reinforcement shall be placed in accordance with the details in the drawings.

B. Reinforcement shall be accurately placed and securely tied at intersections with No. 16 gauge black annealed wire. It shall be maintained in proper position by chairs, bar supports, or other approved devices. Bars in footings shall be supported on precast concrete blocks.

C. Bars shall lap 30 diameters at splices. Splices in adjoining horizontal bars shall be staggered at least six feet (6'). Where this is not feasible, submit suggestions for the Engineer's consideration. Horizontal bars shall be hooked around corners not less than 24 diameters, with a minimum of twelve inches (12") as per typical details.

D. Welding of rebar is not permitted unless approved by the Engineer.

E. Concrete protection of reinforcement shall be not less than the following:

F. Three inches (3") where concrete is poured against ground or poured against forms, but may be in contact with ground.

G. Clear distance between bars shall be not less than one and one-half inches (1-1/2") or one and one-half (1-1/2) bar diameters, not less than one and one-third (1-1/3) times the maximum size of coarse aggregate. Wherever conduits, piping, inserts, sleeves, etc. interfere with the placing of reinforcing steel as shown or called for, the Contractor must consult the Engineer and secure from them the method of procedure before pouring any concrete.

3.04 MEASUREMENT AND PAYMENT

Payment for "**Concrete Reinforcement**" is considered to be included in the contract price paid for various concrete items of work that require reinforcement and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work covered in this section, complete in place as shown on the plans, as required by the Special Provisions, and as required by the Engineer, and no separate payment will be made therefor.

END OF SECTION

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SECTION 03 30 00 CAST IN PLACE CONCRETE

PART 1 GENERAL

1.01 SCOPE

A. Supply and install all cast-in-place concrete work as shown on the plans. The work shall include, but shall not necessarily be limited to, the following:

1. 6" over 6" Concrete Paving with aggregate base
2. 12" Concrete Curb
3. Concrete footings for Basketball Standard
4. Add Alternate 1 : Concrete footing for chain link fence

1.02 DOCUMENTS

A. Plans

B. Related Sections

1. Section 03 11 00 "Concrete Formwork"
2. Section 03 20 00 "Concrete Reinforcement
3. Section 31 20 00 "Rough Grading"
4. Section 32 11 23 "Aggregate Base Courses"
5. Section 32 33 00 "Site Furnishings"
6. Section 32 84 00 "Irrigation Modification"
7. "Appendix D, Geotechnical Evaluation Rix Park Basketball Court, by Ninyo and Moore, dated March 31, 2022

C. Caltrans

1. 2018 Standard Specifications, Section 26 "Aggregate Bases"
2. 2018 Standard Specifications, Section 90 "Concrete".

1.03 REFERENCES

A. American Concrete Institute:

1. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials; American Concrete Institute International; 2006.
2. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; American Concrete Institute International; 1991 (Reapproved 2002).
3. ACI 301 – Structural Concrete for Buildings
4. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International; 2000
5. ACI 305 - Hot Weather Concreting.
6. ACI 306 - Cold Weather Concreting.
7. ACI 308R - Guide to Curing Concrete; American Concrete Institute International; 2001.

B. American Society for Testing and Materials:

1. ASTM C 33 - Standard Specification for Concrete Aggregates; 2007.
2. ASTM C 39/C 39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2005.
3. ASTM C 94/C 94M - Standard Specification for Ready-Mixed Concrete; 2007.
4. ASTM C 150 - Standard Specification for Portland Cement; 2007.
5. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete; 2006.
6. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2007
7. ASTM C 494/C 494M - Standard Specification for Chemical Admixtures for Concrete; 2008.
8. ASTM C 618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2005.
9. ASTM C 979 - Standard Specification for Pigments for Integrally Colored Concrete; 2005.
10. ASTM D 994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type); 1998 (Reapproved 2003).

C. California Test (CT)

1. CT 518, Concrete density
2. CT 539, Concrete Compressive Strength
3. CT 540, Test cylinders
4. CT 521, Curing and Test
5. All California Test not listed herein, but defined in the 2015 Standard Specifications related to concrete and minor concrete.

1.04 SUBMITTALS

A. Product Data: For each type of manufactured material and product indicated.

B. Color: Submit product data and manufacturer's instructions for material and product indicated:

1. Color additives.
2. Curing compounds.
3. Form facing materials.
4. Form release agents.
5. Proprietary cleaning agents.
6. Surface retarders.
7. Epoxy Grout

C. Samples:

1. Test Panel: 14 days prior to placement prepare a sample panel at the site, using approved materials. One test panel shall be constructed for each specified concrete mix and finish. Each panel shall be 6-foot x 6-foot square and installed as specified herein. All edge conditions and surface finishes should be included in the mock-up. If the test panel does not meet the specifications contained

herein and in the project details, the panel shall be rebuilt at the Contractor's expense for approval by the Project Landscape Architect before proceeding with the work. Once the test panel has been approved, the contractor shall retain the test panel during construction as the standard for judging the completed work.

2. On the basis of review of the samples, the City Project Landscape Architect may require minor modifications to be made. Upon request, re-submittal may be required at no cost to City.

3. Remove mock-up when directed by City's Authorized Representative.

1.05 QUALITY ASSURANCE

A. Concrete work shall be detailed and constructed in accordance with the guidelines of American Concrete Institute (ACI, 2017 & 2014).

B. Perform work of this section in accordance with ACI 301 and ACI 318.

C. Follow recommendations of ACI 305R when concreting during hot weather.

D. All work shall be accomplished using Caltrans 2018 Standard Specifications as a reference and standard for quality and performance.

E. So-called flat spots or bird baths in the finished surface will not be acceptable. Surfaces must drain and shall not vary more than 1/8 inch in 5 feet on any paved area.

F. Perform work in accordance with ACI 301, Section 6 - Architectural Concrete, and the Standard Specifications as a reference and standard for quality and performance.

G. Conform to ACI 305 during hot weather.

H. Conform to ACI 306 during cold weather.

I. Contraction, construction, and isolation joints shall conform ACI 302 (ACI, 2017).

J. Maintain 3-inch, or thicker, concrete cover over all reinforcing steel where concrete is in contact with soil, in accordance with Section 20.6 of ACI Concrete Institute (ACI) Committee 318 (ACI, 2014).

K. Obtain each material from same source and maintain high degree of consistency in workmanship throughout Project.

L. Installer Qualifications: Concrete work shall be by firm with five (5) year's experience with work of similar scope and quality.

M. Cure time and Concrete Testing: Minimum cure time will be 7 days, minimum, before placement of site furnishings or loading. No work which places stress, tension, or loading on new concrete prior to 7 days. Contractor will proceed at their own risk if work is to occur prior to 7 days cure time.

N. Edge and Joint Conditions, including window paning shall be included in the mock up.

1.06 PRODUCT DELIVERY

A. Weight and delivery certificates for each load of material shall be delivered to the Engineer.

B. The delivery certificates shall state the material by the approved material designation, the weight or volume, the date, time and delivery, vehicle name or number.

1.07 COORDINATION

A. The Contractor shall obtain information and instructions from other trades and suppliers in ample time to schedule and coordinate the installation of items furnished by them to be embedded in concrete under this Section so that provision for their work can be made without delaying the project.

1.08 PROTECTION

A. Protect and prevent damage to adjacent properties and improvements that may be caused by the Contractor's operations.

B. Cutting and/or patching made necessary by failure or delay in complying with these requirements shall be done at no cost to the City.

C. Any damage to the finished pavement surface from subsequent construction activities, shall be repaired to a clean, smooth, true and uniform surface. Existing or new paving which has been damaged due to the Contractor's operations, and which cannot be repaired to the satisfaction of the Engineer, shall be removed and replaced at the direction of the Engineer at the Contractor's own expense before final payment is made.

D. Locate all existing underground utilities including irrigation lines in the areas of work. If existing lines are to remain in place, provide adequate means of protection during construction.

E. Should uncharted or incorrectly charted existing utilities including irrigation lines be encountered during construction, consult the Engineer immediately for directions as to procedure. Cooperate with City and utility companies in keeping respective services and facilities in operation. Repair damaged utilities or irrigation lines to the satisfaction of the City or utility owner.

F. Do not interrupt existing utilities including irrigation lines serving facilities occupied and used by the City or others except when permitted in writing by the Engineer, and then only after acceptable temporary utility service or irrigation lines have been provided.

1.09 LAYOUT OF WORK

Refer to Section 01 00 00, "Supplemental to the General Conditions", for information regarding layout of work.

1.10 TOLERANCES

A. Over-excavating beyond the established excavation lines done for the Contractor's convenience shall be backfilled at the Contractor's expense.

Grade to a tolerance of plus or minus one tenth (0.1) of a foot under paved areas.

1.11 TESTS AND INSPECTIONS

A. Cylinder tests and inspections shall be performed by the City's independent testing firm for structural footing concrete only.

B. Furnish all material for test cylinders and any other samples the Engineer requires for analysis of concrete work. Give Engineer adequate notice prior to any anticipated pour.

C. Portland cement concrete is designated by class based on 28-day compressive strengths (when tested in accordance with ASTM C39, as specified herein.

D. Cement content to be verified by California Test 518.

1.12 DISPOSAL

All materials removed shall be disposed of in accordance with Article 15, Section 01 74 19 “Construction and Demolition Debris Management”.

1.13 CLEAN-UP

During the progress of the work and at the completion of the work, the Contractor must conform to the requirements of Division 1, General Requirements of these Special Provisions.

PART 2 MATERIAL

2.01 CONCRETE MIXES

A. The following shall apply to all pedestrian concrete paving, concrete curbs, irrigation thrust blocks, and concrete footings for basketball standard and chain link fence (Add Alternate 1).

B. All underground concrete, including all footings and thrust blocks, shall meet the requirements herein, except no lamp black will be required if the footings are held short of finished grade or finished surface. If flush with finished surface, finish shall match adjacent finishes, and lamp black will be included.

C. General: All concrete, unless otherwise specifically permitted by the Engineer, shall be ready mixed in accordance with ASTM C94.

D. Cement: Portland cement shall be Type II/V or Type V cement, with a water-to-cement ratio of no more than 0.50, with a minimum 28-day compressive strength of 2,500 psi, in conformance with Section 90 “Portland Cement Concrete” of the Standard Specifications , 2018 Edition, and shall have a minimum slump of 3” inches (3”) and maximum slump of 4 inches (4”) and a maximum aggregate size of 3/4 inch (3/4”).

E. Concrete shall be Class II concrete and may contain 15% to 40% flyash (Type IP (MS) Modified).

F. Mix shall contain 1 lbs of lamp black per cubic yard, unless otherwise indicated.

G. Cement: Portland cement shall be the product of one manufacturer.

H. Aggregate: Normal weight shall comply with ASTM C33.

I. General: All concrete, unless otherwise specifically permitted by the Engineer, shall be ready mixed in accordance with ASTM C94.

J. Cement: Portland cement shall conform to ASTM C150, Type II Modified, and shall be the product of one manufacturer.

K. Aggregate: Normal weight shall comply with ASTM C33.

L. Water: Potable, clean and free from deleterious matter.

M. Contractor is required to replace existing markings or letters or install new markings or letters on face of curb to identify existing utility service locations.

2.02 PROPORTIONING AND DESIGN OF MIXES

A. Submit concrete mix design for City Engineer’s approval prior to pouring of any concrete.

B. Produce concrete of required consistency and strength which will present an appearance satisfactory to the City Engineer. Color of all exposed concrete shall match color of adjacent existing concrete when dry.

2.03 CONCRETE REINFORCEMENT

A. Concrete reinforcement shall conform to the requirements of Section 03 20 00 “Concrete Reinforcing” of these Special Provisions.

2.04 DOWELING

A. Refer to Section 03 20 00 “Concrete Reinforcement”

2.05 EPOXY GROUT

A. Epoxy shall conform to the provisions in Section 95, "Epoxy," of the Standard Specifications. The Contractor shall prepare the pavement surface prior to application according to the manufacturer’s recommendations.

B. Non-Shrink Grout: Master Builders “Embeco,” Grace “Vibrofoil,” Hallemite “PorRok,” or approved equal.

C. Grout Color: Shall match adjoin walkway.

2.06 CURING COMPOUND

A. Curing compound shall comply with ASTM C309.

B. Provide W-1000 Clear Cure & Seal manufactured by Davis Colors, or approved equal.

2.07 FORMS

A. Refer to Section 03 11 00, “Concrete Formwork”.

B. Form Facing Material:

1. Provide non-porous surface such as steel, plastic, or high-density overlaid plywood with watertight joint seals to prevent leakage.

C. Form Ties: Fiberglass rods tinted to match concrete.

D. Form Release: Burke Form Sealer, or approved equal

2.08 EXPANSION FELT, JOINT CAPS AND BACKER ROD

A. At all transitions from new flat concrete work to existing flatwork, place 3/8” expansion felt in the cold joint between the new and existing pours.

B. Top of the expansion felt shall be capped with a zip strip or equal, backer rod and caulk.

C. Pre-molded strips, non-extruding and resilient bituminous type, 3/8” thick joint filler for concrete conforming to ASTM D1751, unless otherwise noted on the plans ad shall conform the Section 51 “Concrete Structures” of the 2018 Standard Specifications.

D. Expansion Joint material shall be 3/8” asphalt impregnated compressible filler material per ASTM D-994, or approved equal.

E. Expansion Joint Cap: A 3/8” polystyrene expansion cap with a removable top, VoidCap, Zip Strip, or approved equal, can be placed over all types of expansion joint. Constructed of Heavy-duty PVC with UV inhibitors that shield the cap from the damaging ultra-violet (UV) rays from the sun.

F. Backer Rod: 1/4” – 3/8” closed cell, highly flexible, polyethylene foam placed in the void of the expansion joint cap. Backer rod by Grainger, HPI Products Corporation, or approved equal.

2.09 CONCRETE JOINT SEALANT

A. Sealant, where specified or shown in the plans, shall be installed on all concrete joints, both vertical and horizontal and shall be gun-grade silicone, or approved equal; suitable to form a dry water barrier. Color to match mortar joints.

B. Product shall be a premium-grade, high-performance, moisture-cured, 1-component, polyurethane-based, non-sag elastomeric sealant. Meets Federal specification TT-S-00230C, Type II, Class A. Meets ASTM C-920, Type S, Grade NS, Class 25; Sikaflex 1a, or approved equal.

C. Sika colors, or approved equal, shall be submitted for review and approval before application.

D. When utility boxes are within colored fields, joints shall be sealed with the noted color above for the specific concrete color.

E. Joint sealant shall not be used on the City Sidewalk in the public right of way.

2.10 AGGREGATE BASE

A. Refer to Section 32 11 23 “Aggregate Base Course” for information.

PART 3 EXECUTION

3.01 ROUGH GRADING AND EXCAVATION

A. Refer to Section 31 20 00 “Rough Grading”.

B. All areas shall be excavated to the depths delineated on the plans to accommodate aggregate base or post footings. Footings to be poured “neat” and held below finished surfacing whether concrete paving or asphalt. Slope top of footings to grade, minimum 1%.

C. Subgrade Compaction: Subgrade soils should be moisture conditioned over optimum and compacted to a minimum of 90 percent relative compaction in the top 6 inches of subgrade. Refer to Section 31 20 00 “Rough Grading” and geotechnical recommendations.

D. Rough grading and excavation to establish subgrade for concrete work shall be done as delineated in the plans and details related to concrete placement, and shall be paid for per the line items defined herein under “Measurement and Payment”.

3.02 DOWELED CONNECTION TO EXISTING CONCRETE

A. Refer to Section 03 20 00 “Concrete Reinforcement”.

3.03 REINFORCING BARS

A. Refer to Section 03 20 00 “Concrete Reinforcement”

3.04 AGGREGATE BASE

A. Refer to Section 32 11 23 “Aggregate Base Courses”

3.05 CONCRETE MIXING

A. Concrete shall be mixed and delivered to the site in conformance with Section 90 of the Standard Specifications.

B. All concrete shall be kept continuously agitated until discharged into the hopper at the job site.

3.06 CONVEYING AND PLACING CONCRETE

A. All pipes, sleeves, anchors and bolts, angle frames, inserts, supports, ties and other materials in connection with concrete construction shall be placed and secured in position before the concrete is placed.

B. For reinforcement and doweling, refer to Section 03 20 00 “Concrete Reinforcement”.

C. Before placing concrete, mixing and conveying equipment shall be wet cleaned, the forms and space to be occupied by concrete shall be thoroughly cleaned, and the forms shall be wetted. Ground water shall be removed until the completion of the work.

D. No concrete shall be placed in any unit of work until all formwork has been completely constructed, all reinforcement has been secured in place, all items to be built into concrete are in place, and form ties at construction joints tightened.

E. Concrete placement, once started, shall be carried on as a continuous operation until the section of approved size and shape is completed. Pour cut-offs must be of approved detail and location.

F. Concrete shall be handled as rapidly as practicable from the mixer to the place of final deposit by methods which prevent the separation or loss of ingredients. It shall be deposited as nearly as practicable, in its final position to avoid re-handling or flowing. Concrete shall not be dropped freely where reinforcing bars will cause segregation, nor shall be dropped freely more than six feet (6'). Concrete shall be deposited to maintain a plastic surface approximately horizontal.

G. Concrete that has partially hardened shall not be deposited in the work.

H. All concrete shall be thoroughly and properly compacted using approved mechanical vibrators.

I. Internal vibration must be by direct action in the concrete. Each pour shall be vibrated until the water shows indications of rising, but not until the water has risen.

J. Along the faces of the forms, suitable tools shall be used during the pour to force large particles away from the forms and bring mortar to the surface of the forms. The responsibility for providing fully filled out, smooth, clean and properly aligned surfaces free from objectionable pockets and blemishes shall rest entirely with the Contractor.

3.07 CONCRETE PAVING FINISHES AND EDGES

A. Concrete Paving and curbs: **Medium Broom Finish** - Medium hair broom, non-slip finish. Brooming shall be perpendicular to the path of travel and so executed that the corrugations thus produced will be uniform in character and width. Edges of concrete paving shall have a 6 inch wide smooth trowelled finish around all edges and along deep joints.

B. All flange marks resulting from tooling of edges shall be trowelled out and designated finish shall continue in its entirety to the beginning of the radius at the edge of the concrete.

C. If flange marks remain after concrete has set, all joints and edges shall be ground smooth.

D. Concrete flatwork shall be constructed with medium broom finish unless otherwise indicated on the plans. Surfaces shall be troweled smooth then given a transverse scored texture by drawing a hair broom across the surface. The operation shall follow immediately after the first steel troweling and while the surface is still sufficiently soft to be marked by the broom. The texturing shall be run in a continuous motion from edge to edge or joint to joint.

E. Thickened Edges: Shall be placed where indicated on the drawings, and shall be included and paid for as part of “concrete paving”.

3.08 PEDESTRIAN CONCRETE PAVING and 12” WIDE CONCRETE CURB

A. Curb and concrete paving shall conform to section 2.01 Concrete Mixes.

3.09 DEEP JOINTS

A. Location and detail of deep joints shall be as indicated on the plans, or as specified, and shall be installed to 1/4 depth of the slabs or thickness of curbs and gutters, unless otherwise noted.

B. Deep Joints shall be tooled with a radius edging tool, per the detail requirements.

C. At the Project Inspector’s discretion, with consultation with the Project Landscape Architect, deep joint locations may be relocated in the field in order to control cracking.

D. The contractor shall also suggest changes to deep joint locations in order to control cracking. These changes must be suggested 1 week prior to pouring concrete in order to allow the Project Inspector and Project Landscape Architect time to evaluate and approve the proposed changes.

E. Concrete paving shall have deep joints placed minimum every 10 feet, unless otherwise stated, and score joints between deep joints

F. 12” wide concrete curb: Shall have deep joints placed a minimum of 4 feet on center.

G. Deep joints that do not meet the appropriate 1/4 depth of the slabs or thickness of curbs and gutters, due to insufficient tools, poor workmanship, or other method, will result in the removal and replacement of all concrete deemed unacceptable by the Project Landscape Architect or Project Inspector. See “Workmanship” herein.

3.10 PROTECTION AND CURING

A. If the Contractor elects to use the curing compound method for curing concrete, the curing compound shall be as specified in Section 90 "Curing Compound Method," of the 2018 Standard Specifications. The curing compound shall be applied in a manner that will provide a complete coating of all exposed faces of the concrete surface.

B. Concrete shall be protected from injurious action of the elements and defacement of any nature during construction operations. Watchmen will be required at such times as required until concrete has set for a period of ten (10) hours. Damage resulting from the vandalism may require removal and replacement of complete units of work at no cost to the City.

C. All forms shall be kept sufficiently wet to prevent drying out of the concrete.

D. All concrete surfaces shall be cured in conformance with the Standard Specifications after concrete is deposited.

E. Slabs and exposed corners of concrete shall be protected from traffic or use which will damage them in any way.

F. Maintain concrete between 65° and 85°F (18° to 29°C) during curing.

G. Apply per manufacturer’s recommendations after all bleed water and surface sheen has evaporated, finishing has been completed and concrete has achieved initial set.

H. Apply to surfaces that are dry or damp, but not wet

I. Protect surrounding structures from overspray.

J. Apply when ambient and surface temperature is above 45°F (7°C) and expected to remain above that for at least 12 hours.

K. Apply with an airless or pump sprayer that is free of any resin, oil or solvent residue.

L. Use sprayer on lightest setting for maximum atomization of spray. Ordinary pump canister sprayers for garden or construction use will NOT atomize adequately. Use canister sprayers designed for application of wood finishes or form release agents with the smallest available flat fan spray tip (.10) to (.30 GPM).

M. Apply a thin coat uniformly over the surface. Fog lightly over sloped surfaces or impressions to prevent runs and streaks

N. Do not allow sprayer to spit or sputter. Unclog nozzle and re-pressurize before continuing.

O. If clogging continues, empty sprayer back into jug. Clean and flush sprayer with hot water. Then pour sealer through fine strainer or cheesecloth when refilling sprayer.

P. Allow 24 hours to dry completely after application is complete.

Q. If efflourescence appears, it will be the contractor's responsibility to contact the concrete supplier, or Davis color representative, to determine the best method for cleaning the concrete surface. Potential surface treatment chemicals are SuperBlue, by EZChemUSA, P.O. Box 1485 • Canton, GA 30169 • (T)770-479-1764 • www.ezchemusa.com

3.11 PATCHING AND CLEANING

A. After forms are removed, the Engineer shall inspect all concrete surfaces. All surface defects, including projecting fins, bolts, form ties, nails, etc., not necessary for the work, shall be removed or cut back one inch (1") from the surface, and joint marks and fins in exposed work shall be smoothed off and cleaned as directed and to the satisfaction of the Engineer.

B. Use the same patching materials and techniques that were approved on test panel.

C. Clean exposed concrete surfaces and adjoining work stained by the leakage of concrete to meet the approval of the Engineer.

D. Efflorescence: Remove efflorescence as part of final cleaning.

E. Use least aggressive cleaning techniques possible.

F. Wear protective eye wear, gloves, and clothing suitable to work and as required by cleaner manufacturer.

G. If proprietary cleaning agents are used, test cleaning agent on a small, inconspicuous area, and check effects prior to proceeding. Begin cleaning and wash from edge to edge. Thoroughly rinse afterwards with clean water. Follow cleaner manufacturer's instructions.

H. Do not use muriatic acid (hydrochloric) acid on colored concrete.

3.12 TOLERANCES

A. All concrete work shall be water tested in the presence of the Project Inspector or Project Engineer before final acceptance to ensure there will be no ponding water and the surfaces drain adequately.

B. Minor variations in appearance of colored concrete, which are similar to natural variations in color and appearance of uncolored concrete, are acceptable.

C. As with any natural material, some variation in appearance is a normal design feature of concrete, whether colored or not. It is normal for the color of concrete to lighten as it cures; allow up to 28 days for process to occur.

3.13 WORKMANSHIP

A. Concrete shall be constructed on a graded and prepared subgrade and rock base as shown on the plans and as specified in these Special Provisions and in accordance with Caltrans 2015 Standard Specifications except that references to measurement and payment shall not be applicable to this work.

B. The concrete work shall conform to the requirements of Division XI "Materials" of these Special Provisions and the 2018 Standard Specifications.

C. Defective Work: Remove and replace (R&R), when directed by the Engineer, all surfaces which show excessive shrinkage cracks, spalling, or other defects in workmanship.

1. Refer to City Standard SD-09 for additional guidelines for repair. Where discrepancies arise contact City Engineer for resolution.

3.14 MEASUREMENT AND PAYMENT

A. The contract linear foot price paid for **"12"x12" Concrete Curb"** shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work covered in this section, including, formwork and reinforcement, complete in place as shown on the plans, as required by the Special Provisions, and as required by the City's Engineer or their designee.

B. The contract square foot price paid for "**6" over 6" Pedestrian Concrete Paving with AB**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work covered in this section, including, formwork and reinforcement, utility box elevation adjustments, complete in place as shown on the plans, as required by the Special Provisions, and as required by the City's Engineer or their designee.

C. Concrete footings for the basketball stanchion and all other elements with in-ground footings, is considered included in the contract unit price paid for those various items and no additional price will be paid therefor.

D. Add Alternate 1 -- Concrete footings for 6' and 9' Chain link fence is considered included in the contract unit price paid for those various items and no additional price will be paid therefor.

END OF SECTION

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DIVISION 31 - EARTHWORK

SECTION 31 11 00 CLEARING AND GRUBBING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This WORK consists of clearing, grubbing, removing, and disposing of vegetation and debris within the limits of the PROJECT site as shown on the DRAWINGS and as required by the WORK. Vegetation and objects designated to remain shall be preserved free from injury or defacement.

B. Disposal of vegetation per an approved recycling facility per Section 01 50 50.

1.02 RELATED SECTIONS

A. These special provisions are part of the plans and shall include all labor, materials, equipment, reasonable incidentals, and services necessary to the execution of the work.

B. Refer to all other sections, determine the extent and character of related work, and coordinate all work to produce a complete, properly constructed product.

C. Related Sections

1. Section 01 56 39 “Tree Protection”
2. Section 01 57 19 “Temporary Environmental Controls”
3. Section 01 74 19 “Construction and Demolition Debris Management”
4. Section 02 41 13 “Site Demolition”

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.01 GENERAL

A. The City will designate all trees, shrubs, plants, and other objects to remain. Any object that is designated to remain and is damaged shall be repaired or replaced as directed by the City Engineer, at Contractor’s expense.

B. No material or debris shall be disposed of within the Project limits.

3.02 CLEARING AND GRUBBING - CONSTRUCTION

A. Clearing and grubbing shall extend as designated on the Drawings.

B. All surface objects not designated to remain shall be cleared and grubbed, including mowing, as required.

C. Undisturbed roots and nonperishable solid objects located two (2) feet or more below subgrade may remain in place.

D. CONTRACTOR shall scalp the areas within the excavation or embankment grading limits. Scalping shall include the removal from the ground surface of vegetation matter.

E. Except in areas to be excavated, all holes resulting from the removal of obstructions shall be backfilled with suitable material and compacted in accordance with Section 31 20 00, “Rough Grading”.

3.03 CLEARING AND GRUBBING - REMOVE SOD

A. Mow all existing turf areas to a height of 1” and remove cuttings.

B. Prior to site clearing, all existing vegetation (below twelve inches (12") in height) and turf areas to be removed shall be sprayed with a non-selective broad spectrum systemic herbicide for perennial vegetation and straight contact herbicide for annual vegetation in accordance with a licensed pest control advisor or herbicide manufacturers recommendations.

C. Do not spray within the drip line of existing trees to remain and be protected.

D. Allow a sufficient period of time to ensure that all sprayed vegetation is dead (refer to manufacturer's recommendations).

E. For proposed non-planted areas, clear and strip vegetative material from soil surface and remove organic soil. Stripping shall be done to the depth required to remove all loose and organic laden surficial soils in the lawn area to accommodate rough grading to achieve subgrade, and any structural import fill.

F. Minimum depth of sod removal is approximately 4” to bottom of root zone. If significant amounts of organics are encountered below this depth, additional stripping may be required.

G. Within the drip line if trees that are to remain and be preserved, sod shall be removed by hand, so to limit damage to the root zone. The contractor shall diligently remove sod in these areas and ensure that all roots over 1 inch in diameter are preserved. Avoid cutting scarring and cutting roots to the greatest extent possible.

H. If roots are encountered and requiring cutting, the contractor shall excavate to the best of their ability to expose roots that interfere with sod removal and call the City Arborist for further direction regarding root cutting.

I. Contractor is responsible for stockpiling and protecting all topsoil needed for landscaping improvements. Stripped soil may be stockpiled for re-use on site in the areas designated for future lawn and planting. Soil that cannot be used as native fill shall be off-hauled and disposed of as described herein.

3.04 MEASUREMENT AND PAYMENT

A. The contract square foot price for **“Clearing and Grubbing”** shall include full compensation for furnishing all labor, materials, legal disposal, tools, equipment, and incidentals and for doing all work involved, complete in place as shown on the plans, as required by these Special Provisions, and as directed by the City Engineer or his designee.

END OF SECTION

SECTION 31 20 00 ROUGH GRADING

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. Provide all labor, materials, power tools, transportation, services and equipment necessary for completion of rough grading to establish all subgrade to accept future aggregate base, or aggregate subbase and finished contouring to finished grades in areas that will not receive future aggregate base or aggregate subbase. Work shall include:

1. On-site clearing and grubbing and excavations, including removal of sod, organics and native soil where required to establish new surface grades and positive drainage, to all conforms.
2. Rough grading and excavation shall include, but not limited to:
    a. Asphalt Paving: Excavation to a minimum of 12-inch depth to attain proposed subgrade in order to accept placement of low expansion clean fill, aggregate base, and asphalt paving.
    b. Concrete Paving and Concrete Curb: Excavation to a minimum of 12-inch depth to attain proposed subgrade in order to accept placement of low expansion clean fill, aggregate base, and concrete paving and curb.
3. Excavation to depth as required for structural footings.
4. Subgrade preparation within the project site to accept imported materials.
5. Excavation and transportation, placement and compaction of onsite and import soils, as needed, to establish all subgrade, mounding and finished contouring.
6. Off-haul and dispose all excess excavated material at an approved off-site facility

1.02 RELATED DOCUMENTS AND SECTIONS

A. These special provisions are part of the plans and shall include all labor, materials, equipment, reasonable incidental, and services necessary to the execution of the work.

B. Refer to all other sections, determine the extent and character of related work, and coordinate all work to produce a complete, properly constructed product.

C. This section is complete in its entirety and is not supplemental to the standard specifications for Caltrans except where specifically noted.

D. Related Sections:

1. Section 01 72 40 “Conformance Survey”
2. Section 03 11 00 “Concrete Formwork”
3. Section 03 30 00 “Cast in Place Concrete”
4. Section 31 11 00 “Clearing and Grubbing”
5. Section 32 11 23 “Aggregate Base Course”
6. Section 32 92 13 “Soil Preparation and Soil Amendment”
7. Section 32 92 23 “Sod”
8. Section 32 12 16 “Asphalt Paving and Surfacing”

E. Appendix C – City of Fremont, Potholing Report, Exaro Technologies Corporation, dated 3/3/2022.

F. Appendix D – Geotechnical Evaluation Rix Park Basketball Court, Ninyo and Moore, dated, March 31, 2022

G. Appendix E - Soil Sampling Results – Rix park Basketball Court Installation Project, TRC, dated May 26, 2022.

1.03 REFERENCE STANDARDS

A. ASTM

1. ASTM D422 - 63(2007) Standard Test Method for Particle-Size Analysis of Soils.
2. ASTM D4318 - 17e1 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
3. ASTM D4829 - 19 Standard Test Method for Expansion Index of Soils
4. ASTM D 1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN m/m3)); 2012e1.
5. ASTM D 2922 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth); 2017a.

1.04 DEFINITIONS

A. Excavation: Removal of material encountered above subgrade elevations.

1. Authorized Over-Excavation: Excavation below subgrade elevations or beyond indicated horizontal dimensions as shown on plans or authorized by the Geotechnical Consultant.
2. Unauthorized Over-Excavation: Excavation below subgrade elevations or beyond indicated horizontal dimensions without authorization by the Geotechnical Consultant. Unauthorized excavation shall be without additional compensation.

B. Geotechnical Testing Agency: An independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock definition testing, as documented according to ASTM D 3740 and ASTM E 548.

C. Structural Backfill: Soil materials approved by the Geotechnical Consultant and used to fill excavations resulting from removal of existing below grade facilities, including trees.

D. Structural Fill: Soil materials approved by the Geotechnical Consultant and used to raise existing grades with observation and testing conducted by the Geotechnical Consultant or testing agency during grading operations.

E. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, base or topsoil materials.

F. Unsuitable Material: Any soil material that is not suitable for a specific use on the Project. The Geotechnical Consultant will determine if a soil material is unsuitable.

1.05 SUBMITTALS

A. Procedures: In accordance with Section 01 30 00 “Submittal Procedures”.

B. Materials data: Submit complete materials list of soils, including source, and quantity.

C. Requests for substitutions shall comply with Section 01 30 00 “Submittals”.

D. Samples:

1. Provide materials from same source throughout work. Change of source requires approval of the City Engineer.

E. Material Test Reports: Provide, from a qualified testing agency, the following test results showing compliance with the project requirements:

1. Classification according to ASTM D 2487 of each onsite or borrow soil material proposed for fill and backfill.

2. Laboratory test report with Atterberg Limits, Expansion Index and gradation for soils to be used as low expansion fill below concrete flatwork.

F. Submit the following items, and other items as may be required by the Project Landscape Architect and obtain written approval prior to delivery of materials to the site. Finished work shall match approved samples.

1. Soil Testing Report(s) for to determine quality of soil to accept planting and requirements for amending borrow soil in landscape areas.

2. Material samples: 5 lb sample of each type of material; submit in air-tight containers to the testing laboratory.

3. Clean/Engineered Fill

1.06 INSPECTIONS

A. The City, the Geotechnical Consultant, or the Special Inspection firm, hired by the City, shall perform compaction testing and related testing on the subgrade, fill soils (both native and import), and aggregate subbase and base.

B. Right of inspection by the City Inspector for acceptance or rejection is reserved at/on the Jobsite at any time upon delivery or during the work.

C. Contractor shall notify City Inspector in writing a minimum of 5 Working Days in advance of inspections.

1.07 PROJECT QUALITY

A. Perform all work to the highest standard of quality. All work is subject to the acceptance of the City Inspector. Work that is deemed unacceptable or defective by the City Inspector shall be removed by the Contractor immediately and replaced with work that is acceptable to the City Inspector.

1.08 PROJECT CONDITIONS

A. Existing Conditions:

1. General: Exercise caution against injury to, or defacement of, existing conditions. At Contractor's expense, repair or replace items damaged from installation operations.

1.09 SCHEDULING

A. General: Prior to starting work, coordinate work with other trades to insure proper sequencing of construction.

1.10 QUALITY ASSURANCE

A. Agricultural Testing shall be done by a reputable laboratory for soil and plant disease diagnosis and analysis, with a minimum of 5 years' experience.

B. Agricultural Testing laboratory: Recognized laboratory for soil and plant disease analysis for ornamental horticulture, approved by City Project Landscape Architect.

C. Acceptable laboratory:

1. Wallace Laboratories, El Segundo, CA, www.wlabs.com, 310-615-0116
2. Waypoint Analytical, Anaheim, CA, www.waypointanalytical,com, (714) 282-8777

D. Provide an independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock definition testing, as documented according to ASTM D 3740 and ASTM E 548.

E. Conform all work and materials to the recommendations or requirements of the Geotechnical Report and meet the approval of the Geotechnical Consultant.

F. 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.

G. Perform excavation, filling, compaction and related earthwork under the observation of City Inspector. Materials placed without approval of the City Engineer or City Inspector will be presumed to be defective and shall be removed and replaced at no cost to the City. Notify the City Inspector at least 24-hours prior to commencement of earthwork and at least 48 hours prior to testing.

H. The City Inspector or their designee will perform observations and tests required to enable him to form an opinion of the acceptability of the Project earthwork. Correct earthwork that, in the opinion of the City Inspector, shall meet the requirements of these Technical Specifications and the Geotechnical Report.

I. Upon completion of the construction work, certify that all compacted fills are in place at the correct locations, and have been constructed in accordance with sound construction practice. In addition, certify that the materials used are of the types, quality and quantity required by these Technical Specifications and the Geotechnical Report. The Contractor shall be responsible for the stability of all fills and backfills constructed by his forces and shall replace portions that in the opinion of the Geotechnical Consultant have been displaced or are otherwise unsatisfactory due to the Contractor's operations.

J. Finish subgrade tolerance at completion of grading:

K. Allowable Tolerances: Grading under this section shall be to a tolerance as follows:

1. Concrete and asphalt flatwork, gravel surfaced and paved areas ± 0.05 feet.
2. Subgrade under Turf: Refer to Section 01 72 40 Conformance Surveying.
3. Areas 4:1 and Flatter: Plus or minus one-tenth of a foot (0.1'). However, the average grade over any one 50 foot square or 50 foot lineal feet of paving shall not vary more than 0.05' from the average grade shown on the drawings.
4. Slopes Steeper than 4:1: Plus or minus 0.5'.

PART 2 - PRODUCTS

2.01 CLEAN NATIVE EXCAVATED AND STOCKPILED MATERIAL

A. On-site native material excavated during trenching, rough grading, or other activity, and stockpiled on site prior to disposal, may be used as backfill for all subgrade voids and irrigation trenches in landscape areas.

B. Material shall be free of debris, organics and other deleterious material, perishable material, rubble, and building debris.

C. Excavated on-site native soil material shall be used only to establish proposed rough subgrade, backfill voids and fill irrigation trenches and in areas for planting, including at demolished basketball court.

2.02 FILL MATERIAL REQUIREMENT

A. The recommended physical properties of soils to be used as general fill included in the recommendation to comply with either No. 1 or No. 2 below

1. General Fill: On-site or similar import soils are considered suitable for use as fill in areas where low expansion fill is not specifically specified, including but not limited to asphalt paving and concrete flatwork, paver, gravel surfaced and paved areas, provided the materials are placed in accordance with Geotechnical Recommendations. Highly expansive soils shall not be used as low expansion select structural fill or used as backfill for trenches located within hardscape areas.

2. Clean/Engineered Fill

a. Close-graded with a minimum of 35 percent passing No. 4 sieve and either,

b. Plasticity Index of 15 or less, or

c. Expansion Index of 50 or less, or

d. Granular soil with less than 10 percent, by dry weight, passing No. 200 sieve.

B. Clean/Engineered Fill shall be imported and placed under all concrete flat work, asphalt basketball courts, on subgrade, as part of the structural sections for the noted surfaces.

C. Materials can be obtained from Stevens Creek Quarry, Sunol Quarry or other facility

Sieve:

Sieve	Percentage Passing
2”	100
1.5”	98.2
1”	82.4
¾”	71.5
½”	58.1
3/8”	50.4
#4	35
#10	25.3
#30	20.1
#40	19.6
#50	19.2
#100	18.3
#200	14

PART 3 – EXECUTION

3.01 GENERAL

A. Prior to the work of this section, verify existing subgrade and inspect the work of other trades. Verify that all such work is complete to the point where rough grading may properly commence.

B. In the event of discrepancy, immediately notify the Engineer in writing. Do not proceed with rough grading until all discrepancies have been resolved or take responsibility of condition of site at no additional expense to the City.

C. Conform with these specifications and the recommendations presented in the Geotechnical Evaluation report for the project. In the case of conflicts these specifications shall take precedence.

3.02 LINES AND LEVELS

A. Check all points of horizontal and vertical control before any work is commenced; also check all lines and levels on the drawings. Should any discrepancies be found on the drawings or in the marks established at the site, immediately notify the Project Inspector and the Project Landscape Architect in writing so that proper adjustment may be made. The Project Inspector and the Project Landscape Architect reserve the right to make such minor adjustments in the field as necessary to accomplish the true intent of the drawings and Specifications.

B. Top of subgrade elevations shall be verified using laser-operation survey instruments. Grades at each point must be within ½ -inch plus or minus from the elevations shown on the plans. In addition, no two adjacent points within the grid shall cumulatively deviate more than ¾-inch (0.06 feet) from the respective points' design grades

C. All subgrade slopes shown on the drawings shall be completed and verified by the contractor through a conformance survey, to be reviewed and accepted by the City. The Contractor shall submit the verified grades to the City for review and approval before commencing with subsequent work items. If the methods of verification by the contractor are not acceptable by the City, and the City therefore finds it necessary to field verify the grades, the contractor will be charged accordingly.

D. Refer to Section 01 72 40 "Conformance Surveying"

E. Finish grades shown on drawings are given in feet and decimals of feet and are to be the top of all graded or paved surfaces. Slope uniformly between given spot elevations unless otherwise indicated.

F. Transition between slopes and relatively flat areas shall be rounded and gradual.

3.03 CONSTRUCTION SURVEYING, STAKING AND CONFORMANCE SURVEYING

A. Refer to Section 01 72 40 "Conformance Surveying" for additional information.

3.04 DUST PALLIATION AND SPILLAGE

A. All necessary precautions, including watering, shall be taken to control air-borne dust to within reasonable limits in accordance with Section 01 00 00 "Supplemental to the General Conditions" of these Specifications.

B. If serious problems and/or complaints arise due to airborne dust, and when directed by the City Project Engineer, operations causing such problems shall be temporarily discontinued at no cost to the City.

C. The contractor shall prevent spillage when hauling on or adjacent to any Public Street or highway. In the event that spillage occurs, the contractor shall immediately

remove all spillage, sweep and clean such streets in accordance with City, County, and State, and other governing regulatory requirements.

3.05 SITE PREPARATION

A. Site preparation should begin with the clearing and grubbing of all vegetation, utility lines, debris and other deleterious materials from the areas to be graded and accept borrow soils.

B. Rubble and excavated material that do not meet criteria for use as fill should be disposed of in an appropriate landfill. Exiting utilizes to be abandoned should be removed, crushed in place or backfilled with grout.

C. Rubble and excavated material that do not meet criteria for use as fill should be disposed of in an appropriate landfill. Existing utilities in the work area should be relocated away from the proposed structure.

3.06 OBSERVATION AND REMOVALS

A. Unsuitable materials will be considered dry, loose, soft, wet, expansive, organic, or compressible natural soil, and undocumented or otherwise deleterious fill materials. Unsuitable materials should be removed from trench bottoms and below bearing surfaces to a depth at which suitable foundation subgrade, is exposed

3.07 CONTROL OF WATER AND DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding the site and surrounding area. Provide dewatering equipment necessary to drain and keep excavations and site free from water.

B. Protect subgrades from softening, undermining, washout and damage by rain or water accumulation.

C. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations.

3.08 SUBGRADE PREPARATION AT CONCRETE PAVING AND BASKETBALL COURT

A. Excavate earth to lines and grades shown on drawings and to the dimensions indicated on the Plans, required herein, or as required allow for placement of required low expansion fill and aggregate base for the new basketball court and pedestrian concrete.

B. Remove and dispose of large rocks, pieces of concrete and other obstructions encountered during excavation.

C. Subgrade Preparation: Prior to backfilling depressions created by the removal of old foundations and utility lines, or placement of fill, scarify the exposed surface to an approximate depth of 8 inches and uniformly moisture condition the scarified surfaces to a moisture content that is at least 2 percent over optimum for low expansion soils and 3 to 7% over optimum for moderate and high expansion soils. Compact the scarified surfaces to a minimum of 90 percent relative compaction for low expansion soils and 87 to 92 percent for moderate and high expansion soils as determined by the Geotechnical Consultant.

D. Prepared subgrade should be maintained in a moist, but not saturated, condition by periodic sprinkling of water prior to placement of additional overlaying fill. Moisture condition to between 3% and 7% above optimum.

E. Subgrade that has been permitted to dry out and loosen or develop desiccation cracking, should be scarified, moisture conditioned and re-compacted.

F. After stockpiled material has been placed, the same steps shall be followed in "Subgrade Preparation" to rip and moisture condition the surface prior to placing the borrow soils.

3.09 COMPACTION REQUIREMENTS FOR STOCKPILED MATERIALS, CLEAN NATIVE FILL AND AGGREGATE BASE PLACEMENT AT DEMOLISHED BASKETBALL COURT:

A. Fill and backfill should be compacted in conformance with the Table below.

B. The allowable un-compacted thickness of each lift of fill depends on the type of compaction requirement utilized by generally should not exceed 8 inches in loose thickness.

C. Compacted fill should be maintained in a moist, but not saturated, condition by the periodic Fill that has been permitted to dry out and loosen or develop desiccation cracking, should be scarified, moisture conditioned and recompacted, as per the requirements herein.

Fill Placement and Compaction

Fill Type	Location	Relative Compaction[1]	Moisture Content relative to optimum[2]
Subgrade	Flatwork, or fill and in locations not already specified	90 percent	+2 percent or above
General Fill	In locations not already specified	90 percent	+2 percent or above
Aggregate Base	Below hardscape and pavement	95 percent	Near Optimum

Notes:

1 Expressed as percent relative compaction or ratio of field density to reference density (typically on a dry density basis for soil and aggregate). The reference density of soil and aggregate should be evaluated by ASTM D 1557.

2 Target moisture content at compaction relative to the optimum as evaluated by ASTM D 1557.

3.10 WATER SETTLEMENT

A. Refer to Section 32 91 13 "Soil Preparation and Soil Amendment" for additional information.

3.11 UTILITY TRENCH EXCAVATIONS AND BACKFILL

A. Depth and Width of Trench: Trenches shall be excavated to such depths as will permit the pipe to be laid at the elevations, slopes, or depths of cover indicated on the drawings, and at uniform slopes between indicated elevations. Whenever cobbles larger than 3 inches in size are present in earthen bedding, the trench section shall be excavated to the lines required for rock. Every effort shall be made

to keep the sides of the trenches firm and undisturbed until backfilling has been completed and consolidated. Trenches shall be excavated with approximately vertical sides between the elevation of the bottom of the pipe and an elevation one foot above the top of the pipe.

B. Trench Excavation to Fill: If pipe is to be laid in embankments or other recently filled material, the fill shall first be brought to final grade or to a height of at least one foot above the top of the pipe, whichever is the lesser. Particular care shall be taken to ensure maximum consolidation of material under the pipe location. The pipe trench shall be excavated as though in undisturbed material. Utilities trenches under paving sections shall have the required trench backfill or other fill material brought to subgrade prior to placement of the paving structural section.

C. Trench excavations shall be done mechanically, except within the drip line of existing trees.

D. Preparation of Fill Areas: Before beginning backfilling of any trench, the trench bottom shall be free of loose or disturbed soils, rubbish, trash or other debris. Where cobbles or boulders are encountered on the trench bottom above final grade, these materials shall be removed to provide uniform bedding for the utility lines.

E. Restore all pavement and sidewalks, damaged or cut as a result of excavations, to original conditions in a manner approved by the City Engineer.

F. Trench backfill shall be used for all new trench work for utilities other than perforated drainage and irrigation lines

G. Compaction: Trench backfill shall be compacted to a minimum of 90% relative compaction as determined by the City of Fremont dry density test method. In landscaped areas where trench backfill is used, it shall be held 12 inches short of the proposed finished grade to accommodate native backfill, or import topsoil, for proposed or future planting.

H. When backfilling, no material shall be deposited to depths greater than that which will allow a minimum of 90% relative compaction, as noted on the plan, to be achieved in any portion of that lift. No subsequent lift shall be placed until the previously compacted lift has been approved by the Engineer. No mechanical tamping will be allowed over conduit without sufficient cover to avoid damage.

I. Native material excavated from trenches may be used per the details herein to backfill in the top twelve (12) inches of the trench within landscape areas.

J. All excess native trench spoils may be defined as “Import Native Fill” or “Stockpiled Fill” if meeting the requirement of this section, and the geotechnical report, and may be used as compacted fill material for subgrade, where fill is required.

K. From Geotech Report: Trenches constructed for the installation of underground utilities should be stabilized in accordance with our recommendations in Section 9.1.8. of the Geotech report (See Appendix). Utility trenches should be backfilled with materials that conform to our recommendations in Section 9.1.4. Trench backfill, bedding, and pipe zone fill should be compacted in accordance with Section 9.1.6 of this report. Bedding and pipe zone fill should be shoveled under pipe haunches and compacted by manual or mechanical, hand-held tampers. Trench backfill should be compacted by mechanical means. Densification of trench backfill by flooding or jetting should not be permitted.

3.12 ROUGH GRADING

A. Rough grading shall be performed to the lines and grades indicated on the drawings, as contained in these specifications, and as required to provide for the various paving and surfacing materials, imported topsoil contouring, and sod.

B. The subgrade shall be excavated to follow the natural slope and create positive slopes toward the drain inlets. Subgrade shall be sloped as indicated on the plans, unless otherwise noted.

C. Fill areas include, but are not limited to:

1. Fill required attaining proposed subgrade in order to accept placement of aggregate base, concrete surfacing, permeable pavers, pervious concrete, mow bands, and all other features requiring fill to attain proposed subgrade.

2. Placement of topsoil to achieve contours as delineated on the plans.

3.13 UNSUITABLE MATERIALS

A. Material below the grading plane in the excavation area that is unsuitable for the planned use, as determined by the Project Landscape Architect, or in excess, shall be removed and disposed of outside the limits of work. Full compensation for the removal and disposal of such unsuitable material below the grading plane shall be measured and paid for at the contract price paid per cubic yard for **"Rough Grading"** and no separate payment will be made therefor.

3.14 HAND EXCAVATION AROUND TREES

A. Refer to Section 01 56 30 "Tree Removal, Tree Pruning and Root Pruning" for additional information.

3.15 FIELD QUALITY CONTROL

A. Supervision: Qualified foreman must be continuously on-site during work operations.

3.16 MEASUREMENT AND PAYMENT

A. Excavation and backfill for the various utility, storm, sewer, and irrigation trenches shall be considered as included in the contract unit prices paid for those items and no separate payment will be made therefor.

B. The final pay quantity for "**Rough Grading/Excavation (F)**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the excavation and fill and compaction work in order to achieve subgrade under all basketball court surfacing, pedestrian concrete, 12" curb and other flat work, and to backfill the void of the old demolished basketball court to proposed finished grade, all in accordance with this section, complete in place as shown on the plans, as required by these Special Provisions, and as directed by the City Engineer or his designee. Quantities of grading will not be measured. The quantity shown on the Engineer's Estimate for rough grading shall be the final pay quantity for which payment is made as specified in Section 9-1.015, "Final Pay Quantities" of the Standard Specifications.

C. The price paid for Conformance Surveying shall be included in the contract unit price paid for "Rough Grading (F)" and no separate payment will be made therefor.

END OF SECTION

SECTION 31 22 19 FINE GRADING

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this Section.

1.02 SUMMARY

A. Work Included: Execute finish grades complete in all sod areas prior to sod placement as shown, and as specified.

1.03 PROJECT/SITE CONDITIONS

A. Existing Conditions: Verify that rough grading work is. Complete prior to commencement of finish grade scope.

B. Dust Nuisance: Assume full responsibility for alleviation or prevention of dust as a result of grading work.

1.04 SEQUENCING AND SCHEDULING

A. Complete all soil preparation – Section 32 91 13 prior to finish grading.

B. Complete all finish grading prior to installation of sprinkler irrigation systems in each area graded.

C. Regrade as required to finish grades established by Project Landscape Architect once the sprinkler system is installed.

D. Preserve and protect existing irrigation as noted in plans.

PART 2 - PRODUCTS – Not Applicable

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verification of Conditions: Verify that the following items have been completed prior to commencement of finished grading.

1. Installation of (stockpiled) topsoil and soil preparation including debris removal.
2. Incorporation of soil amendments.

3.02 FINISH/FINE GRADING

A. When soil preparation, soil conditioning, water settlement, and weeding, have been completed, and soil has been thoroughly rolled or water settled, all planting areas shall be smooth-graded, ready for placement of plant materials. Rocks larger than 2 inches in diameter shall be removed.

B. Grading shall be done when soil is at optimum moisture content for working.

C. Provide all grades for natural runoff of water without low spots or pockets. Finish grades shall ensure positive drainage of the site.

D. Accurately set flow line grades at 2 percent minimum gradient unless otherwise noted in Drawings.

E. Finish grades shall be smooth, consistent and free from undulations or depressions, even and on a uniform plane with no abrupt changes of surface. Slope uniformly between given spot elevations. Areas filled by floating loose soil into depressions shall be thoroughly water settled.

F. Fine grading and excavation shall include, but not be limited to:

1. Planting Areas: Excavation to a minimum six (6) inch depth to remove sod and attain proposed subgrade in order to accept amendments, imported topsoil and new sod;

2. Excavation to a minimum twelve (12) inch depth to remove sod and attain proposed subgrade in order to accept concrete mow band;

3. Subgrade under planting areas shall be compacted to 85 to 88 percent relative compaction.

G. Tops and toes of all slopes shall be rounded to produce a gradual and natural-appearing transition between relatively level areas and slopes.

H. Contractor shall eliminate all erosion scars.

I. Tolerances

1. All planting areas, including lawn areas, shall be true to grade within 1 in. when tested with a 10 ft. straightedge.

2. Hold finished grades below top of adjacent pavement, headers, curbs, or walls as follows:

a. Lawn and Turf Areas: 1-1/2" below top of adjacent pavement, curbs, or headers.

J. The Contractor shall request an inspection by the City Project Landscape Architect for approval of the final grades before sod planting operations begin.

3.03 MEASUREMENT AND PAYMENT

A. The final pay quantity for "**Fine Grading (F**)" of the unit price schedule shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work covered in this section, complete in place as shown on the plans, as required by these Special Provisions, and as directed by the City Engineer. Quantities shall not be measured. The quantity shown on the Engineer's Estimate for soil preparation and amendment shall be the final pay quantity for which payment is made as specified in Section 8.2 and 8.8, "Final Payment" of the General Conditions and no additional payment shall be made therefore

END OF SECTION

DIVISION 32 – EXTERIOR IMPROVEMENTS

SECTION 32 11 23 AGGREGATE BASE COURSE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aggregate base course under concrete and asphalt paving.

1.02 RELATED DOCUMENTS

A. These special provisions are part of the plans and shall include all labor, materials, equipment, reasonable incidentals, and services necessary to the execution of the work.

B. Refer to all other sections, determine the extent and character of related work, and coordinate all work to produce a complete, properly constructed product.

C. Related Sections

1. Section 03 30 00 “Cast in Place Concrete”
2. Section 31 20 00 “Rough Grading””
3. Section 32 12 16 ”Asphalt Paving and Surfacing”
4. Caltrans Standard Specifications, May 2018 edition.
5. Section 11A and 11B, City of Fremont Standard Trench Backfill Specifications, Standard Specifications, dated January 1995 (amended) and per gradation included herein.

1.03 DESCRIPTION OF WORK

A. Scope of Work shall include, but shall not necessarily be limited to, the following for a complete and functional drainage system:

1. Ensure subgrade is prepared and compacted properly before aggregate base placement.
2. Place aggregate base to the depth and compact as required herein or per geotechnical Requirements found in section 31 20 00 “Rough Grading”.
3. Set grades, construct grades, and compact soils for drainage.
4. Stake proposed elevations in the field for review and approval by the City Engineer prior to construction.

1.04 REFERENCE STANDARDS

A. AASHTO

1. AASHTO M 147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses; American Association of State Highway and Transportation Officials; 1965 (2004).
2. AASHTO T 180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54 kg (10-lb) Rammer and a 457 mm (18 in.) Drop; American Association of State Highway and Transportation Officials; 2001 (2004).

ASTM

1. ASTM C 136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2006.

2. ASTM D 1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method; 2007.
3. ASTM D 1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN m/m3)); 2007.
4. ASTM D2434: Standard Test Method for Permeability of Granular Soils (Constant Head); 2006.
5. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth); 2005.
6. ASTM D 3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 2005.

1.05 SUBMITTALS

A. Submit cut-sheets or samples of all products to be used in conformance with Section 01 32 19 “Submittals Procedures” and/or applicable Division One and Division Two specifications, General Conditions and Special Provisions.

B. Product Data: Manufacturer's catalog cuts indicating material compliance and specified options.

C. Record Drawings: Accurately record location of new piping, drain structures, and connections to existing systems using horizontal dimensions, elevations, inverts and slope gradients as applicable.

D. Provide two (2), one (1) quart samples of each of the following products:

E. Aggregate Base

F. Submit samples at least fifteen (15) days prior to the use thereof.

G. Materials Sources: Submit name of imported materials source.

H. Compaction Density Test Reports.

1.06 DELIVERY, STORAGE, AND HANDLING

A. When necessary, store materials on site in advance of need.

B. Verify that survey bench marks and intended elevations for the Work are as indicated.

1.07 PROJECT/SITE CONDITIONS

A. Work of this section shall not be executed when site conditions are detrimental to quality of work as determined by the Engineer.

1.08 SEQUENCING AND SCHEDULING

A. Coordinate work of this section with all other work contained in the Contract Documents.

PART 2 PRODUCTS

2.01 AGGREGATE BASE (AB)

A. Caltrans Class II 3/4 inch aggregate base, conforming to Section 26 of the State of California Department of Transportation Standard Specifications, dated 2015 and shall be placed as base under all concrete and asphalt surfaces, including mow bands, deep bands, and other finished surface materials.

B. Quality Control; Testing for all aggregate base for shall be per Caltrans Standards or per ASTM requirements. If tests indicate materials do not meet specified requirements, change material and retest. Provide materials of each type from same source throughout the Work

C. Aggregate base shall be compacted to a minimum of 95 percent relative compaction.

D. No separate payment shall be made for aggregate base placed beneath concrete, asphalt concrete, mow bands, deep bands, basketball court. The cost for furnishing aggregate base shall be included in the various line items listed herein.

2.02 SOURCE QUALITY CONTROL

A. Testing for all aggregate base for flatwork shall be per Caltrans Standards

B. Testing for all aggregate base for cast-in-place structures requiring special inspection shall be per ASTM requirements.

C. See Section 01 45 00 “Quality Control”, for general requirements for testing and analysis of aggregate base materials.

D. If tests indicate that materials do not meet specified requirements, change material and retest.

E. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify subgrade has been prepared, inspected, gradients and elevations are correct, and is dry.

3.02 PREPARATION

A. Coordinate the sequence of work.

B. Review proposed staked elevations and proposed limits of excavation in the field with the Project Landscape Architect for approval prior to setting pipe and drain inlets.

C. Adjust proposed elevations as necessary to ensure proper drainage, and to conform to existing rim elevations, with no areas of standing water.

D. Schedule and perform drainage system installation prior to prolonged wet weather periods.

E. Correct irregularities in subgrade gradient and elevation by scarifying, reshaping, and re-compacting.

F. Do not place aggregate on soft, muddy, or frozen subgrade surfaces.

G. Where required, geotextiles shall be in place prior to placement of aggregate base.

3.03 SUBGRADE PREPARATION

A. Refer to Section 31 20 00 “Rough Grading” for additional information regarding subgrade preparation prior to placement of imported materials

3.04 INSTALLATION CLASS 2 AGGREGATE BASE

A. Imported Class 2 aggregate base rock, under all concrete paving, should be compacted between a minimum 90% relative compaction to 95% relative compaction of maximum dry density, unless otherwise stated in the geotechnical report included in these Specifications.

B. Compaction criteria will be based on the laboratory procedure ASTM D1557.

C. Proof-roll subgrade immediately prior to commencement of spreading of aggregate base.

D. Spread aggregate over prepared subgrade to a total compacted thickness as shown on the plans and described in the contract specifications.

E. Aggregate base material shall be delivered to the subgrade as uniform mixtures.

F. Each layer shall be spread in one operation.

G. Material shall be spread upon the prepared subgrade by means of vehicles equipped with approved spreading devices at a uniform quantity per linear foot.

H. Where the required thickness is 6 inches or less, the base material may be spread and compacted in one layer.

I. Where the required thickness is more than 6 inches, the base material shall be spread and compacted in 2 or more layers of approximately equal thickness, and the maximum compacted thickness of any one layer shall not exceed 6 inches.

J. Level and contour surfaces to elevations and gradients indicated.

K. Add small quantities of fine aggregate to coarse aggregate as appropriate to assist compaction.

L. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.

M. Base shall be firm and unyielding when proof-rolled with heavy, rubber-tired grading equipment prior to continuing construction.

N. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

O. Base material placed in areas inaccessible to the spreading equipment may be spread in one or more layers by any means that will make possible the specified compaction and surface.

P. The base material, after spreading, shall be shaped by means of a blade grader to such thickness that after watering and compacting, the completed base will conform to the required grade and cross section within the tolerances specified.

Q. Segregation of aggregate shall be avoided; the base shall be free from pockets of coarse or fine material.

R. Finished base that does not conform to the foregoing requirements shall be reshaped or reworked, watered, and thoroughly re-compacted to conform thereto.

S. The Contractor shall not allow any completed untreated rock base to be subject to public or construction traffic, except the latter necessary to the completion of the overlying surface courses.

3.05 TOLERANCES

A. Flatness: Maximum variation of 1/4 inch measured with 10 foot straight edge.

B. Scheduled Compacted Thickness: Within 1/4 inch.

C. Variation From Design Elevation: Within 1/2 inch.

3.06 FIELD QUALITY CONTROL

A. Refer to Section 01 45 00 “Quality Control”, for general requirements for field inspection and testing.

B. Compaction density testing will be performed on compacted aggregate base course in accordance with ASTM D1556 and Method C of ASTM D 1557.

C. If tests indicate work does not meet specified requirements, remove work, replace and retest.

3.07 CLEANING

A. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

3.08 MEASUREMENT AND PAYMENT

A. The price paid for **Class 2 Aggregate Base** shall be included in the contract unit price paid for the various line items requiring class 2 aggregate base and no separate payment will be made therefor.

END OF SECTION

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SECTION 32 12 16 ASPHALT PAVING AND SURFACING

PART 1 GENERAL

1.01 WORK

A. Installation of asphalt concrete for basketball court over prepared aggregate base

B. Applying prime coat and tack coat.

C. Dust alleviation and control.

D. Cleanup and disposal of debris.

E. Supplying all labor, materials, equipment and apparatus not specifically mentioned herein or noted on the plans, but which are incidental and necessary to complete the work specified.

1.02 Related Sections

A. Section 03 11 00 “Concrete Formwork”

B. Section 03 20 00 “Concrete Reinforcement”

C. Section 03 30 00 “Cast-in-Place Concrete”

D. Section 32 11 23 “Aggregate Base Course”

E. Section 32 18 23 “Athletic Acrylic Surfacing – Plexipave”

1.03 APPLICABLE PUBLICATION

A. The publications listed below form a part of this specification to the extent referenced. The publication is referred to in the text by the general designation only.

B. State of California Department of Transportation (Caltrans) Standard Specification 2018

C. California Department of Transportation Testing Manual: California Test Method (CMT) 304 Method of Preparation of Bituminous Mixtures for Testing

D. California Department of Transportation Testing Manual: California Test Method (CMT) 375 Determining the In-Place Density and Relative Compaction of AC Pavement.

1.04 QUALITY ASSURANCE

A. Codes and Standards

1. Spreading and compacting of asphalt concrete shall conform to the applicable provisions of Section 39 of the State Standard Specifications.

2. Traffic Control shall conform to Section 01 55 27 “Maintenance of Traffic and Access” of these Specifications.

B. Allowable Tolerances

1. Percentage of compaction specified shall be the minimum acceptable. The percentage represents the ratio of the dry density of the compacted material prepared in accordance with CTM 304 to the in-place density of the material as determined by the procedure set forth in CTM 375.

2. Finish surface of asphalt concrete when measured with a twelve-foot straight edge shall not vary more than 0.01 feet in the longitudinal direction and 0.02 feet transversely below the lower edge of the straight-edge.

C. Submittals

1. Asphalt mix:

   a. "R" valve, per California Test Method 301;

   b. Sieve Analysis, per California Test Method 202;

   c. Sand equivalency, per California Test Method 217;

2. For aggregate bases, the durability index, per California Test Method 229

3. Provide the Engineer daily with one (1) copy of a material certificate signed by material producer certifying that each material item complies with or exceeds the specified requirements for each type of material delivered.

4. Provide the Engineer with one (1) copy of certified plant load out slips for each load of material delivered showing net weight of aggregate base, subbase or asphalt concrete delivered to the job site, to be attached to the appropriate material certificate.

1.05 JOB CONDITIONS & MINIMUM TEMPERATURES

A. Asphalt concrete material shall not be placed until the aggregate base has been approved.

B. Provide satisfactory dust alleviation and control measures continuously during the course of the work.

C. Prime or tack coat materials shall not be applied unless the ambient temperature is above 50°F and has not been below 35°F during the twelve (12) hours immediately prior to application. Prime or tack coats shall not be applied when the surface to be coated is wet or contains an excess of moisture.

D. Asphalt concrete shall not be applied unless the ambient temperature is above 50 degrees F and rising, the surface is dry, and upon specific approval by the Engineer.

E. Temperature of asphalt concrete shall not be less than 250 degrees F during initial spreading.

PART 2 PRODUCTS

2.01 ASPHALT CONCRETE

A. Asphalt concrete shall comply with the requirements for 1/2-inch Type A Hot Mix Asphalt, Standard Specifications 39-2.02B(2).

B. Asphalt to be mixed with aggregate to form asphalt concrete shall be steam-refined paving asphalt, grade PG-64-10, conforming to the requirements of Section 92-1.02 and 1.03 of the State Standard Specifications.

C. Aggregate for asphalt concrete shall be Type A conforming to the requirements of Section 39-2.02 of the State Standard Specifications with the following special provisions:

1. Grading of combined aggregates for new asphalt concrete pavement, walkways, and overlays two (2) inches or more in thickness shall be three-quarter (3/4) inch maximum size, medium grading.

2. Grading of combined aggregate for asphalt concrete pavement, walkways and overlays less than two (2) inches in thickness shall be one half (l/2) inch maximum size, medium grading.

D. Liquid asphalt for prime coat shall be Grade SS-1 conforming to the requirements of Section 94 of the State Standard Specifications.

E. Asphaltic emulsion for tack coat (paint binder) shall be emulsified asphalt, Type SS-1h conforming to the requirements of Section 94-1.01 through 1.05 of the State Standard Specifications.

F. Suppliers certification showing conformance to these specifications shall be delivered with each shipment of materials to the job site.

PART 3 EXECUTION

3.01 EXAMINATION

A. Prior to work of this section, carefully inspect previously installed work. Verify all such work is complete to the point where this installation may properly commence; report defects.

B. Verify that work of this section may be installed in strict accordance with the original design, all pertinent codes and regulations, and all pertinent portions of the referenced standards.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 ENVIRONMENTAL REQUIREMENTS

A. Base Course: Do not lay during wet weather, on muddy sub-grade, or when atmospheric temperature is below 35 degrees F.

B. Asphalt Surfacing: Do not apply during wet weather, on wet base course, or when atmospheric temperature is below 40 degrees F.

3.03 AGGREGATE BASE

A. Refer to Section 32 11 23 Aggregate Base Course.

3.04 PRIME, TACK COATS, AND SURFACE PREPARATION

A. Liquid asphalt prime coat shall then be applied to the aggregate base course in conformance with the requirements of Section 39-4.02 of the State Standard Specifications. Prime coat shall be applied at the rate of 0.25 gallons per square yard unless otherwise directed. After the liquid asphalt has penetrated the base course, any excess standing on the surface shall be absorbed to the satisfaction of the Engineer with a suitable coating of clean sand.

B. Tack coat shall be applied to all vertical surfaces of existing pavement, curbs, gutters, catch basins, manhole frames, and construction joints in the surfacing to the horizontal surface of all existing pavements to be resurfaced and other surfaces designated. Asphaltic paint binder shall be provided in sufficient quantity to produce a thin, uniform black, glossy coat of asphalt. Pools in unevenly

C. Distributed areas shall be redistributed by means of hand brooms. Tack coat shall be applied in conformance with the applicable requirements of Section 39 4.02 of the State Standard Specifications.

D. Prior to placing asphalt over existing pavement, sweep the pavement clean of loose dirt to the satisfaction of the City Engineer.

3.05 ASPHALT CONCRETE

A. Asphalt concrete shall be proportioned, mixed, placed, spread and compacted in conformance with the applicable requirements of Section 39 of the State Standard Specifications and the following requirements:

1. Asphalt concrete shall be placed only upon specific approval of the Engineer. When, in the opinion of the Engineer, the surface is too wet, no asphalt concrete shall be placed. The Engineer will make the final decision as to whether conditions are satisfactory for paving.

2. No asphalt concrete surface course shall be placed when the ambient temperature is less than 50° F. All compaction shall be completed before the temperature of the mixture drops below 200°F.

3. All longitudinal joints shall be "hot" joints; cold joints are only allowed transversely at discontinuance of the day's run.

4. Asphalt concrete for roadways shall be placed in layers when the total depth called for on the plans and detail drawings exceeds two (2) inches. The final layer shall not be less than one and one-half (1-1/2) inches in compacted thickness nor more than two (2) inches. The first lower layer shall not exceed two and one-half (2-1/2) inches in compacted thickness. Where more than four and one-half (4-1/2) inches in total compacted thickness are specified, three (3) or more layers shall be required.

5. All asphalt courses shall be placed by means of an approved self-propelled asphalt paving machine. Contractor may place lower courses and compact all courses with equipment conforming to the requirements of Section 39 of the State Standard Specification.

6. The windrow/pick-up machine method for spreading asphalt may be used with the following restrictions:

   - The machine is self-supporting and may not transmit loads to the paving machine. The use of a track type machine is recommended.
   - The maximum windrow length in front of the paving machine shall be 200-feet, and shall not block intersections.
   - The Contractor shall furnish a “Dump Man” for the control of windrow distribution.
   - At the sole discretion of the Engineer, depending on ambient temperature and the length of haul, the loaded trucks must be covered with a tarp.
   - Any damages to the reinforcing fabric caused by the pick-up machine shall be repaired before the work is allowed to continue.
   - At the sole discretion of the Engineer, depending on traffic control operations, the use of double-bottom dump trucks may be prohibited.

7. Where asphalt paving is to be laid against concrete gutter, the first pass shall start at the gutter and successive passes work towards the center of the street, and the finish surface of the asphalt concrete wearing course shall be constructed to a height one-quarter (1/4) inch above the abutting edge of the gutter.

8. Trucks, loaded or empty, shall not be allowed on the new surface until the asphalt concrete reaches ambient temperature.

B. The final lift of asphalt paving shall not be placed until all other construction activity, including building construction and landscaping is completed.

C. When placing asphalt over existing pavement, repair large cracks, spalls, and chuck-holes, and clean the pavement surface to the satisfaction of the City Engineer.

D. Asphalt concrete shall be rolled such that compaction after rolling shall be 95% of the density obtained with the California Test 304. Field density tests may be conducted by the Engineer to confirm density using the California Test 375.

E. Failure to meet the specified density may require credits back to the City for non-conformance.

3.06 ASPHALT PLANING

A. At conforms, existing pavement shall be planed a minimum of one and one half (1-1/2) inch. Feathering will not be permitted.

B. For overlay, plane as necessary to allow a minimum overlay of two (2) inch to new elevations.

C. The contractor will be held responsible for any and all damage to trees, plants, and shrubs caused by the grinding operation and shall satisfactorily replace with new material or correct any damage.

D. Ground asphalt concrete shall be removed from the job site and disposed of immediately following the grinding operation.

E. Ground areas shall be overlaid within one week of grinding.

3.07 DUST ALLEVIATION AND CONTROL

A. Contractor shall provide satisfactory pollution and dust abatement and control measures continuously during the course of the work.

B. The Contractor shall utilize reclaimed water, or dust palliatives, in compliance with the City's Water Conservation Ordinance.

3.08 CLEANUP

A. Upon completion of asphalt paving and surfacing operations, the entire work site shall be cleaned of all waste, rubbish, and construction debris of any nature.

3.09 MEASUREMENT AND PAYMENT

A. The square feet unit price paid for "**Asphalt Basketball Court and Aggregate Base**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, including aggregate base placement, and asphalt placement, complete in place as shown on the plans, as required by these Special Provisions, and as directed by the City Engineer.

B. Plexipave Surfacing shall be per Section 32 18 23 Measurement and Payment item "PlexiPave Surface"

END OF SECTION

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SECTION 32 18 23 ATHLETIC ACRYLIC SURFACING – PLEXIPAVE

PART 1 GENERAL

1.01 SCOPE/DESCRIPTION

A. These specifications pertain to the application of fortified Plexipave Color Finish over acrylic surfacer on asphalt for project basketball court as designated in the Site Plans. The material in colors indicated shall be for asphalt surfaces and must be equally durable over both.

B. The work shall consist of suitable cleaning and preparation of the asphalt to assure a satisfactory bond of the color finish to the base and the subsequent coating applications.

C. Test for base stability, drainage, free from cracking, and thickness prior to application of Plexipave.

D. Repair of any minor depressions prior to the application of the Plexipave System.

1.02 RELATED SECTIONS

A. Section 01 00 00 “Supplemental to the General Requirements”

B. Section 03 30 00 “Cast in Place Concrete”

C. Section 32 12 16 “Asphalt Paving and Surfacing”

1.03 QUALITY ASSURANCE

A. Do not apply surfacing if the surface temperature is less than 50F degrees, or more than 140F degrees, and/or if rainfall is imminent.

B. Surface variation should not exceed 1/8 inch in ten feet when measured in any direction with a straightedge and a slope of 1 inch in 10 feet, all in one plane.

C. Use acrylic court surface as shown on the plans and in accordance with these special provisions.

D. The surface to be coated must be sound, smooth and free from dust, dirt and oily materials. All ridges, loose or foreign materials shall be removed from the surface.

E. Prior to the application of any surfacing material, the entire surface shall be flooded to check for minor depressions and irregularities. All depressions holding over 1/8 inch deep water, and surface cracks shall be cleaned of any loose or foreign material. A tack coat consisting of 1 part “Plexipave System” Court Patch Binder and 2 parts water, or approved equal, shall be applied to all patch areas, as recommended by the manufacturer, and allowed to cure thoroughly prior to patching.

1.04 SUBMITTALS

A. Manufacturer’s product literature, product specifications and installations specifications

B. Material Safety and Data Sheets (MSDS)

C. Maintenance and Operations Manual, including maintenance schedule and recommendations

D. Color samples

1.05 TOLERANCES

A. Planarity: Planarity: the substrate, shall not vary from the planned cross slope by more than +- 0.1%. The finished surface shall not vary, plus or minus, under a 10-feet straightedge greater than 1/8-inch. It is the responsibility of the paving contractor to water the surface with the use of a hose. If, after 30 minutes on a 70-degree F day, “bird baths” are evident in a

depth more than 1/8-inch the paving contractor, tennis court surfacing contractor and the City will determine the best method of correction.

B. Thickness: tolerances for thickness shall be 1/8-inch, plus or minus.

C. Test in-place courses for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by City.

1.06 CORRECTIVE MEASURES

A. It is the Contractor's responsibility to determine if the planarity, cross slopes and general specifications have been met.

PART 2 MATERIALS/PRODUCTS

2.01 FORTIFIED PLEXIPAVE COLOR FINISH SYSTEM

A. The materials to be used shall be FORTIFIED Plexipave as manufactured by California Products Corporation, Andover, MA 01810, in colors specified and approved by the City Landscape Architect prior to first color application.

B. The material shall comply with Specification 10.2 of the California Products Corporations. No field mixing of sand will be allowed.

C. Colors: Color of court shall be per detail 5, sheet L7.0.

D. Coverage:

1. First Coat: 10-15 square yards per gallon (.1-.07 gal/SY)
2. Second Coat: 15-20 square yards per gallon (.07-.05 gal/SY)
3. Third Coat: 20-25 square yards per gallon (.05-.04 gal/SY)

2.02 PLEXIPAVE SYSTEM - SURFACING

A. Plexipave Court Patch Binder – shall comply with Specification 10.14 of California Products Corporation.

B. Plexipatch – shall comply with Specification 10.21 of California Products Corporation.

C. Acrylic Resurfacer - shall comply with Specification 10.8 of California Products Corporation.

D. Plexipave Color Base - shall conform to Specification 10.5 of California Products Corporation.

E. Plexichrome - shall conform to Specification 10.1 of California Products Corporation.

F. Plexicolor Line Paint - shall conform to Specification 10.4 of California Products Corporation.

G. Water – the water used in all mixtures shall be fresh and potable.

2.03 CRACK FILLER AND COURT PATCH

A. Court Patch Binder: Plexipave Court Patch Binder, or approved equal. Install per California Products Corporation or manufacturer's specifications. No asphalt emulsions will be accepted. Court Patch Binder will be used for court cracks that are greater than ¼" wide.

2.04 PLAYING LINE PAINT

A. Plexiclor Textured Line Paint or approved equal. Install per California Products Corporation or manufacturer's specifications.

2.05 PROTECTIVE COATING

A. Clear-Glo 3 or approved equal. Install per California Products Corporation or manufacturer's specifications.

2.06 MANUFACTURER

A. California Products Corporation, or approved equal. Distributed by Fraser-Edwards Co., LLC (415) 826-9595 or equivalent materials and application from NovaSports USA (crack fillr, surface system and line paint), or approved equal. Distributed by L&M Distribution, San Rafael, CA, (415) 459-5565.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Edges adjacent to building, curbing and landscaping not to be coated with this Color Finish System shall be adequately masked with tape or otherwise protected during these applications. The contractor shall also erect suitable temporary barriers to protect the coatings during drying and curing periods as needed and determined by the Project Inspector and Contractor.

B. Materials specified for the Color System shall be delivered to the site in sealed, green painted containers properly labeled with California Products Corporation labels, and stenciled with the proper batch code numbers. Products packaged or labeled in any other manner will not be accepted.

C. Mixing with clean fresh water shall only be done at the job site. Spreading rates are based upon materials prior to mixing with water as directed. The material shall be mixed one (1) part water to four (4) parts Fortified Plexipave. In extremely warm climatic conditions, additional water can be added for a more workable mix.

3.02 SURFACE PREPARATION

A. Asphalt shall be cured for at least 14 days and concrete for a minimum 28 days prior to Color Finish application. Ridges and excessive voids or depressions shall be corrected prior to first color application.

B. The surface to be coated must be sound, smooth, and free from dust, dirt or oily materials. Prior to the application of surfacing materials, the entire surface should be flooded, and checked for minor depressions or irregularities. Any puddled area covering a nickel shall be marked and repaired with Court Patch Binder using the following mix:

- 100 lbs. 60 – 80 mesh silica sand (dry)
- 3 gallons Plexipave Court Patch Binder
- 1 to 2 gallons Portland Cement (dry) depending on humidity and temp.

C. Tack coat consisting of 1 part Court Patch Binder and 2 parts water shall be applied to the patch areas and allowed to dry thoroughly prior to patching.

D. After patching, the surface shall not vary more than 1/8 inch in ten feet measured in any direction.

E. In order to provide a smooth, dense underlayment for the Plexipave system, one application of California Acrylic Resurfacer shall be applied to the surface to obtain coverage of 15 – 20 square yards per gallon (.07 - .05 gallons per square yard). No application shall be covered by a succeeding application until thoroughly cured. Dilution with water and sand is required utilizing the following mix:

1. Acrylic Resurfacer 55 gallons
2. Water (Clean and Potable) 20-40 gallons
3. Sand (45-60 Mesh) 600 – 900 lbs.
4. Liquid Yield 112 – 138 gallons

F. Apply one coat to continuous parallel lines spreading immediately with a rubber bladed squeegee, and as recommended by the manufacturer. The squeegee shall be pulled on an angle from the line and spread so as to continuously roll the material toward the operator and not overflow or "spill" on its forward edge away from the operator.

G. Following application of the acrylic resurfacer, the surface shall be rolled. Any ridges shall be removed with scrapers. The entire surface shall be flooded again to check for minor depressions and irregularities. If there are still depressions and irregularities holding over 1/8 inch depth of water, the PlexiPave System Court Patch Binder, or approved equal, shall be reapplied as outlined above. Approval by the Engineer, or Project Inspector, is required prior to proceeding with the final court surface applications.

3.03 FORTIFIED PLEXIPAVE APPLICATION

A. The final surface application involves applying the Fortified Plexipave.

B. Over new asphalt (or concrete) surfaces, three (3) squeegee coats of the same color shall be applied in succession as soon as the previous coat has dried and all work shall be done by experienced or carefully trained workmen.

C. The contractor shall be accountable at all times for the amount of materials of each color used.

D. All line markings shall be made with Textured Plexicolor Line Paint according to California Products Corporation specification 10.4

E. Fortified Plexipave shall be applied by rubber bladed squeegee on the clean, dry surface in 3 applications to obtain a total quantity of not less than .15 nor more than .23 gallons per sq. yd. of area, based on the material prior to any dilution. No application shall be covered by a succeeding application until thoroughly cured.

F. Fortified Plexipave shall be job mixed as follows:

- Plexipave Color Base 30 gallons
- Plexichrome 20 gallons
- Water 20 gallons

G. The color base added to the final surface mix shall be as per the plans and will match as closely as possible the existing court playing surface colors adjacent to the work. The contractor shall submit color samples to the Project Landscape Architect for review at the pre-construction meeting.

H. The diluted material shall be homogenous. Segregation before or during application will not be permitted.

I. The finished surface shall have a uniform appearance and be free from ridges and tool marks.

3.04 PLAYING LINES

A. A minimum four hours after the final surface coat is applied, playing lines shall be accurately located, marked, and painted as shown on the plans, as recommended by the manufacturer and as approved in the field by the City Project Inspector.

B. No playing lines shall be painted until the City Project Inspector or the Project Landscape Architect has approved the final locations. The width of the playing lines shall typically be two (2) inches, unless shown otherwise on the plans.

C. Line paint shall be the Plexipave System" Plexicolor Line Paint, or approved equal.

3.05 PROTECTIVE COATING

A. On all surfaces, apply two (2) coats of Clear-Glo 3. Second layer of protection coat will be installed after the first coat is dry.

3.06 LIMITATIONS

A. No part of the construction involving the Plexipave System shall be conducted during rainfall, or when rainfall is imminent. The air temperature must be at least 50°F and rising. Do not apply when surface temperature is above 140°F. The Plexipave System will not prevent surface or structural cracks from reoccurring.

3.07 CLEAN-UP AND DISPOSAL

A. All spatter shall be removed from adjoining paving and basketball court equipment before acceptance.

B. Upon completion of work, the contractor shall remove all containers and debris, and leave the site in a clean and orderly condition acceptable to the owner.

C. Debris and Rubbish: Remove and transport debris and rubbish in a manner that will prevent spillage on streets or adjacent areas. Clean-up spillage from streets and adjacent areas to best of ability. Remove ALL debris that may cause incident to vehicular/pedestrian traffic.

D. All materials removed shall be disposed of in Section 01 74 19 "Construction and Demolition Debris Management Comply with all Federal, State, and Local Agency hauling and disposal regulations.

3.08 MEASUREMENT AND PAYMENT

A. The square foot unit price paid for **"Plexipave Surfacing"** shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involved, complete in place as shown on the plans, as required by these Special Provisions, and as directed by the City Engineer or his designee.

B. Asphalt Basketball Court shall be per Section 32 12 16 Measurement and Payment item "**Asphalt Basketball Court with AB**".

END OF SECTION

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SECTION 32 31 13 CHAIN LINK FENCING (ALTERNATE 1)

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. The General Conditions and all other Contract Documents for this project are complementary and applicable to this section of the Specifications.

B. These special provisions are part of the plans and shall include all labor, materials, equipment, reasonable incidentals, and services necessary to the execution of the work.

C. Refer to all other sections, determine the extent and character of related work, and coordinate all work to produce a complete, properly constructed product.

D. Related work including, but not limited to, in other Sections

1. Section 02 41 00 “Site Demolition”
2. Section 03 30 00 “Cast-In-Place Concrete”

1.02 DESCRIPTION OF WORK

A. The work includes, but is not necessarily limited to, all labor, materials, equipment, and services required to complete galvanized chain link fencing, gates, and backstop and related work as shown on the Drawings and specified herein and elsewhere in these specifications. Work shall include, but shall not necessarily be limited to the following:

1. 6’ and 9’ height galvanized coated steel chain link fence fabric, gates, hardware, posts and bars, or approved equal. Fabric shall be 1.5” diamond, 9 gauge
2. Concrete footings

B. Work Specified Under Other Sections: Consult all other Sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete, finished and workmanlike installation.

1.03 REFERENCES AND STANDARDS

The following references and standards are hereby made a part of this Section and Steel Chain Link Fence Fabric and Fencing material and installation shall conform to the applicable requirements therein except as otherwise specified herein or shown on the Drawings.

A. Manufacturer’s recommendations and specifications

B. Federal Specifications (FS)

1. RR-F-191K/3D Fencing, Wire and Post Metal (Chain Link Fence Posts, Top Rails and Braces), Class 1, Grade A
2. RR-F-191K/4D Type 1 Fencing, Wire and Post Metal (Fittings)
3. RR-F-191K/1D Fencing, Wire and Post Metal (Chain Link Fence Fabric), Type IV

C. Chain Link Fence Manufacturer's Institute's (CLFMI)

D. Steel Chain Link Galvanized Fence Fabric (CS 246)

E. Industrial Steel Specifications for Fence-Posts, Gates and Accessories

F. Standards for Chain Link Fence Installation

G. American Association of State Highway Transportation Officials (AASHTO)

4. M-181 Chain Link Fence
5. M-181 Chain Link Fence, Grade 1
6. M-181 Chain Link Fence, Type IV, Grade A

H. American Standard Testing and Materials (ASTM)

ASTM A53, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

ASTM A90/A90M, Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings.

ASTM A90/A90M, Test Method for Weight of Coating on Zinc-coated (Galvanized) Iron or Steel Articles

ASTM A116-88, Standard Specification for Metallic-Coated, Steel Woven Wire Fence Fabric

ASTM A123, Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

ASTM A153/A153M, Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

ASTM A428/A428M, Test Method for Weight [Mass] of Coating on Aluminum-Coated Iron or Steel Articles.

ASTM A491, Specification for Aluminum-Coated Steel Chain-Link Fence Fabric

A641A641M,Standard Specifications for Zinc-Coated (Galvanized) Carbon Steel Wire

ASTM A653, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

ASTM A780, Practice for Repair of Damaged and Uncoated Areas of HotDip Galvanized Coatings.

ASTM 809,Standard Specifications for Aluminum-Coated (Aluminized) Carbon Steel Wire

ASTM A817, Specification for Metallic-Coated Steel Wire for Chain-Link Fence Fabric.

ASTM A824, Standard Specifications for Metallic-Coated Steel Marcelled Tension Wire for Use With Chain Link Fence

ASTM A1011/A1011M, Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low Alloy with Improved Formability, and Ultra-High Strength.

ASTM B6, Standard Specifications for Slab Zinc

ASTM B26, Standard Specifications for Aluminum-Alloy Sand Casting

ASTM B85, Standard Specifications for Aluminum-Alloy Die Casting

ASTM B209, Standard Specifications for Aluminum and Aluminum-Alloy Sheet and Plate

ASTM B211, Standard Specifications for Aluminum and Aluminum-Alloy Bar, Rod and Wire

ASTM B221,Standard Specifications for Aluminum and Aluminum-Alloy Extruded Bars, rods, Wires, Profiles and Tubes

ASTM B429, Standard Specifications for Aluminum Alloy-Extruded Structural Pipe and Tube

ASTM F552, Terminology Relating to Chain Link Fencing.

ASTM F 567, Installation of Chain Link Fence

ASTM F 626, Standard Specifications for fence Fittings

ASTM F900, Specification for Industrial and Commercial Swing Gates.F 1043, Strength and Protective Coatings on Metal Industrial Chain Link Fence Framework, Group 1-A

ASTM F 1083, Pipe, Hot Dipped Zinc-coated (Galvanized) Welded for fence Structures

CLFMI CLF 2445, Product Manual.

CLFMI, Step-by-Step Installation Guide.

IEEE C2, National Electrical Safety Code.

IEEE 81, Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System Part 1: Normal Measurements.

UL 467, Grounding and Bonding Equipment.

1.04 TERMINOLOGY

A. The following words or terms are not defined but, when used in this Section, have the following meaning.

1. "Knuckling" describes the type of selvage obtained by interlocking adjacent pairs of wire ends and then bending the wire ends back into a closed loop.
2. "Gate operating cycle" is one gate opening plus one gate closing.
3. "Fencing" describes an assembly of metal components, including wire chain-link fabric fastened to top, bottom and intermediate horizontal rails and to vertical line posts, corner posts and terminal posts. This assembly includes all auxiliary components, gates, fittings, fasteners, and other accessories, all with specified protective coatings.

B. Terminology used in this Section and not defined in this Article will be construed in accordance with the terminology used in CLF 2445 and ASTM F552.

1.05 SUBMITTALS

A. Action Submittals: Submit the following

1. Product Data: Copies of manufacturer's technical product information, and specifications for all fencing components, manufacturer's catalog cuts indicating material compliance and specified options.
   a. Weight of aluminum coating on wire fabrications, in compliance with ASTM A428.
   b. Weight of zinc coating on pipe fabrications, in compliance with ASTM A90.

B. Samples: City's Project Landscape Architect review will be for color and texture only. Compliance with other requirements is Contractor's responsibility. Submit the following

1. Submit one 12" x 12" sample of fence fabric for approval
2. Each fencing component, fastener, post, rail, support, chain-link fabric type, and other auxiliary and miscellaneous items labeled with identification of proposed use and location.
3. Sample of each chain-link fabric material, six inches square; and framework members, and typical accessories, each approximately six inches long.

C. Shop Drawings:

1. Shop drawings shall include the layout of fences, posts and gates with dimensions, details and finishes of components, accessories, and post type, post sizes and foundations, including cross sectional dimensions of posts, braces, rails, fittings, accessories and gate frames, design of gates and detail of hardware.
2. Drawings at scale of 1/4-inch equal to one foot of typical fence assembly, identifying all materials, dimensions, sizes, weights, and finishes of rails, posts, braces, supports and other fencing components. Show fence heights, and locations of gates. Show gate swing, or other operation, hardware, and accessories. Include plans, elevations, and sections, with required installation and operating clearances, and details of post anchorage, attachments, and bracing.
3. List of all hardware, fasteners, and accessories

D. Informational Submittals: Submit the following:

1. Certifications:
   a. Submit shipping list for materials used, endorsed with manufacturer's voucher, signed by authorized employee of manufacturer, certifying that material used in fencing complies with the Contract Documents and with the approved submittals

b. Certification that electrical components, devices, and accessories are listed and labeled by testing agency acceptable to authorities having jurisdiction at the Site, and are marked for intended use.

2. Design Data: Submit with the Shop Drawings:
   a. All structural calculations verifying that all system components comply with requirements of authorities having jurisdiction at the Site.CT053378 32 31 00-5.
   b. When proposing fencing framework or other structural components that varies from the Contract Documents, submit fabricator's structural calculations for design of proposed fencing. Structural analysis shall verify that all system components including supports, gates, fasteners, fittings, and connections comply with the Contract Documents and requirements of authorities having jurisdiction at the Site.
3. Manufacturer's Instructions:
   a. Manufacturer's installation instructions.
4. Field Quality Control Submittals:
   a. Indicate and interpret test results for compliance of chain link fence and gate grounding and bonding with performance requirements specified in the Contract Documents.
5. Qualifications Statements:
   a. Erector

E. Do not proceed with the work until samples and shop drawings have been approved by the City's Engineer or Project Landscape Architect.

F. Closeout Submittals:
1. Submit the following:
   a. Warranty documentation.

1.06 QUALITY ASSURANCE

A. Provide chain link fencing as complete units produced by a single manufacturer including necessary erection accessories, fittings, and fastenings.

B. Installation of fencing shall be by the manufacturer or his authorized representative in accordance with CLFMI "Standards for Chain-link Fence Installation", the drawings, reviewed shop drawings, and the manufacturer's detailed installation drawings, instructions, and recommendations.

C. Component Supply and Compatibility: Provide fencing as complete system with all gates, hardware, appurtenances and other components produced by a single manufacturer, including custom erection accessories, fittings, clamps, and fastenings as required for complete system.

D. Regulatory Requirements:
1. Comply with Laws and Regulations, including: a. Americans with Disabilities Act of 1990 (Public Law 101-336), Appendix A of 28 CFR 36, Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG).
2. Electrical Components, Devices, and Accessories:

1.07 WARRANTY

A. Provide Manufacturer's standard limited warranty that its galvanized baseball backstop, gates, and all chain link fence is free from coating flaking and peeling and other defects in material or workmanship for a minimum period of 10 years from the date of purchase. See Manufacturer's Warranty for full details.

B. General Warranty: The special warranties specified in this Article shall not deprive the City of other rights or remedies the City may otherwise have under the Contract Documents and

shall be in addition to and run concurrent with other warranties made by the General Contractor or their subcontractors under the Contract Documents.

C. Special Warranties:

1. Submit manufacturer's written ten-year warranty against rusting or corrosion of metal.

1.08 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver and handle in manner that is in compliance with manufacturer's recommendations and that avoids damaging coatings

B. Discharge materials carefully and store on raised platform pallets. Do not dump onto ground.

C. Delivery of Materials:

1. Packaging and Marking: Comply with CLFMI CLF 2445.

2. Deliver materials in manufacturer's original, unopened packaging with all factory-applied tags, labels and other identifying information intact, legible and accurately representing material on approved submittals.

D. Storage of Materials:

1. Store all materials under weatherproof cover, off the ground and away from other construction activities.

2. Do not store material in a manner that would create a humidity chamber. Provide for free movement of air under protective cover and between components of the fencing.

1.09 FIELD MEASUREMENTS AND TEMPLATES

A. Contractor shall secure all field measurements required for proper and adequate fabrication and installation of the work covered by this section. Exact measurements are the Contractor's responsibility. Furnish templates for exact location of items to be embedded in concrete and any setting instruction.

PART 2 PRODUCTS

2.00 GENERAL

A. Chain link fence manufacturers and contractors may be Cyclone Fence, Interstate Fencing, Anchor Fence, Oakland Fence Co., Master Halco, Inc, Ameristar, Inc., or approved equal.

B. All Chain link fence subcontractors must comply with the monitoring and enforcement by the California Department of Industrial Relations, pursuant to Labor Code section 1771.4.

C. Obtain chain link fence, framework, and gates including all accessories, fittings, and fastenings from a single source.

D. Fencing shall include fabric covering, framework, concrete footings, gates, hardware, and all appurtenances and accessories as required for complete installation. All members shall conform with CLFNI standards, FS RR-F-191G/GEN, and as specified below.

E. Products shall be from qualified manufacturers having a minimum of five years' experience manufacturing chain link fencing.

2.01 SYSTEM PERFORMANCE

A. Design Considerations:

1. Verify size of framing members shown or indicated in the Contract Documents. Where structural analysis indicates the need, provide additional members, or increased member size, thickness or weight.

2. Modifications may be made only as necessary to meet Site conditions to ensure proper fitting and support of the Work and only upon submittal of Shop Drawings and receipt of approval by the Project Engineer or Landscape Architect.

2.02 CHAIN LINK FENCE FABRIC

A. One-piece fabric widths, for fencing 12 feet and less in height, complying with CLFMI CLF 2445.

B. Fabric shall be 9-gauge zinc coated core wire, woven, hot-dipped galvanized after weaving, conforming to ASTM A116-88 and ASTM A392 with a uniform mesh size + 1/8" between the parallel sides.

C. Diamond/mesh spacing:

1. Diamond pattern shall be 1.5" spacing, typical.

D. Wire: Galvanized wire used in the fabric shall have a tensile strength of 75,000 lbs. per square inch based on the cross sectional areas of the galvanized wire. In the test for tensile strength, one sample shall be tested without removing bends caused by weaving the wire with the mesh, and for the section sample to be tested; the wire strand shall be carefully straightened. The tensile strength shall be the average of the two samples.

E. Fabric shall be knuckled top and bottom, single width fabric to full height of fence; all fencing in this Contract.

F. The fabric shall be fastened to the line posts and rails by means of ties spaced approximately 14" apart.

G. Fabric shall be attached to the terminal post by means of a tension strip held by specially designed clips.

H. Galvanizing: Framework material shall have 1.2 oz. coating, and withstand 10 one-minute immersions under the Preece Test, and conform to ASTM B6.

I. Copper Content: Material specified as copper bearing shall have copper content of at least 0.20% and not over 0.60%.

J. Weights and measurements to conform to Federal Specification RRF 19 LE, dated October 20, 1967.

2.03 FENCE FITTINGS, ACCESSORIES, AND APPURTENANCES

A. All fence fittings shall be galvanized.

B. Chain link fence accessories: Per ASTM F 626, Provide items required to complete fence system. Galvanize each ferrous metal item in accordance with ASTM A 153 and finish to match framing.

C. Post and Line Caps: For all corners, gates and terminal posts, fabricated from pressed steel, wrought iron, or cast aluminum alloy iron, designed as weather-tight closure cap, for tubular posts. Galvanized with a minimum of 1.2 oz/ft^2 of zinc or from aluminum alloy 360.0 conforming to ASTM B85. Caps shall fit snuggly over posts and exclude moisture from inside tubular posts. Provide one cap for each post.

D. Rail and Brace Ends: Fabricated from pressed steel or cast iron, galvanized with a minimum of 1.2 oz/ft^2 of zinc or from aluminum alloy 360.0 (ASTM B85), 356.0 or 713.0 (ASTM B26).

E. Top Rail and Bottom Rail Sleeves: Fabricated from pressed steel or cast iron and galvanized with a minimum of 1.2 oz/ft^2 of zinc or from aluminum alloy 6063-T6 (ASTM B221 or B429). The thickness is 0.051 in. of steel or 0.062 in of aluminum alloy, minimum. Length shall be 6 foot minimum. 7" expansion sleeve with spring, allowing for expansion and contraction of top and bottom rail.

F. Tension and Brace Bands: Fabricated to prevent movement along the rail and are made from pressed steel or cast iron, galvanized with a minimum of 1.2 oz/ft^2 of zinc or from aluminum alloy 6063-T5, or 6063-T6, or 8176-H19 (ASTM B211 or B221) or B429). Tension bands have a minimum material thickness of 14ga (0.074 in.) and a minimum width of ¾ inch. Brace bands have a minimum material thickness of 12ga (0.105 in.) and a minimum width of ¾ inch.

G. Tension/Stretcher Bars: Fabricated from merchant quality steel and galvanized with a minimum of 1.2 oz/ft^2 of zinc. Steel tension bars used to connect 1-3/4 inch and 2 inch mesh fabric to end, gate and corner post are a minimum of 3/16" by 3/4" for fabric heights over 5 feet. Minimum length of a tension bar is 2 inches less than the full height of the chain link fabric. Provide tension bars where chain link fabric meets terminal posts.

H. Provide one stretcher bar for each gate and end-post and two for each corner- and pull-post, except where fabric is integrally woven into the post

I. Tension/Stretcher Bar Bands: Pressed steel, galvanized, 0.078-inch to 0.108-inch thick depending on post diameter, spaced not greater than 15 inches on centers to secure stretcher bars to end-, corner-, pull-, and gate-posts. Bands may also be used with special fittings for securing rails to end-, corner-, pull-, and gate-posts.

J. Tie Wires and Clips: 9 gauge (0.148") galvanized steel wire for attachment of fabric to line posts. Double wrap 13 gauge (0.092") for rails and braces. Hog ring ties of 12-1/2 gauge (0.0985") for attachment of fabric to tension wire.

K. Tie Wires, Types and Sizes: 9-gauge galvanized steel wire; tensile strength 55-65 ksi; zinc coated 0.80 oz/ft2 per ASTM A 641, Class 3.

L. Tension Wire: Conforms to the requirements of ASTM A 824, 7 ga, zinc or aluminum coated; with a minimum weight of 1.2 oz/ft^2 of zinc, Type I coated; or with a minimum weight of 0.40 oz/ft^2, Type II coated. Minimum break strength is 1950 lbs.

M. Concrete: In accordance with Section 03 00 05, Cast-In-Place Concrete.

2.04 FENCE POST FRAMEWORK AND SCHEDULE

A. General: The following table presents actual OD and equivalent nominal NPS size and trade size of round members:

Actual OD (inches)	NPS Size (inches)	Trade Size (inches)
1.315	1.0	1-3/8
1.660	1.25	1-5/8
1.900	1.5	2
2.375	2.0	2.5
2.875	2.5	3
3.500	3.0	3.5
4.000	3.5	4
6.625	6.0	6-5/8
8.625	8.0	8-5/8

B. Pipe shall be commercial grade, plain-end steel pipe with standard-weight walls, hot-dipped galvanized, welded Schedule 40 steel pipe, with a tensile strength of 48,000 PSI, minimum, and yield strength of 30,000 PSI, minimum, and shall comply with ASTM F1083, and be protected with zinc, as specified.

C. Minimum zinc coating weight of Schedule 40 pipe is 1.8 oz/ft2 in accordance with ASTM A90/A90M.

D. Weight tolerance of pipe shall be ±10%, and pipe diameter tolerance shall be 1/64 inch (0.4 mm) over for pipes 1-1/2" and under; and the outside pipe diameter tolerance for pipe greater than 1-1/2" shall be ±1% of that size specified.

E. Install fence posts in accordance with ASTM 567.

F. Provide shop drawings with the locations of all posts necessary.

G. Schedule of Pipe Sizes –6 foot fabric height.

Member	Outside Diameter Inches	Lbs. Per LF	OC (max.) Spacing	Footing Depth/Dia
End, Corner and Pull Posts	4" (2.875)	9.11	10' OC	36"/12"
Intermediate Line Posts	2-3/8" (2.375)	3.65	10' OC	36"/12"
Gate Frame	1-7/8" (1.90)	2.72	10' OC	36"/12"
Top, Bottom & Mid Rail & Post Braces	1-5/8" (1.660)	2.27	------	

H. Schedule of Pipe Sizes – 10 foot fabric height.

Member	Outside Diameter Inches	Lbs. Per LF	OC (max.) Spacing	Footing Depth/Dia
End, Corner and Pull Posts	4"	9.11	10' OC	36"/12"
Intermediate Line Posts	4"	9.11	10' OC	36/12"
Top, Bottom & Mid Rail & Post Braces	1-7/8" (1.90)	2.72	-------	

I. BRACES: All end, or terminal, posts shall be braced with 1-5/8" O.D. horizontal pipe bracing of the same material as the top, bottom and mid rails, securely attached to the terminal and first line post with malleable iron fittings. They shall be truss braced from the first line post to the bottom of the terminal post, with a 3/8" galvanized truss rod assembly to provide the proper tension. Corner posts shall be braced in both directions.

J. Fence shall have continuous top and bottom rails. For fence heights of 10 feet or greater, a mid rail shall be included

K. Fittings: Comply with ASTM F626.

L. End, Corner, and Pull Posts: Provide end, corner, and pull posts of following minimum sizes:
   1. Up to six feet fabric height: a. 2.375 inches OD pipe weighing 3.65 pounds per linear foot.
   2. Over six feet fabric height and less than eight feet fabric height: a. 2.875 inches OD pipe weighing 5.79 pounds per linear foot.
   3. Over eight feet fabric height: a. 3.50 inches OD pipe weighing 7.58 pounds per linear foot.

M. Line Posts: Provide line posts of following minimum sizes and weights:
   1. Up to six feet fabric height: a. 1.90 inches OD pipe weighing 2.72 pounds per linear foot.
   2. Over six feet fabric height and less than eight feet fabric height: a. 2.375 inches OD pipe weighing 3.65 pounds per linear foot.
   3. Over eight feet fabric height: a. 3.50 inches OD pipe; weight of 7.58 pounds per linear foot.

N. Gate Posts: Provide gate posts for supporting single gate leaf, or one leaf of a double gate installation, for nominal gate widths as follows:
   1. Up to six feet wide: a. 2.875 inches OD pipe weighing 5.79 pounds per linear foot.
   2. Over six feet wide and up to 13 feet wide: a. Four inches OD pipe weighing 9.11 pounds per linear foot.

3. Over 13 feet wide and up to 18 feet wide: a. 6.625 inches OD pipe weighing 18.97 pounds per linear foot.
4. Over 18 feet wide: a. 8.625 inches OD pipe weighing 28.55 pounds per linear foot.

O. Top Rail: Provide top rails, unless otherwise shown or indicated, conforming to the following:
1. 1.660 inch OD pipe weighing 2.27 pounds per linear foot.
2. Provide in manufacturer's longest lengths, with expansion-type coupling 0.051-inch thick rail sleeves, approximately seven inches long, for each joint.
3. Provide means for attaching top rail securely to each gate, corner, pull, and end post.

P. Center Rails Between Line Posts: Provide center rails between line posts at corners only, (or where shown), consisting of 1.660-inch OD pipe weighing 2.27 pounds per linear foot.

Q. Roll-Formed Steel: Provide rolled steel shapes produced from structural-quality steel conforming to ASTM A1011, Grade 45, with minimum yield strength of 45,000 pounds psi. Protective coating system shall conform to ASTM F1043, as specified.

R. Post Brace Assembly: Provide bracing assemblies at end and gate posts, and at both sides of corner and pull posts, with horizontal brace located at mid-height of fabric.

S. Use 1.900-inch OD pipe weighing 2.72 pounds per linear foot for horizontal brace and 3/8-inch diameter rod with turnbuckle for diagonal truss.

2.05 FINISHING

A. Chain-Link Fence Fabric:
1. Aluminized finish with not less than 0.40 ounces aluminum per square foot, complying with ASTM A491, Class II.

B. Framework and Appurtenances: Provide the following finishes for steel framework, auxiliary system components, and miscellaneous accessories:
1. Galvanizing: Zinc for galvanizing shall be of High Grade or Special High Grade conforming to ASTM B6 with maximum aluminum content of 0.01 percent. Galvanize metal using hot-dip process in accordance with the following: a. Structural Iron and Steel Shapes: ASTM A123 b. Rolled-Form Sheet Steel: ASTM A653 c. Hardware and Accessories: ASTM A153 d. Fittings: ASTM F626 e. Pipe: ASTM A53 2. Provide minimum weights of zinc as follows:
a. Pipe: 1.8-ounces of zinc per square foot. Apply Type A coating both inside and outside according to ASTM F1043, as determined by ASTM A90.
b. Rolled-Form Sheet Steel: 4.0-ounces of zinc per square foot of surface area. c. Hardware and Accessories: Zinc weights in compliance with Table 1 of ASTM A153.
2. Fabrication Tolerances: 1. Fabric, posts, rails, and other supports shall be straight or uniformly curved to provide the profiles shown, to dimensional tolerance of 1/16-inch in 10 feet without warp or rack in the finished Work.

C. Welded Joints:
1. Repair zinc coatings at welded joints by applying zinc-rich paint, as specified in ASTM A780.
2. Repair polymer-coated steel by applying an epoxy primer, intermediate coat and urethane topcoat

2.06 CONCRETE FOOTINGS

A. Concrete: Minimum 28 day compressive strength of 2500 PSI.

B. Where mow band is proposed for installation, all concrete footing shall be held short to accommodate mow band above.

PART 3 EXECUTION

3.00 INSPECTION

A. Verify areas to receive fencing are completed to final grades and elevations.

B. Ensure property lines and legal boundaries of work are clearly established.

C. Examine the substrate under which fencing is to be installed. Notify the Project Landscape Architect, in writing, of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.01 FINISHED GRADES

Installation of fencing shall not be started until final grading has been completed.

3.02 ERECTION

A. Comply with CLFMI Step-by-Step Installation Guide and ASTM F567. Do not begin installation and erection of fencing until final grading is completed.

B. Excavation: Drill holes of diameters specified, for post footings in firm, undisturbed or compacted soil.

1. For posts set in cast-in-place concrete, provide hole diameters dug or drilled a minimum of four times the largest cross section of post.

a. Unless otherwise shown or indicated, excavate hole depths approximately three inches lower than bottom of post, with bottom of posts set not less than two feet below the surface of finished grade when in firm, undisturbed soil, plus an additional three inches for each foot increase in the fence height over four feet.

2. Spread soil from excavations uniformly adjacent to fence line, or on adjacent areas of the Site, as directed by ENGINEER.

3. When solid rock is encountered at ground surface, drill into rock at least 12 inches for line-posts and at least 1.5 feet for end-, pull-, corner-, and gateposts. Drill hole at least one inch greater diameter than largest dimension of post to be placed.

a. If solid rock is below soil overburden, drill to full depth required, except penetration into rock need not exceed the minimum depths specified above for rock encountered at ground surface.

C. Setting Posts: Remove loose and foreign materials from sides and bottoms of holes, and moisten soil prior to placing concrete.

1. Center and align posts in holes 3-inches above bottom of excavation.

2. Posts shall be set in concrete footings, except as otherwise shown or specified. Place concrete around posts in continuous pour, and vibrate or tamp for consolidation. Check each post for vertical and top alignment, and hold in position during placement and finishing operations.

3. Extend concrete to two inches above ground surface, or to two inches below ground surface if cover of sod, bituminous asphalt paving, or other material is shown or indicated to conceal concrete. Crown to shed water away from posts.

4. Extend footings for gate posts to underside of bottom hinge. Set keeps, stops, sleeves, and other accessories into concrete as required.

5. Keep exposed concrete surfaces moist for at least seven days after placement, or cure with membrane curing materials, or other acceptable curing method.

D. Concrete Strength: Allow concrete to attain at least 75 percent of its minimum 28-day compressive strength, but in no case sooner than seven days after placement, before installing rails, tension wires, barbed wire, or chain-link fabric.

1. Do not stretch and tension fabric and wires, and do not hang gates, until concrete has attained its full design strength.

E. Posts and Rails:

1. Line Posts: Set posts in cast-in-place concrete footings as specified, spaced not more than ten feet on centers. Provide caps on top of each post to exclude moisture and to receive top rail, unless equal protection is afforded by combination post-top cap and barbed wire supporting arm, where barbed wire is required.
2. Top Rails: Run rail continuously through post caps or extension arms, bending to radius for curved runs. Provide expansion couplings as recommended by fencing manufacturer to form continuous rail between terminal posts.
3. Brace Assemblies: Install braces so posts are plumb when diagonal rod are under proper tension. Install brace assemblies at end-posts and at both sides of corner- and pull-post panels. Panels adjacent to gates shall have intermediate horizontal rails and diagonal bracing. Diagonal bracing shall run from center of first line-post to bottom of terminal-post.

F. Chain-Link Fabric:
1. Install fabric on security side of fence, and anchor to framework so that fabric remains in tension after pulling force is released. Fasten to terminal posts and gate posts with tension bars threaded through mesh and secured with tension bands at maximum intervals of 14 inches.
2. Tie to line-posts, gate frames and top and bottom rails with tie wires spaced at maximum 12 inches on posts and two feet on rails.
3. Connect tension bars to posts and frames by means of adjustable bolts and bands spaced not more than 14 inches apart.
4. Leave approximately two inches between finish ground surface and bottom selvage, except where bottom of fabric extends into concrete.
5. Join roll of chain-link fabric by weaving a single picket into the ends of roll to form continuous mesh.

G. Stretcher Bars: Thread through or clamp to fabric four inches on centers, and secure to posts with metal bands spaced 15 inches on centers.

H. Gates: Install gates plumb, level, and secure for full opening without interference. Install ground-set items in concrete for anchorage, as shown on approved Shop Drawings. Adjust hardware for smooth operation and lubricate where necessary.

I. Tie Wires: Use U-shaped wires conforming to diameter of pipe. Clasp pipe and fabric firmly with ends twisted at least two full turns. Bend ends of wire to minimize hazard to persons and clothing.

J. Fasteners: Install nuts for tension band and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts

3.03 CHAIN LINK FENCE FRAMING INSTALLATION

A. Install chain link fence, including fence fabric, in accordance with ASTM F567 and the manufacturer’s instructions

B. Line posts shall be set a maximum of 10 feet on center.

C. Drill or dig holes for post and other footing in firm, undisturbed or compacted soil. Footing holes and post embedment shall be in accordance with the drawings and fence manufacturer's standards, but not less than 12 inches in diameter and 36 inches deep.

D. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom 36” below surface when in firm, undisturbed soil

E. Concrete set all posts. Hold the top of all footings short to accommodate the mow band, as delineated on the plans. Place concrete around posts in a continuous pour.

F. If fence footings are exposed at the finished grade or finished surface, trowel finish around post. Slope to direct water away from posts.

G. Check each post for vertical and top alignment, and maintain in position during placement and finishing operations.

H. Posts not set plumb and true shall be removed and replaced; bending posts to make them plumb will not be permitted.

I. Rail: Install single lengths between posts.

J. Providing couplings in top rail approximately every 20 feet. Couplings shall be outside sleeve type and at least 7 inches long, one coupling in every five shall contain a heavy spring to take up expansion and contraction of top rail. Top rail shall pass through base of line post tops and from a continuous brace from end to end at each stretch of fence. Top rail shall be securely fastened to terminal posts by pressed steel connections.

K. Braces: All terminal posts on fence shall be braced with horizontal pipe bracing of the same material as the top rail, securely attached to the terminal and first post with malleable iron fittings. They shall be truss braced from the first line post to the bottom of the terminal post, with a 3/8 inch galvanized truss rod assembly or #7 gauge galvanized wire twisted to the proper tension. Corner posts shall be braced in both directions.

3.04 CHAIN LINK FABRIC INSTALLATION

A. Install fence in accordance with ASTM F 567.

B. Fabric shall be fastened to end, corner and gate posts by means of stretcher bars threaded through the fabric. Stretcher bar fastening bands connected to end corner of gate post every 14 inches. Do not splice fabric.

C. Apply fabric on field side of fence. Attach so that fabric remains in tension after pulling force is released. Leave approximately 2” between finished grade and bottom selvage. Attach fabric with wire ties or clips to line posts at 15” on center ad to rails, braces and tension wire at 24” on center.

D. Bolts shall not protrude more than 1/4 inch beyond nits after tightening. File rough edges smooth. Wherever bolts are cut minor brakes in film occur, consult Project Landscape Architect and, with his/her approval, renew galvanizing preparation and vinyl coating (if applicable) in matching color applied according to manufacturer's printed instructions.

E. All posts shall be plumb and rigid after installation. Rails shall be straight and tight. Chain-link fabric shall be smooth and uniformly stretched tight and straight.

3.05 FENCE ACCESSORIES

A. Tie Wires: Bend ends of wire to minimize hazards to persons and clothing

B. Fasteners: Install nuts on side of fence opposite fabric side for added security and protection.

3.06 MEASUREMENT AND PAYMENT

A. If Alternate 1 is awarded, the contract unit price paid per linear foot for **“6’ Chain Link Fence, 1.5” Diamond Fabric, Galvanized with Footing”** shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all the work covered in this section, including, but not limited to, all excavation related to fence work, installation of fence fabric and fasteners completely in place as shown on the plans, as required by these Special Provisions, and as directed by the City’s Engineer.

B. If Alternate 1 is awarded, the contract unit price paid per linear foot for **“9’ Chain Link Fence, 1.5” Diamond Fabric, Galvanized with Footing”** shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all the work covered in this section, including, but not limited to, all excavation related to fence work, installation of fence fabric and fasteners completely in place as shown on the plans, as required by these Special Provisions, and as directed by the City’s Engineer.

END OF SECTION

SECTION 32 33 00 SITE FURNISHINGS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1, General Requirements, apply to the work specified in this Section.

B. Refer to all other sections, determine the extent and character of related work, and coordinate all work to produce a complete, properly constructed product.

C. Examine contract documents for requirements that affect work of this section. Other specification sections that directly relate to the work of this section include, but are not limited to:

1. Section 03 11 00 “Concrete Formwork”
2. Section 03 20 00 “Concrete Reinforcement”
3. Section 03 30 00 “Cast in Place Concrete”
4. Section 31 20 00 “Rough Grading”
5. Section 32 11 23 “Aggregate Base Course”

1.02 DESCRIPTION OF WORK:

A. The work in this division includes the furnishing of all labor, materials, equipment and services necessary to complete the work described on the Drawings and as herein specified, but is not limited to:

1. Basketball stanchion and footing, backboard and hoop
2. Metal Bench
3. Trash Receptacle and Recycle Receptacle

1.03 REFERENCES AND STANDARDS

A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. Manufacturers Data and Recommended Installation Requirements
2. Americans with Disabilities Act of 1990 (ADA).
3. U.S. Consumer Product Safety Commission (CPSC) “Handbook for Public Playground Safety.”
4. American Society for Testing and Materials (ASTM) F1487 “Standard Consumer Safety Performance specification for Playground Equipment for Public Use.”

1.04 SUBMITTALS

A. Manufacturers Product Data: Provide manufacturers product data prior to actual field installation work, for Architects or Owners representatives review.

B. Shop Drawings: Provide drawings of the manufacturers recommended installation and foundation requirements prior to actual field installation work, for City Project Landscape Architect review.

1.05 QUALITY ASSURANCE

A. Manufacturers warranties shall pass to the Owner and certification made that the product materials meet all applicable grade trademarks or conform to industry standards and inspection requirements.

1.06 PRODUCT DELIVERY AND STORAGE

A. Materials delivered to the site shall be examined for damage or defects in shipping. Any defects shall be noted and reported to the Owners representative. Replacements, if necessary, shall be immediately re-ordered, so as to minimize any conflict with the construction schedule. Sound materials shall be stored above ground under protective cover or indoors so as to provide proper protection.

PART 2 PRODUCTS

2.01 GENERAL

A. Products named are indicative of the features, form, finish, and quality of the furnishings desired. Products of manufacturers other than those named may be acceptable upon proof of equality.

B. All products shall be new, delivered to the site in manufacturer's original containers, and protected at all times from damage during shipping, storage, and handling prior to and during installation.

2.02 BASKETBALL STANCHION, BACKBOARD AND HOOP

A. 5-9/16” outside diameter (O.D.) schedule 40, galvanized steel pipe stanchion, either single offset vertical, or offset gooseneck

B. 6-foot extension arm from the centerline of the post to the face of backboard.

C. Horizontal section shall be fabricated with a special, slotted mounting plate to level the backboard and goal. Bolts from the front mounted goal shall mount directly through the backboard and into the mounting plate, or horizontal extension, to eliminate backboard stress

D. Backboard shall be supported by two or more, 1" O.D., 14ga. wall, steel sway braces that terminate on the support tube behind the backboard. Diagonal sway brace tubes shall be secured to the horizontal support tube by means of a heavy steel brace clamp, which is adjustable to plumb backboard.

E. All welds shall be treated with cold-galvanizing compound. Sway brace tubes have a zinc finish. All hardware shall be zinc-coated.

F. Backboard shall be molded for high tensile strength rectangular fiberglass, 42”h x 72” w x 1-1/8” (min) thick core, white, with orange perimeter and target area markings. Backboard should be molded from high tensile strength fiberglass, or acrylic.

G. Goal/rim shall be a single rim, hinged, breakaway or flex, with nylon net. Fixed goals are acceptable in lieu of flex goals.

H. 5’-7” minimum depth post embedment in footing, secured with welded anchor lugs. 3’ diameter footing. Concrete footing depth shall be 6’ depth.

I. Acceptable products LA Steelcraft or approved equal:

1. Post: LA-12C56 – curved post/single 5-9/16” OD with 6’ Extension, 290 Lbs with 1” OD galvanized steel bracing.

2. Finish/Color: Powder coated, black

3. Basketball BackBoard : LA-09 – Deluxe Heavy-Duty Fiberglass Rectangle, 48” H x 72” W, 1-1/8” thick core, white with OTA/OBM orange target and border.

4. Hoop and net: LA-45 Heavy-Duty Double Rim with Universal Mount Plate with LA-34 super nylon net.

2.03 METAL BENCH

A. Steel Bench: Bench 160 – 60, with mid span arm rest, or approved equal.

Model: 6’ length

Color: powder coated, black

Installation: embedded

Available: DuMor Inc. P.O. Box 142, Mifflintown, PA 17059.

Contact: Rebecca Whitten, Ross Recreation, 100 Brush Creek Road, Suite 206, Santa Rosa, CA. Phone: (707) 538-3800; Fax: (707) 538 3826.

2.04 STEEL TRASH RECEPTACLE

A. Trash Receptacle: Receptacle 157 by DuMor, Inc., or approved equal.

Model: #157-32SH-25BT, side opening, with 18-gauge CR steel shield and large bonnet cover. Liner Size: 32-Gallon. Surface mount with expansion anchor bolts as provided by the manufacturers.

Colors: powder coated, black

Lettering to read: “Trash Only”

Available: DuMor Inc. P.O. Box 142, Mifflintown, PA 17059.

Contact: Rebecca Whitten, Ross Recreation, 100 Brush Creek Road, Suite 206, Santa Rosa, CA. Phone: (707) 538-3800; Fax: (707) 538 3826.

2.05 STEEL RECYCLING RECEPTACLE

A. Recycling Receptacle: Receptacle 157 by DuMor, Inc., or approved equal.

Model: #157-32SH-25BT, side opening, with 18-gauge CR steel shield and large bonnet cover. Liner Size: 32-Gallon. Surface mount with expansion anchor bolts as provided by the manufacturers.

Colors: powder coated, Blue

Lettering to read: “Bottles and Cans Only”

Available: DuMor Inc. P.O. Box 142, Mifflintown, PA 17059.

Contact: Rebecca Whitten, Ross Recreation, 100 Brush Creek Road, Suite 206, Santa Rosa, CA. Phone: (707) 538-3800; Fax: (707) 538 3826.

PART 3 EXECUTION

3.01 INSTALLATION

A. For all products, specifically described below, or not, installation of products shall be as shown on the drawings, or according to manufacturer's instructions. If discrepancies are found, or if information is lacking, consult with Project Landscape Architect immediately, prior to beginning the work.

B. Coordinate in-ground installation of site furnishings with installation of concrete paving and other paving materials.

C. All footings in concrete paving areas shall be held short with top of footing at base of concrete paving above.

D. Equipment and work shall include all miscellaneous attachments, materials and field adjustments as necessary to provide complete installation and meet final finish grade requirements.

E. Coordinate delivery and installation of site furnishings with other site work. Avoid early installation that results in undue exposure to damage.

F. Install all items plumb, and true to line and grade.

G. Install concrete footings as specified under Division 3- Concrete or per manufacturer's recommendations, whichever is more stringent.

H. Replace damaged furnishings; no patching or repair will be allowed.

I. All excess excavation spoils not needed in the backfill effort shall be disposed of in the undeveloped portion of the park, spread and disked to match the condition of the undeveloped surface.

3.02 STEEL TRASH / RECYCLE RECEPTACLE

A. All trash receptacles shall have surface mounted footings, installed per the manufacturer's instruction and recommendations.

3.03 METAL BENCHES

A. All benches shall have embedded footings, installed per the manufacturer's instruction and recommendations. Hold footings short.

3.04 PROTECTION OF INSTALLED EQUIPMENT

A. Protect equipment from damage at all times, until final acceptance of the Work. If damage occurs to any equipment prior to final acceptance, Contractor shall, at his own expense, make replacement to satisfaction of the City Project Landscape Architect.

3.05 MEASUREMENT AND PAYMENT

A. The contract unit price paid for "**Basketball Stanchion, Backboard and Hoop"** of the unit price schedule shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work covered in this section, including excavation, concrete footings and attachments, complete and in place as shown on the plans, as required by the Special Provisions, and as required by the City Project Landscape Architect.

B. The contract each unit price paid for, "**Trash Receptacle", "Recycle Receptacle",** and **"Metal Bench"** of the unit price schedule shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work covered in this section, including excavation, concrete footings, and attachments, complete and in place as shown on the plans, as required by the Special Provisions, and as required by the City Project Landscape Architect.

END OF SECTION

SECTION 32 84 00 IRRIGATION ADJUSTMENTS

PART 1 GENERAL

1.01 SUMMARY DESCRIPTION

A. Scope of Work:

1. Adjust existing irrigation heads as a result of installation of concrete curb around basketball court and installation of turf in demolished basketball court area, as shown on the Drawings and described herein.
2. Work to include (not necessarily a complete list of work);
   a. Existing valves to remain operational.
   b. Existing laterals to remain as is and operational. Cut in new heads and lateral connects where indicated in the drawings.
   c. Adjust existing sprinkler heads/rotors to achieve and maintain head to head coverage.
   d. Install new irrigation heads and laterals as shown on the plans
   e. Tests.
   f. Record drawings.

B. Related Sections:

1. Section 02 41 00 “Site Demolition”
2. Section 32 92 23 “Sod”

1.02 SUBMITTALS

A. Materials List: Within fifteen (15) days after the Award of Contract, and before any irrigation system materials are delivered to the job site, submit to the City a complete list of all irrigation system materials proposed to be furnished and installed for the project.

1. Show manufacturer’s name and catalog number for each item; furnish complete catalog cuts and technical data, and furnish the manufacturer’s recommendations as to method of installation.
2. Do not permit any irrigation system component to be brought onto the job site until it has been approved in writing by the City.

B. Record Drawings:

1. Record drawings shall be submitted to the City for approval. Refer to Section 01 77 00.
2. Drawings shall include dimensions from two permanent points of reference such as building corners, sidewalks, or road intersections for the location of the following items:
   a. Connection to existing water lines.
   b. Relocated existing equipment.
   c. Gate valves.
   d. Routing of sprinkler pressure lines.
   e. Sprinkler control valves.
   f. Routing of control wire.

C. Controller Charts:

1. Controller charts shall be prepared by Contractor showing modifications to existing irrigation system.
2. Provide one controller chart for each controller supplied.

3. The chart shall show the area controlled by the automatic controller and shall be the maximum size which the controller door will allow when rolled up.
4. The chart shall be a reduced drawing of the actual as-built system and shall be readable when reduced.
5. The chart shall be a black line print and different colors shall be used to indicate the area of coverage for each station.
6. When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being a minimum 10 mils if required by Owner.
7. As-built record drawings and controller charts shall be completed and approved prior to final inspection of the irrigation system.

1.03 IRRIGATION PRE-CONSTRUCTION MEETING

A. Prior to construction, Contractor shall coordinate an on-site pre-construction meeting with representation from City park Maintenance Staff, City Project manager and City Project Landscape Architect to review existing irrigation System and confirm function of system. Any discrepancies shall be noted for reference and are not the responsibility of the Contractor, unless otherwise noted.

B. Existing utilities and conditions: prior to trenching, the Contractor shall locate all utility lines, including but not limited to water, sewer, sanitary sewer, gas, voltage and/or fiber optic lines and shall take proper precautions not to damage or disturb such improvements. If a conflict exists between obstacles and the proposed work. The Contractor shall promptly notify the City. Do no proceed until all discrepancies have been resolved.

1.04 QUALITY ASSURANCE

A. Manufacturer's directions and detailed drawings shall be followed in all cases where points are not shown in the Drawings and Specifications.

B. Drawings are generally diagrammatic and indicative of the work to be installed and do not show all offsets, fittings, sleeves, and other parts which may be required. Contractor shall carefully investigate the structural and finished conditions affecting all work and plan accordingly, furnishing such fittings, and other appurtenances as may be required to meet such conditions. The Work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting, and architectural features.

C. Before commencing irrigation system installation, Contractor shall resolve obstructions, grade differences or discrepancies in area dimensions that might not have been considered in engineering and shown on the Drawings.

1.05 COORDINATION AND SCHEDULING

A. Contractor shall City in advance for the following observation meetings, according to the time indicated, and shall provide documentation to Engineer that the following meetings occurred and their outcome.

1. Pre-job conference – 7 days.
2. Coverage test (prior to any planting installation) – 48 hours.
3. Final inspection – 7 days.

PART 2 PRODUCTS

2.01 LOW VOLTAGE CONDUIT AND SLEEVING

A. Plastic: Schedule 40 PVC, approved for use as non-metallic raceway for 90 degree Centigrade conductors. Carlon, CertainTeed, or Kraloy.

B. Provide fittings and accessories approved for the purpose equal in all respects to the conduit or raceway.

C. Color: GREY

D. Solvent for all PVC pipe shall be #711 Gray, along with #P-70 primer, NSF approved as manufactured by Industrial Polychemical Service, Gardena, California, or approved equal.

E. Burial depths for conduit below finished grade, and sleeving, are as follows:

1. Per Drawings

F. Sleeve below all hardscape elements with class 315 PVC twice the diameter of the pipe or wire bundle within, or as delineated on the plans.

G. Under Hardscape Crossings: Sleeves shall extend a minimum of 24 inches beyond all sidewalks, or shall be extend 24" beyond the back edge of the curb, where noted on the plans.

2.02 LOW VOLTAGE ELECTRICAL WIRE (2 WIRE)

A. Contractor shall utilize existing wires for connections. Where existing wires are damaged due to Construction activities, materials must comply with below.

B. All low voltage control Wire: All wiring to be used for connecting the automatic controller to the electric solenoid actuated remote control valve shall be Type UF-600V, 7 strand or solid copper, PVC insulation, single conductor, UL approved underground feeder cable, approved for direct burial. Common ground wire: Size #14-1 wire with a white insulating jacket.

C. Irrigation Low Voltage Control Wire: All wiring to be used for connecting the automatic controller to the electric solenoid actuated remote control valve shall be Type UF-600V, 7 strand or solid copper, PVC insulation, single conductor, UL approved underground feeder cable, approved for direct burial. Common ground wire: Size #14-1 wire with a white insulating jacket.

D. Common ground wire: Size #12-1 wire with a white insulating jacket.

E. Control wire servicing remote control valves: Size #14-1 wire with insulating jacket of color other than white.

F. Splices shall be weather-proofed by using

G. 3M Scotchcast #3570G-N Epoxy packs, or approved equal

H. Pull rope with tracer wire to be included for all conduit.

2.03 TRENCH BACKFILL (PVC PIPE) UNDERNEATH CONCRETE PAVING

A. Trench backfill shall be used in irrigation pipe trenches underneath asphalt and concrete paving only.

B. All other pipe trenches in landscaping shall be backfilled with native soil previously excavated from the trench.

C. Graduation requirements for trench backfill, refer to Section 11A and 11B, City of Fremont Standard Trench Backfill Specification, Standard Specifications, dated January 1995 (amended) or the sieve analysis provided below.

D. Sand equivalent: 20 min, per CTM217

E. Sieve Analysis – CTM 202, gray sand

Sieve Size	Sieve Size	Percent Passing
25.0 mm	1"	100

19.0 mm	3/4”	100
12.5 mm	1/2”	100
9.5 mm	3/8”	100
4.75 mm	#4	80
2.36 mm	#8	56
1.18 mm	#16	41
600 um	#30	33
300 um	#50	27
150 um	#100	22
75 um	#200	17.3

2.04 PIPE AND FITTINGS

A. Lateral Line PVC pipe shall bear the following markings:

a. Manufacturer’s name

b. Nominal pipe size

c. Class or Schedule

d. Pressure rating in PSI

e. NSF

f. Date of extrusion

B. Solvent weld main lines: At changes in direction or branch mains, use appropriate Schedule 80 PVC solvent weld fittings as approved by the Uniform Plumbing Code.

C. All fittings shall bear the manufacturer’s name or trademark, material designation, size, applicable I.P.D. schedule and NSF Seal of approval.

D. Inside diameter of pipe shall be the same size as iron pipe.

E. PVC Type I shall not be threaded.

F. PVC fittings shall be PVC Type II, Schedule 40 NSF approved.

G. Caution shall be utilized in handling Type I pipe due to the possibility of cracking or splitting.

H. When connection is plastic to metal, male adapters shall be used unless otherwise noted or detailed. The Male adapter shall be hand tightened, plus one turn with a strap wrench. Joint compound shall be non-lead base (Teflon paste or equal). Teflon tape may be substituted.

I. Threaded Nipples – ASTM D2464, Schedule 80 with molded threads.

J. Use solvent weld pipe for mainline pipe with a nominal diameter less than 3-inches or where a pipe connection occurs in a sleeve. Use Schedule 80, Type 1, PVC solvent weld fittings conforming to ASTM Standards D2466 and D1 784. Use primer approved by the pipe manufacturer. Solvent cement to conform to ASTM Standard D2564.

K. No plowing/pulling of mainline accepted.

L. Refer to “trenching and backfilling” elsewhere in these specifications for minimum depths.

M. PVC lateral line and fittings

1. Lateral lines (non-pressure): 3/4” and larger shall be 1120, Schedule 40 PVC plastic pipe.

N. Manufactured from virgin polyvinyl chloride (PVC) compound in accordance with ASTM D2241 and ASTM D1784; cell classification 12245-B, Type 1, Grade 1.

O. Fittings – All lateral lines shall be connected with Schedule 40, Type I, Grade I, PVC solvent weld fittings.

P. Threads – Injection molded type (where required).

Q. Tees and ells – Side gated.

R. Threaded Nipples – ASTM D2464, Schedule 80 with molded threads.

S. Refer to "trenching and backfilling" elsewhere in these specifications for minimum depths.

T. Solvent for all PVC pipe shall be #711 Gray, along with #P-70 primer, NSF approved as manufactured by Industrial Polychemical Service, Gardena, California, or approved equal.

U. Pipe joint compound shall be non-hardening, non-toxic materials designed specifically for use on threaded connections in water carrying pipe. Performance shall be same as RectorSeal #5.

2.05 TWO WIRE CABLE AND CONDUIT

A. Two wire cable shall be installed within 1¼" Schedule 40 grey PVC with Schedule 40 fittings and Schedule 40 electrical long sweeps elbows at all changes in direction. Pull boxes shall be located a maximum of 250 feet on center, adjacent to controller, and at each change of direction. Use rectangular boxes for all pull boxes. Use NDS Pro Series model 214BCB ELEC with bolt down lid or approved equal. Color shall be gray. Heat brand box "PB". Text height of letters to be 2".

B. Irrigation control wires: solid copper with U.L. approval for direct burial in ground. Size #14awg wire with a jacketed 2-conductor. Preferred wire make and model is the Paige P7354D irrigation wire or approved equal.

C. ALL WIRE SPLICES shall be weather-proofed by using 3M SCOTCHCAST 3570G-N seal packs, per Calsense requirements.

D. Pull rope with tracer wire to be included for all conduit.

2.06 QUICK COUPLING VALVES

A. Quick coupling valves shall be 1-inch, two-piece winged, single slot valves. Wings shall stabilize the valve and prevent it from rotating in the ground. Each valve shall have a molded vinyl locking cover. Quick Coupling Valve HQ-44LRC-AW, by Hunter, or approved equal.

B. Upon completion of the Contract and prior to final acceptance, the Contractor shall supply the City with coupler keys and hose ells in the quantity called for on the plans. The coupler keys and hose ells shall be of the same manufacturer as the coupling valve.

2.07 SLEEVES

A. Sleeve below all hardscape elements with SCH 40 PVC twice the diameter of the pipe or wire bundle within, or as delineated on the plans.

B. Under Hardscape Crossings: Sleeves shall extend a minimum of 24 inches beyond all sidewalks, or shall be extend 24" beyond the back edge of the curb, where noted on the plans.

C. Refer to "Installation of Sleeving Under Asphalt or Concrete" elsewhere in this section for additional information regarding sleeving.

2.08 POP-UP SPRAY/SPRINKLER

A. Sprinkler heads shall be of the types and sizes with the radius of throw, pressure, discharge and any other designations as specified in the plans and within these specifications. They

shall be constructed of bronze, brass, stainless steel and/or high-impact plastic as noted by model number in legend of plans.

B. Nozzles shall be compatible with the sprinkler body, and as described on the plans, or approved equal.

C. All heads of a particular type of function in the system shall be of the same manufacturer and shall be marked with the manufacturer's name and identification in such a position that they can be identified without being removed from the system.

D. All sprinkler heads on any one system (zone) shall be of the same size, type, and deliver the same rate of precipitation with the diameter (or radius) of throw, pressure, and discharge shall match existing on site.

E. Small rotors shall be pop-ups with stainless steel risers and check valves, have a screw adjustment and shall be manufactured by Hunter (I-20-04 NCV,Toro 640-02), or equal.

F. Double Swing Joint Assembly: These shall be fabricated in accordance with the detail. Use Schedule 80 threaded nipples and risers and Schedule 40 fittings.

G. Riser nipples for all sprinkler heads shall be the same size as the riser opening in the sprinkler body.

H. Low precipitation rate, multi-stream nozzles shall be Hunter MP Rotator series, or equal, and shall be used with 40 psi pressure regulating heads (MP 1000 Pros-12-cv) or equal.

2.09 IRRIGATION GEAR DRIVEN ROTOR

A. Rotors shall be as shown on the plans.

2.10 DETECTABLE WARNING TAPE

A. Christy Model #TA-DT-3-BIRR or approved equal

2.11 MISCELLANEOUS INSTALLATION MATERIALS

A. Solvent cement and primer for solvent weld joints shall be of make and type approved by manufacturer(s) of pipe and fittings. Cement shall be maintained at proper consistency throughout use.

B. Pipe joint compound shall be non-hardening, non-toxic materials designed specifically for use on threaded connections in water carrying pipe. Performance shall be same as RectorSeal #5.

2.12 OTHER MATERIALS

A. All other materials not specifically described but required for a complete and proper irrigation system installation shall be new, first-quality of the respective kinds, and subject to the approval of the City.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection

1. Prior to all work in this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.

2. Verify that irrigation system may be installed in strict accordance with all pertinent codes and regulations, the original design, the referenced standards and the manufacturer's recommendations.

3. Exercise extreme care in excavating and working near existing utilities. Contractor shall be responsible for damages to utilities which are caused by Contractor's operations or neglect. Check existing Utilities Drawings for existing utility locations.

4. Refer to 1.04 Coordination and Scheduling for additional inspection requirements.

B. Discrepancies

1. In the event of discrepancy, immediately notify the City or his authorized representative.

2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

C. Preservation and Cleaning: The Contractor shall clean up the work as it progresses. At frequent intervals, and at all times when directed by the City, the Contractor shall remove and dispose of accumulations of rubbish and debris of all kinds. At the time of completion, the entire site shall be cleared of tools, equipment, rubbish, etc., all of which shall be removed from the site; and the entire project, including surrounding premises, shall be left in proper, clean condition ready for acceptance.

D. Excavation around existing trees: Where it is necessary to excavate adjacent to existing trees, use caution to avoid injury to trees and tree roots. Excavate by hand in areas where two (2) inch and larger roots occur. Paint roots one (1) inch and larger in diameter with two coats of tree seal, or equal. Backfill trenches adjacent to tree within twenty-four (24) hours. Where this is not possible, shade the side of the trench adjacent to the tree with wet burlap or canvas.

3.02 FIELD MEASUREMENTS

A. The irrigation plans are diagrammatic. Make all necessary measurements in the field to ensure precise fit of items in accordance with the dimensions required in the plans, details, these specifications.

3.03 PREPARATION

A. Physical Layout:

1. Contractor shall verify location of existing irrigation heads and lines in the field.

2. Irrigation system shall remain active during the course of the project. Stake out, as needed, all pressure supply lines, routing and location of sprinkler heads to prevent damage to existing irrigation system.

3.04 TRENCHING AND BACKFILLING

A. Work shall be performed when soils are reasonably dry and not saturated.

B. Trenching

1. Excavations shall be open vertical construction sufficiently wide to provide free working space around the work installed and to provide ample space for backfilling and compacting.

2. Depth of trenches shall be 24 inches cover, minimum, above top of low voltage conduit.

3. Trenches shall be excavated to such depths as will permit the pipe to be laid at the elevations, slopes, or depths of cover indicated on the drawings, and at uniform slopes between indicated elevations.

4. When two or more pipes are to be placed in the same trench, maintain a six-inch space between pipes as minimum. No pipe shall be installed directly over another.

5. Maintain 3" clearance from the edge of the trench to the outside edge of the pipe.

6. Whenever cobbles larger than 3 inches in size are present in earthen subgrade, the trench section shall be excavated to the lines required. Every effort shall be made to keep the sides of the trenches firm and undisturbed until backfilling has been completed and consolidated. Trenches shall be excavated with approximately vertical sides between the elevation of the bottom of the pipe and an elevation one foot above the top of the pipe.

7. Refer to Part entitled “Dedicated Low Voltage Conduit and Sleeving” for sleeve depths in various conditions

C. Backfilling:

1. Backfill materials shall be approved native soil in all landscaped areas, and City Standard trench backfill over sleeves under paved areas. Unsuitable material, including clods and rocks over 2-1/2 inches in size shall be removed from the premises by Contractor and disposed of legally at no cost to the City.

2. Backfill only after piping has been tested, inspected and approved.

3. Place backfill materials in 6” layers and compact by jetting or tamping to a minimum compaction of 90 percent of original soil density.

4. Dress off areas to finish grades and remove excess soil, rocks or debris remaining after backfill is completed.

5. All backfilling shall be properly compacted so as to avoid future settlement.

6. If settlement occurs along trenches, and adjustments in pipes, valves and sprinkler heads, soil, sod or paving are necessary to bring the system, soil, sod or paving to the proper level or the permanent grade, the Contractor, as part of the work under this contract, shall make all adjustments without extra cost to the Owner.

7. Surplus earth remaining after backfilling shall be disposed of on the premises as directed by the City.

3.05 INSTALLATION OF SLEEVING UNDER CONCRETE

A. General: Layout of the piping system shall be per the drawings and to the depth specified above.

B. Under Existing Pavement:

1. Piping under existing pavement may be installed by jacking, boring or hydraulic driving, except that no hydraulic driving will be permitted under asphaltic concrete pavement.

2. Where cutting of existing pavement is necessary, provide alternate routes for vehicular traffic. After placement of pipes, backfill trench and compact to 95%. Replace entire section of base rock and hardscape in accordance with City of Fremont Standard Detail SD-28. IS this really happening per this detail? Either include the detail, or describe what needs to happen so we do not reference SD-28

C. Inspection of Pipe and Fittings: Carefully inspect all pipe fittings before installation, removing all dirt, scale and burrs; ream as required. Install all pipe with all markings up for visual inspection and verification.

D. Installation of Sleeving:

1. Refer to “Sleeving” elsewhere herein for appropriate depths.

2. Sleeving shall extend 24 inches beyond the edge of finished concrete surface.

3. Trenches containing sleeves shall be backfilled with City Standard Trench Backfill to the bottom of the concrete or hardscape section and compacted per City Standard

requirements. Where the sleeve extends beyond the edge of the hardscape or concrete, the sleeve shall be backfilled with native soil or imported topsoil, whichever is specified. If nothing is specified, use previously excavated native soil.

4. Prior to placement of concrete, the ends of the sleeves shall be marked with a stake that shall be exposed approximately 2”-3” above rough, or finished grade to identify sleeve locations. Upon completion of finished concrete surfacing, the location and shall be marked at the edge of concrete or hardscape with a chiseled line or “x”, and the stake removed.

3.06 ASSEMBLING PIPING

A. PVC pipe shall be installed in a manner which will provide for expansion and contraction as recommended by the pipe manufacturer. Pipe routing is diagrammatic and shall be installed in such a manner as to conform with the details.

B. In joining, use only the specified solvent and make all joints in strict accordance with the manufacturer's recommended methods. Give solvent welds at least 16 minutes set-up time before moving or handling and 24 hours curing time before filling with water.

C. All pipe shall be assembled free from dirt and pipe scale. Field cut ends shall be reamed only to full pipe diameter with rough edges and burrs removed.

D. Install 3” wide detectable warning tape above all pressurized main lines as shown in the details.

E. Solvent Weld Joint:

1. Prepare joint by first making sure the pipe end is square, then deburring the pipe end and cleaning pipe and fitting of dirt, dust and moisture.

2. Dry-insert pipe into fitting to check for missizing. Pipe should enter fitting 1/3 to 2/3 depth of socket.

3. Coat the inside socket surface of the fitting and the male end of the pipe with P-70 primer (manufactured by Weld-On). Then without delay, apply Weld-On 711 cement liberally to the male end of the pipe and also apply 711 cement lightly to the inside of the socket. At this time, apply a second coat of cement to the pipe end.

4. Insert pipe immediately into fitting and turn 1/4 turn to distribute cement and remove air bubbles. The pipe must seat to the bottom of the socket and fitting. Check alignment of the fitting. Pipe and fitting shall be aligned properly without strain to either.

5. Hold joint still for approximately thirty (30) seconds and then wipe the excess cement from the pipe and fitting.

6. Cure joint a minimum of thirty (30) minutes before handling and at least six (6) hours before allowing water in the pipe.

F. Threaded Joint:

1. Field threading of plastic pipe or fittings is not permitted. Factory-formed threads only will be permitted.

2. Factory made nipples shall be used wherever possible. Field cut threads in metallic pipe will be permitted only where absolutely necessary. When field threading, cut threads accurately on axis with sharp dies.

3. All threaded joints shall be made up with joint compound. Apply compound to male threads only.

4. Where assembling metallic pipe to metallic fitting or valve, not more than three (3) full threads shall show when joint is made up.

5. Where assembling to threaded plastic fitting, take up joint no more than one full turn beyond hand tight.

6. Where assembling soft metal (brass or copper) or plastic pipe, use strap type friction wrench only; do not use metal-jawed wrench.

G. Cap or plug openings as pipeline is assembled to prevent entrance of dirt or obstructions. Remove caps or plugs only when necessary to continue assembly.

H. Where pipes or control wires pass through sleeves, provide removable non-decaying plug at ends of sleeve to prevent entrance of earth.

I. For plastic-to-steel connections, work the steel connections first; use a non-hardening non-lead base pipe dope on all threaded plastic-to-steel connections and use only light wrench pressure. All plastic-to-steel connections shall be made with plastic male adapters. Provide each assembly with its own outlet from the irrigation main (no multiple assemblies).

3.07 INSTALLATION

A. Pipe Assemblies:

1. PVC pipe and fittings shall be thoroughly cleaned of dirt, dust and moisture before installation. Installation and solvent welding methods shall be as recommended by the pipe and fitting manufacturer.

2. On PVC to metal connections, Contractor shall work the metal connections first. Pipe tape shall be used on all threaded PVC to PVC, and on all threaded PVC to metal joints. Light wrench pressure is all that is required. Where threaded PVC connections are required, use threaded PVC adapters or machined PVC schedule 80 pipe nipples into which the pipe may be welded.

3. Do not install multiple assemblies in plastic sleeves.

4. Use fittings to change pipe directions. Do not deflect pipe beyond manufacturer's recommendations.

5. Do not install joints in sleeves or under pavement if length is less than 20 feet. Where pipe length exceeds 20 feet, use minimum number of joints.

6. Install PVC piping and fittings without tension on the fittings. Pipes should be inserted squarely and fully into socket of fittings.

B. Pipe Clearance: All pipes shall have a minimum clearance of 6 inches from each other and from lines of other Work. Parallel pipes shall not be installed directly over one another. No more than two pipes may be installed in a single trench.

C. Flushing of System:

1. After all new sprinkler pipe lines and risers are in place and connected, all necessary diversion work has been completed, and prior to installation of sprinkler heads, the control valves shall be opened and a full head of water used to flush out the system.

2. Sprinkler heads shall be installed only after flushing of the system has been accomplished to the complete satisfaction of the City.

3.08 INSTALLATION OF EQUIPMENT

A. Quick Coupling Valves: Quick coupling valves shall be set approximately 12 inches from walks, curbs, headerboards or paved areas where applicable per detail drawings.

B. Remote Control Valves

1. Install where shown on drawings and group together where practical. Limit one remote control valve per box. No exceptions!
2. Set boxes 2" above finished grade in groundcover area, or flush if located in hardscape surfacing.
3. Thoroughly flush main line before installing or any modification to existing valves.
4. Install in shrub or groundcover areas where possible.
5. Label control line wire at each valve with a 2 1/4” x 2 3/4” polyurethane i.d. tag, indicating identification number of valve (controller and station number). Attach label to control wire.
6. Remote control valves shall be adjusted so that the most remote sprinkler heads operate at the pressure recommended by the head manufacturer. Remote control valves shall be adjusted so a uniform distribution of water is applied by the sprinkler heads to the planting areas for each individual valve system.

C. Sprinkler heads and bubblers:

1. All sprinkler heads shall be set perpendicular to finish grade of the area to be irrigated unless otherwise designated on the plans.
2. In lawn areas, all sprinkler heads shall be offset a minimum of 3 inches and a maximum of 6 inches from the edge of adjacent hardscape.
3. Flush and adjust irrigation outlets, bubblers and nozzles for optimum performance and to prevent overspray onto field, walks, roadways, and/or buildings as much as possible. This shall include selecting the best degree of arc and radius to fit the existing site conditions and throttle the flow control at each valve to obtain the optimum operating pressure for each control zone.

3.09 FIELD QUALITY CONTROL

A. General

1. Furnish all necessary testing equipment and personnel.
2. Correct all leaks and retest until acceptance by the City.

B. Closing uninspected work: Do not allow or cause any of the work of this section to be covered up or enclosed until it has been inspected, tested and approved by the City and other authorized agencies.

C. Flushing: Before backfilling the main line, and with all control valves in place but before lateral pipes are connected, completely flush and test the main line and repair all leaks. Flush out each section of lateral pipe before sprinkler heads are attached.

D. Testing

1. Contractor shall request the presence of the Owner in writing at least 48 hours in advance of testing. Testing of pressure mainlines shall occur prior to installation of electric control valves.
2. Perform test as specified below. Remake any faulty joints with all new materials. Use of cement or caulking to seal leaks is absolutely prohibited.
3. The Contractor shall notify Project Inspector and Project Landscape Architect at least three (3) days in advance of testing.
4. The Contractor shall perform testing at his own expense.

5. Thoroughly bleed the line of air and debris.
6. Before testing, fill the line with water for a period of least 24 hours.
7. Center load piping with small amount of backfill to prevent arching or slipping under pressure. No fitting shall be covered by backfill during test.
8. Apply the following tests after welded plastic pipe joints have cured at least 24 hours.
    a. Test RCV controlled lateral lines with water at line pressure and visually inspect for leaks. Retest after correcting defects.
9. Test all pressure lines under hydrostatic pressure of 150 pounds per square inch, and prove watertight.
10. All piping under paved areas shall be tested under hydrostatic pressure of 150 pounds per square inch, and proved watertight, prior to paving.
11. Sustain pressure in lines for not less than 2 hours. If leaks develop, replace joints and repeat test until entire system is proven watertight.
12. All hydrostatic tests shall be made in the presence of Owner. No pipe shall be backfilled until it has been inspected, tested and approved in writing.
13. Furnish necessary force pump and all other test equipment.
14. When the sprinkler irrigation system is completed, perform a coverage test in the presence of the Owner, to determine if the water coverage for planting areas is complete and adequate. This test shall be accomplished before any plants are planted.

E. Adjustment of the System:

1. Contractor shall flush and adjust all sprinkler heads for optimum performance and to prevent overspray onto walks, roadways, and buildings as much as possible.
2. If it is determined that adjustments in the irrigation equipment will provide proper and more adequate coverage Contractor shall make such adjustments prior to planting. Adjustments may also include changes in nozzle sizes and degrees of arc as required.
3. All sprinkler heads shall be set perpendicular to finished grades unless otherwise shown on the Drawings.

F. The entire sprinkler irrigation system shall be under full automatic operation for a period of 2 days prior to any planting. The Owner reserves the right to waive or shorten the operation period.

1.02 CLEAN-UP

A. Refuse and excess dirt shall be removed from the site, all walks and paving shall be broomed or washed down.

1.03 FINAL OBSERVATION PRIOR TO ACCEPTANCE

A. Contractor shall operate each system in its entirety for the Owner at time of final observation. Any items deemed not acceptable by the Owner shall be reworked to the complete satisfaction of the Owner.

B. The controller must be set up and under full automatic operation before final inspection can occur and maintenance period can begin.

C. Controller charts and final as-built record drawings shall be submitted in both electronic form and as 1 full-size hard copy. Both must be provided to the Owner and approved before final inspection can occur and maintenance period can begin. Refer to 1.2.B. and C.

D. Contractor shall show evidence to the Owner that the Owner has received all accessories, charts, record drawings, and equipment as required before final inspection can occur.

1.04 MEASUREMENT AND PAYMENT

A. The per each unit cost for "**Adjust Irrigation Heads**" shall include all changes made to existing irrigation heads including but not limited to modifications to heads and rotors, and shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, for doing all the work covered in this section, including coordination with City Park Maintenance, minor rough grading at adjusted heads, topsoil backfill, and all connections for a functioning system, complete in place as shown on the plans, as required by these Special Provisions, and as directed by the Engineer.

B. The per each unit cost for "**Adjust Remote Control Valve and Box**" shall include all changes made to existing irrigation heads including but not limited to modifications to heads and rotors, and shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, for doing all the work covered in this section, including coordination with City Park Maintenance, minor rough grading at adjusted heads, topsoil backfill, and all connections for a functioning system, complete in place as shown on the plans, as required by these Special Provisions, and as directed by the Engineer.

C. The contract per each unit price paid for "**Pop-up Rotor**" of the unit price schedule shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, for doing all the work covered in this section, including testing for a complete and functioning system, complete in place as shown on the plans, as required by these Special Provisions, and as directed by the Project Landscape Architect.

D. The linear foot unit price quantity of "**Lateral Pipe**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, including "Trenching and Backfilling", complete in place as shown on the plans, as required by these Special Provisions, and as directed by the City Engineer or his designee. Quantities of grading will not be measured. The quantities shown on the Engineer's Estimate for "Lateral Pipe," shall be the final pay quantity for which payment is made as specified in Section 8.2 and 8.8, "Final Payment" of the General Conditions and no additional payment shall be made therefor.

E. The linear foot price paid for "**4" Irrigation Sleeve**", shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, including trenching and backfill, complete in place as shown on the plans, as required by these Special Provisions, and as directed by the City Engineer or his designee.

F. The contract per each unit price paid for "**Quick Coupler with box**" of the unit price schedule shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, for doing all the work covered in this section, including testing for a complete and functioning system, complete in place as shown on the plans, as required by these Special Provisions, and as directed by the Project Landscape Architect.

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SECTION 32 91 13 SOIL PREPARATION AND SOIL AMENDMENT

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Provide incorporation of soil amendments, including but not limited to fertilizers, compost, and soil conditioners in sodded areas.

B. Water settlement prior to placement of existing sod and/or replacement of existing sod.

1.02 RELATED DOCUMENTS

A. These special provisions are part of the plans and shall include all labor, materials, equipment, reasonable incidental, and services necessary to the execution of the work.

B. Refer to all other sections, determine the extent and character of related work, and coordinate all work to produce a complete, properly constructed product.

C. Related Documents

1. Section 01 30 00 “Submittal Procedures”
2. Section 02 41 00 “Site Demolition”
3. Section 32 84 00 “Irrigation Adjustments”
4. Section 32 92 23 “Sod”

1.03 DEFINITIONS

A. Existing Soil: Native soil where rough grading is to be performed through ripping, cutting and import. Surface cultivation and soil amending are included in this Section. See Drawings and geotechnical recommendations

B. Subgrade: Soil level resulting from the rough grading work and import fill under another Section. Cultivation of all subgrade areas prior to placement of topsoil is included in another Section.

1.04 SCHEDULING

A. Prior to starting work, coordinate work with other trades to insure proper sequencing of construction.

1.05 ENVIRONMENTAL REQUIREMENTS AND SOILS

A. No planting area earthwork or planting shall occur during weather conditions that will adversely affect materials or when soil is in a muddy condition. Soil used within landscaped areas shall be in a friable condition at time of displacement including during transportation, placement, cultivation, and planting.

B. Friable refers to the structure and moisture content of soil. Friable soil shall be understood to mean soil that crumbles easily in the hand, does not stick to the hand, and does not form a ball when squeezed. Friable soil is not wet or muddy but is moist and damp. Obtain City Representative’s determination of soil condition acceptability prior to installation and working of soils.

C. Soils in landscape areas that are worked when not friable shall be removed at the Contractor’s expense and replaced with friable imported topsoil complying with the specifications for topsoil herein.

1.06 PRESERVATION OF PROPERTY

A. Protect existing on- and off-site improvements, utilities, and plants from damage. Damage resulting from Contractor's operations shall be repaired or replaced at the Contractor's expense to the City Representative's satisfaction.

B. Refer to Section 02 41 00 "Site Demolition"

1.07 QUALITY ASSSURANCE

A. Soil Amendment Testing Laboratory:

1. Laboratory shall be a recognized laboratory for soil and plant disease analysis for ornamental horticulture and approved by the City's Landscape Architect.

2. Acceptable laboratory:

a. Wallace Laboratory, El Segundo, Ca, www.wlabs.com, ph. 310-615-0116

b. Waypoint Analytical, Anaheim, Ca, www.waypointanalytical.com, ph. 714-282-8777.

B. Perform all work to the highest standard of quality. All work is subject to the acceptance of the City Project Landscape Architect. Work that is deemed unacceptable or defective by the City Representative shall be removed by the Contractor immediately and replaced with work that is acceptable to the City Project Landscape Architect.

C. Installer Qualifications: Products shall be installed by a qualified installer whose work has resulted in successful installation of planting soils.

1. The installer shall have a minimum of five (5) years successful experience with soil amendment and planting of similar scope.

2. Installer's Field Supervision: Installer is required to maintain an experienced full-time supervisor/foreman on Project site when work is in progress.

3. Deliver commercially processed or packaged materials to the Jobsite in the original unopened containers bearing the manufacturer's guaranteed analysis.

1.08 PROJECT CONDITIONS

A. Inspect job for conditions which would prevent the execution of this work as specified. Do not proceed until such conditions are corrected.

B. Exercise caution against injury to, or defacement of, existing conditions. Contractor is responsible for any repair or replacement of items damaged from installation due to construction operations. Repairs and replacement shall be made to the satisfaction of the City and at no expense to the City.

1.09 PRESERVATION OF PROPERTY

A. Protect existing on- and off-site improvements, utilities, and plants from damage. No vehicles shall be allowed to pass over curbs, sidewalk, and planting areas unless proper protection is provided. Damage resulting from Contractor's operations shall be repaired or replaced at the Contractor's expense and to the City Project Inspector or Project Landscape Architect's satisfaction.

1.10 SUBMITTALS

A. Refer to Section 01 33 00 "Submittals" for submittals, substitutions and requests for substitutions procedures.

B. Materials and Product Data: Submit complete product and cut sheets for soil amendments, fertilizers and non-proprietary items under this Section, including source, size and quantity.

1. Information shall include manufacturer's specifications, installation instructions, data sheets, and catalog cuts for all materials different from those specified. Submit (3) three manufacturer's catalog cuts for all specified materials listed herein.
2. Samples:
    a. One-half pound (½) each of material samples, including compost.
    b. Controlled release fertilizer paks.

C. Test Reports for subgrade soils and compost:
1. Provide material samples directly to testing laboratory.
2. Native Topsoil and Existing Subgrade:
    a. Provide Test AO5 for agricultural suitability, parasitic nematodes and herbicide contamination. Report to include amendment recommendations.
    b. Certify that soil is free of herbicides or other harmful substances. Perform monocot and dicot growth trials, Test GR04. Number and amount of samples as recommended by Testing Laboratory, minimum 4 trials.
    c. Number of samples to be as recommended by Testing Laboratory, minimum 1 sample. Samples to be collected as directed by the Testing Laboratory. As a minimum requirement, samples are to be taken from soils 12" below finish grade and delivered in separate sealed containers, uniquely labeled, identifying their location on the site. Samples must be collected in clean containers and must not be mixed.
3. Organic Compost: Test for physical and chemical properties.

B. Recommended Testing Lab: Waypoint Analytical, 1101 S. Winchester Blvd, G-173, San Jose, CA 95128 (408) 727-0330.

C. Test results, including analysis and comment with any soil amendment recommendations to be specified using organic compost amendments, are to be sent directly to the City Project Landscape Architect and General Contractor by the testing agency. Test to be performed:
1. Provide recommendations soil amendments and fertilizer to Testing Laboratory. Include manufacturer's analysis of proposed amendment, dated within 6 months before delivery, or sample of organic amendment for Testing Laboratory's analysis if manufacturer's analysis is not available.
2. Testing Laboratory shall propose changes in amendment program specified, if required, and shall certify that amendments proposed are suitable for use with site soil and import topsoil.
3. Number of samples to be as recommended by Testing Laboratory, minimum 1 sample. Samples to be collected as directed by the Testing Laboratory. As a minimum requirement samples are to be taken from soils 12" below finish grade and delivered in separate sealed containers uniquely labeled identifying their location on the site. Samples must be collected in clean containers and must not be mixed.
    a. Certify that soil is free of herbicides or other harmful substances. Perform monocot and dicot growth trials, Test M05. Number of samples as recommended by Testing Laboratory, minimum 4 trials

D. Per laboratory report, submit recommended material and product data. Obtain written approval prior to delivery of materials to the site. Finished work shall match approved samples.

E. Proof of Quantities/Certification

1. Furnish the City Project Inspector and Project Landscape Architect with:

   a. Duplicate legible copies of certificates and/or invoices for all fertilizer, soil conditioners, compost, and other materials utilized for project. Certificates/invoices shall state the grade, weight, quantity, source, and date of delivery.

2. Certificates: Certify strict compliance with accepted soil mixes and amendments, including rate of application.

3. Current Reports: All reports on the above items shall have been performed no more than 6 months prior to the date of submittal. Reports older than 6 months shall be considered unacceptable, and will be rejected. Price of testing shall be done at no additional cost to the City.

1.11 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Refer to Section 01 60 00 “Product Requirements”, for additional information.

B. Weather: Do not mix, deliver, or place soils and amendments in frozen, wet or muddy conditions.

C. Delivery and Storage

1. Deliver fertilizer and soil conditioner to the Jobsite in original unopened containers bearing manufacturer's guarantied chemical analysis, weight, manufacturer’s name, trademark, and conformance with state law.

2. Store products to protect them from damage and contamination and comply with manufacturer's storage instructions.

3. Store fertilizers and soil amendments in a dry place and protect from intrusion of moisture.

4. Fertilizer and lime shall not be stored with any other landscape material.

5. Herbicides and pesticides shall not be stored with any other landscape material.

1.12 INSPECTIONS

A. The right of inspection is reserved by the City Representative at any time on the Jobsite, including acceptance and/or rejection of any soil amendment upon delivery or during the installation of work.

B. Contractor shall notify City Representative in writing a minimum of 5 Working Days in advance of Contractor initiated inspections.

PART 2 PRODUCTS

2.01 GENERAL

A. All products, including, but not limited to, compost, soil conditioners, fertilizers shall be in conformance with the specifications listed below. Any changes to products specified shall be first approved, in writing, by the City’s Landscape Architect prior to job site delivery. Refer to Section 01 30 00 “Submittal Procedures” for additional information.

B. The following soil additives may be required in various quantities by the soils testing laboratory and the City Project Landscape Architect to bring soil to an acceptable condition to promote vigorous and healthy plant growth. The addition of these and other industry standards amendments shall be at the expense of the Contractor.

2.02 ORGANIC COMPOST

A. Compost must comply with the following requirements:

1. The compost provider must be a compost producer and a participant in the United States Composting Council (USCC) Seal of Testing and Assurance (STA) program.
2. The compost manufacturer must be fully permitted as a compost producer in accordance with requirements of the California Integrated Waste Management Board (CIWMB), Local Enforcement Agency (LEA) and any other State and Local Agencies that regulate solid waste facilities. If exempt from State permitting requirements, the composting facility must certify that they follow all guidelines and procedures for production of composting meeting the environmental health standards of Title 14, California Code of regulations, Division 7, Chapter 3.1, Article 7.
3. Compost may be derived from any single or mixture of any of the following feedstock materials: green material consisting of chipped, shredded, or ground vegetation; clean processed recycled wood products, or food waste. Compost feedstock shall not include bio-solids and/or manure.
4. Compost the feedstock materials such that weed seeds, pathogens and deleterious materials are reduced as specified under Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7, Section 17868.3.
5. Metal concentrations in the compost must not exceed the maximum metal concentrations listed in California Code of regulations, Division 7, Chapter 3.1, Article 7, Section 17868.2.
6. Compost shall be a well decomposed, stable, weed free organic matter source. The product shall be certified through the US Composting Council's (USCC) Seal of Testing Assurance Program (STA) Program (a compost testing and information disclosure program). It shall be derived from agricultural or food waste or yard trimmings. The product shall contain no substances toxic to plants, will possess no objectionable odors and shall not resemble the feedstock (the original materials from which it was derived).
7. Before delivery of the compost, the supplier will submit proof of STA certification and a copy of lab analysis performed by a laboratory that is enrolled in the US Composting Council's CAP and using the approved Test Methods for the Evaluation of Composting and Compost (TMECC). The lab report shall verify:
   a. Feedstock Materials as reported from manufacturer.
   b. Organic Matter Content: 50% - 60% by dry wt. preferred, 35-70% acceptable. Minimum 250 lbs organic matter per cubic yards of compost.
   c. Carbon and Nitrogen Ratio: C:N < 25:1 plus at least one measure of stability and at least one measure of toxicity.
   d. Maturity/Stability: shall have a dark brown color and a soil-like odor. Compost exhibiting a sour or putrid smell, containing recognizable grass or leaves, or is hot (120F) upon delivery or rewetting is not acceptable. In addition, any one of the following is required to indicate stability.

I.	Oxygen Test	< 1.3 O2 / unit TS / hr
II.	Specific oxy. Test	< 1.5 O2 / unit BVS / hr
III.	Respiration test	< 8 C / unit VS / day
IV.	Dewar test	< 20 Temp. rise (oC)
V.	Solvita®	> 5 Index value

   b.
   e. Toxicity: any one of the following measures is sufficient to indicate non-toxicity.

VI.	NH4- : NO3-N	< 3
VII.	Ammonium	< 500 ppm, dry basis
VIII.	Seed Germination	> 80 % of control
IX.	Plant Trials	> 80% of control
X.	Solvita®	> 5 Index value

c.

a. Nutrient Content: provide analysis detailing nutrient content including N-P-K, Ca, Na, Mg, S, and B.

   I. Total Nitrogen content 0.9% or above preferred.

   II. Boron: Total shall be <80 ppm; Soluble shall be <2.5 ppm.

b. Salinity: Must be reported; may vary but < 4.0 mmhos/cm preferred. Soil should also be tested. <2.5 mmhos/cm is preferred for soil/compost blend but may vary with plant species.

c. pH: pH shall be between 6.5 and 7.5. May vary with plant species.

d. Salt: alt content shall be less than 10 millimho/cm @ 25 degrees C on a saturated paste extract.

e. Boron: Silicon content of the saturated extract shall be less than 1.0 parts per million.

f. Silicon: Silicon content (acid-insoluble ash) shall be less than 50%.

g. Calcium Carbonate: Calcium carbonate shall not be present if to be applied on alkaline soils.

h. Particle Size: Maximum particle size shall be 0.5 inch, 80% or more shall pass a No. 4 screen for soil amending. Maximum particle size shall be 0.25 inch for hydroseeding, if hydroseeding is required.

i. Bulk density: shall be between 500 and 1100 dry lbs/cubic yard

j. Moisture Content shall be between 35% - 55% of dry solids.

k. Inerts: compost shall be relatively free of inert ingredients, including glass, plastic and paper, < 0.1 % by weight or volume.

l. Weed seed/pathogen destruction: provide proof of process to further reduce pathogens (PFRP). For example, turned windrows must reach min. 55C for 15 days with at least 5 turnings during that period.

m. Select Pathogens: Salmonella <3 MPN/4grams of TS, or Coliform Bacteria <10000 MPN/gram.

n. Trace Contaminants Metals (Lead, Mercury, Etc.) Product must meet US EPA, 40 CFR 503 regulations.

5. When compost is being used as a soil amendment, and before delivery of the compost the Contractor will submit a copy, to the City, of a lab analysis performed in the last 6 months by a certified US Composting Council Compost Analysis Program (CAP) laboratory, using the approved Test Methods for the Evaluation of Composting and Compost (TMECC). Verifying current participation in CAP can be achieved by visiting www.compostingcouncil.org. Submittals shall be delivered to City for review prior to delivery to site. Manufacturer's information shall include the source feedstock used for the compost.

6. Compost certification and definitions

   a. STA - The US Composting Council's Seal of Testing Assurance Program; it assures that compost producers regularly sample & test compost using STA program-approved labs, for chemical, physical, and biological properties, using the same standardized testing methodologies. (www.compostingcouncil.org)

   b. OMRI - Organic Materials Review Institute; it assures product compliance with the regulations of the National Organic Program, and offers a third party review of compost "for use in organic production." (www.omri.org).

   c. CCQC - California Compost Quality Council; recently merged with the US Composting Council; CCQC previously operated a voluntary registration program through which compost producers could assure consumers that quality claims had been verified, and that producers were in compliance with state composting regulations & met state standards in terms of pathogen reduction & trace element concentrations. (www.crra.com/ccqc).

7. Acceptable Products: Types of acceptable products are composts, manures, mushroom composts, straw, alfalfa, peat mosses, etc. low in salts and heavy metals, free from weed seeds, pathogens and other deleterious materials.

8. Composted Wood Products: Composted wood products based on Redwood or Cedar are not acceptable.

9. Sludge-based materials are not acceptable.

10. Soil organic amendment shall be aerobic without malodorous presence of decomposition products.

11. Pollutant Concentrations: Maximum total permissible pollutant concentrations in amendment in parts per million on a dry weight basis:

Pollutant Concentrations	Parts Per Million (PPM)
Arsenic	20
Cadmium	15
Chromium	300
Cobalt	50
Copper	150
Lead	200
Mercury	10
Molybdenum	60
Nickel	100
Selenium	50

Silver	10
Vanadium	500
Zinc	300

2.03 COMMERCIAL FERTILIZERS AND CHEMICAL COMPONENTS

A. Contractor shall endeavor to utilize organic fertilizers from natural sources that are approved for use by the Organics Materials Research (OMRI) and are approved for use in the landscape (www.omri.org).

B. The following additives may or may not be used depending on the outcome of the soils report. Final application shall be per the Agricultural Suitability Report. Contractor shall not submit synthetic amendments without proof that organic (non-synthetic) amendments are not available.

1. Commercial fertilizer shall be 6-20-20 N-P-K (0.75% Zn). Manufacturer: Gro-Well Brands, Inc – 1 (602) 792-0275.

2. Complete fertilizers shall be 5-3-1 with 15% Humic Acid. Manufacturer: GroPower, 15065 Telephone Avenue, Chino, California 91710, 909-393-3744.

3. Ground Limestone: Agricultural limestone containing not less than 85% of total carbonates, ground to such fineness that 50% will pass #100 sieve and 90% will pass #20 sieve.

4. Dolomite Lime: Agricultural grade mineral soil conditioner containing 35%minimum magnesium carbonate and 49% minimum calcium carbonate, 100%passing #65 sieve.

5. Agricultural Gypsum (Calcium sulfate): Agricultural grade product containing 80% minimum calcium sulphate.

6. Increase water infiltration, improved seeding emergence, improves soil structure and reduce soil surface crusting.

7. Agricultural gypsum shall meet OMRI certification. Contractor, in addition to cut sheets, Contractor shall supply OMRI document.

8. Ferrous Iron Sulfate (Ferric or Ferrous) or Chelated Iron Sulfate: Supplied by a commercial fertilizer supplier, containing 20% to 30% iron and 35% to 40% sulphur.

a. Ferrous Iron sulfate or Chelated iron sulfate – helps with greening of leaves

b. Ferrous iron sulfate shall meet OMRI certification. Contractor, in addition to cutsheets, Contractor shall supple OMRI documents.

12. Sulphate of Potash: Agricultural grade containing 50% to 53% of water-soluble potash.

13. Potassium sulfate shall be 0-0-50.

14. Single Superphosphate: Commercial product containing 20% to 25% available phosphoric acid.

15. Ammonium Sulphate: Commercial product containing approximately 21%ammonia. (21-0-0)

16. Ammonium Nitrate: Commercial product containing approximately 34% ammonia.

17. Calcium Nitrate: Agricultural grade containing 15-1/2% nitrogen.

18. Urea Formaldehyde: Granular commercial product containing 38% nitrogen. (32-0-0)
19. I.B.D.U. (Iso Butyldiene Diurea): Commercial product containing 31% nitrogen.
20. Soil Sulfur: Agricultural grade sulfur containing a minimum of 96% sulfur.

PART 3 EXECUTION

3.01 INSPECTION OF SITE CONDITIONS

A. Prior to the work of this section, verify grades and inspect the work of other trades. Verify that all such work is complete to the point where the installation may properly commence. Verify that demolition, clearing and grubbing work and Earthwork are acceptable to the engineer prior to commencing work of this section.

B. In the event of discrepancy, immediately notify the Engineer in writing. Do not proceed with this installation until all discrepancies have been resolved or take responsibility of condition of site at no additional expense to the City.

C. Inspect soil amendments upon delivery for damage, contamination, and insect infestations prior to acceptance of material.

D. Begin work required under this section only after conditions are satisfactory.

3.02 SOIL MOISTURE CONTENT

A. General: Do not work soil when moisture content is so great that excessive compaction will occur, nor when it is so dry that dust will form in air or that clods will not break readily. Apply water, if necessary, to bring soil to an optimum moisture content for tilling and planting.

3.03 SOIL TESTING

A. General: Prior to planting, provide a soil test and recommendations as stated elsewhere in these specifications.

B. See Part 1 here in “Submittals” and “Quality Assurance” for testing experience.

C. Soil Analysis at a minimum should be done for soil chemistry including pH, fertility, agricultural suitability, particle size analysis, infiltration rate, and presence of calcareous conditions, unless otherwise noted in these specifications.

D. Soil test results shall be presented in a report form, and should include recommendations for organic soil amendment, fertilization, drainage mitigation, and other necessary measures, for both planting and during the initial 90-day maintenance period.

3.04 INSTALLATION COMPOST SOIL AMENDMENT

A. General Soil Preparation

1. Subgrade shall be excavated to the required subgrade depths as described on the plans and in Section 31 20 00 “Rough Grading”. Maintain all required angles of repose of the adjacent materials. Do not over excavate compacted subgrades of adjacent materials, pavements or structures. Remove all construction debris and materials.

    a. Confirm that the sub grade is at the proper elevation and compacted as required. Subgrade elevations shall slope parallel to the finished grade and/or toward the lines and grades as shown on the drawings.

    b. Upon achieving subgrade, subgrade shall be ripped to 6 inch depth in both directions prior to amending subgrade and placement of top soil.

c. Subgrade areas shall be water tested to ensure some degree of percolation prior to integrating the first lift of topsoil.

d. Add lifts of native soil.

e. Provide compost amendments, chemicals, and fertilizers described herein, and as recommended in the soil report for subgrade and on-site topsoils. These are minimum requirements. Provide such additional amendments and chemicals as required by the Soil Reports.

f. Fertilizers quantities shall be adjusted in accordance with the soil test and organic compost amendment test reports: For the purposes of bidding, Contractor shall assume 20 pounds per 1,000 square feet of 6-20-20 or 6-24-24, (N-P-K).

g. Other Chemicals Recommended by Soil Test: gypsum, sulfur, lime, etc.

h. After approval of amendment and fertilizer applications by the City Project Inspector or Project Landscape Architect, incorporate soil amendments and fertilizers into the top 12 inches of subgrade soil by repeated rotary-hoe cultivation.

i. Do not mechanically compact with heavy machinery or compactors during placement. Do not saturate soils with water. Soil in plantings areas shall be a minimum 85 percent relative compaction, sufficient to prevent soil settlement with changing friable soil conditions. Provide additional topsoil as needed to achieve the required finished grades and to sill settled areas.

B. For Turf Establishment

1. Distribute and incorporate the soil amendments evenly by hand, or by mechanical methods to a depth of 8 inches within soil.

2. Following incorporation, rake and compact the areas as directed by the City's Inspector or as described within these specifications. The bedding area and soil surface shall be reasonable free of large clods, roots, stones greater than 2 inches, and other material which will interfere with planting and subsequent site maintenance.

3. Thoroughly water to settle amended soil for a period of 30 days prior to planting. Refer to "Water Settlement" found herein. for more information regarding 30 day water settlement requirement.

4. Re-Rake soil surface smooth prior to sodding.

3.05 WATER SETTLEMENT

A. Water settlement intent is 2 fold – to settle material and areas that have been imported, soil conditioned and amended; and, to germinate any weeds, and eradicate those weed prior to shrub placement.

B. At completion of soil conditioning and amendment, smooth the soil surface, and water the soil in all areas, including areas requiring sodding, for a full 30 days. Soil shall be moist without being saturated to a minimum depth of 24 inches and shall not be allowed to dry out at any time within the 30 day watering period. Finished grade of soil shall be checked after 15 days. Imported topsoil soil shall be added in the areas that settle below finished grades as required by the plans and specifications. Irrigation system shall be complete prior to the 30-day watering period and shall be used to water soils.

C. After water settling, finish grade to a smooth, even surface conforming to established grades after settlement. Rake immediately prior to planting.

D. Controls as weed as needed per Plant Establishment Period.

E. The placement of sod shall not begin until the water settlement period is complete and accepted by the City.

3.06 FIELD QUALITY CONTROL

A. Samples and Tests

The work performed under this section will be subject to approval by testing laboratory per section 01 45 23 “Testing and Inspections”. The City reserves the right to take and analyze samples of materials for conformity to specifications at any time. Furnish samples upon request by engineer. Immediately remove rejected materials from the site, at contractor's expense. Cost of testing materials not meeting specification will be paid by contractor at no increase in contracted price.

B. Verification of Quantities

Contractor to provide bills of lading or invoices of specified materials from original suppliers and manufacturers of soil amendments. Quantities shall be verified by the engineer. Any product deficiencies shall be promptly rectified by the contractor.

3.07 DISPOSAL OF WASTE MATERIALS

A. All materials to be removed shall be disposed of in accordance with the provisions in Section 01 74 19 “Construction and Demolition Debris Management and Section 02 41 13 “Site Demolition”.

B. All waste materials generated from soil preparation activities, including excavated materials, rocks and other debris shall be removed and disposed of at the contractors expense.

C. Upon completion of soil preparation operations, clean areas within contract limits, remove tools and equipment. Provide site clear, clean, free of debris and suitable for irrigation and planting operations.

3.08 MEASUREMENT AND PAYMENT

A. “**Soil Preparation and Amendment**” shall be considered included in the square foot pay cost for “**Sod**”, of the unit price schedule and no additional compensation will be allowed therefor.

END OF SECTION

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SECTION 32 92 23 SOD

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Place Sod at old basketball court location and to replace sod to adjust for new grades surrounding new basketball court.

1.02 SECTION INCLUDES

A. Preparation of subsoil.

B. Placing topsoil.

C. Fertilizing.

D. Sod installation.

E. Maintenance

1.03 RELATED REQUIREMENTS

A. Section 01 30 00 “Submittal Procedures”

B. Section 32 84 00 “Irrigation Adjustments”

C. Section 32 91 13 “Soil Preparation and Soil Amendment”

1.04 DEFINITIONS

A. Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.05 SUBMITTALS

A. See Section 01 30 00 “Submittal Procedures”.

B. Product Data: Submit list of all products including sod product brochure, including names of producers or Suppliers.

C. Certificates/Invoices: Submit duplicate, legible copies of certificates or invoices for all grass species and location of sod source, chemicals, fertilizers, and other materials stating the grade, weight, or quantity, source, and date of delivery.

D. Maintenance Data: Include maintenance instructions, cutting method and maximum grass height, types, application frequency, and recommended coverage of fertilizer.

1.06 QUALITY ASSURANCE

A. Sod Producer: Company specializing in sod production and harvesting with a minimum of five years of experience and certified by the State of California.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Harvest, deliver, store, and handle sod according to requirements in TPI's "Guideline Specifications to Turfgrass Sodding". Deliver sod on pallets. Protect exposed roots from dehydration.

B. Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage, seed contamination and drying.

C. Do not deliver more so than can be laid within 24 hours.

1.08 STORAGE OF MATERIALS

A. Fertilizer and lime shall not be stored with other landscape materials.

B. Soil sterilant shall not be stored with other landscape materials.

C. Storage of materials shall only be areas designated or as approved by the Project Inspector.

PART 2 PRODUCTS

2.01 MATERIALS

A. Sod shall be grown in accordance with California agricultural codes.

1. Sod shall be healthy field grown sod containing not more than 1/2-inch thick thatch.
2. Soil upon which the sod has been grown shall be peat, sand or sandy-loam with a minimum 5 inch per hour percolation rate.
3. The age of the sod shall be not less than 8 months or more than 16 months.
4. Sod shall be machine cut at a uniform soil thickness of ½ inch to 5/8 inch, plus or minus 1/4 inch, not including top growth and thatch. Ship sod in rolls and covered to prevent drying out en-route. Keep sod moist at all times to prevent drying out.
5. Sod shall be thick, well-grown, medium texture, deep root system, good wear tolerance and quick recovery form wear, tolerant of saline soils and saline irrigation, adaptable to USDA zones 3 to 9, requires sun most of the day with moderate shade tolerance, mowable to 1" to 3".
6. Regular roll sizes can vary from 24" x 54" to 48" x 125", area per pallet should cover approximately 504 square feet. Weight per pallet should be approximately 2500 pounds, depending upon commercial grower and shipping requirements.
7. Sod shall be free of netting.
8. Sod shall be free of the following: weeds, disease, excessive thatch, burned or bare spots, stones, insects, and non-desirable types of grasses and clovers and shall show no signs of mechanical injury.
9. Contractor shall provide a submittal identifying supplier, type of sod, and other characteristic of the material, unless sod type is identified on the plans. Care should be taken to prevent drying during shipping and handling.
10. Sod shall be delivered to the site in vigorous condition, free of stones, burned or bare spots; weed and disease-free.
11. Grass from sod shall be used in other refined turf areas which are damaged by this construction work. Replacement sod mix shall match the existing sod and be approved by the Project Inspector or Project Landscape Architect prior to installation. Remove existing damaged sod areas prior to installing new replacement sod, prepare soil and comply with the requirements of these Construction Specifications.
12. Fertilizer: As Approved; recommended for grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil, as indicated by analysis.

2.02 SOD LAWN

A. Sod shall be a non-netted or biodegradable netted fescue/bluegrass blend (90%/10%) or bluegrass/rye blend (80%/20% or 50/50), with a determinate-stolons for faster spreading roots and quick repairs to damaged turf.

B. Lawn Area: Sod shall be one of the following approved products:

1. "Blueridge 80/20 with RPR" from Greenfields Turf, Inc, 1-800-673-3058. 80% Kentucky Bluegrass and 20% Regenerating Perennial Ryegrass (RPR) with a determinate-stolons for faster spreading roots and quick repairs to damaged turf.

2. "Non-Netted Blueridge Sports Turf 50/50 with RPR" from Greenfields Turf, Inc, 1-800-673-3058. 50% Kentucky Bluegrass and 50% Regenerating Perennial Ryegrass (RPR) with a determinate-stolons for faster spreading roots and quick repairs to damaged turf.

3. "Premium RTF Water Saver Non-Netted Blend" from Park Avenue Turf, Inc. 1-800-734-8859. Rhizomatous tall fescue.

C. Other turf potions listed below will only be accepted if the above materials are not available:

1. "West Coaster" from West Coast Turf; 1-888-893-8873.

2. "90/10 Tall Fescue" from Delta Blue Grass; 1-800-637-8873

3. "Medallion Plus" (90% fescue/10% Bluegrass) from Pacific Sod; 1-800-942-5296.

4. Or Approved Equal

PART 3 EXECUTION

3.01 GENERAL

A. Deliver sod to Jobsite, unload and store sod on pallets. Deliver to Jobsite within 24 hours of being lifted from growing ground and lay sod the same day as delivery.

B. Sod installation shall not begin until all other improvements have been installed in each area that is to receive grass from sod.

C. Sod shall be installed the same day as delivered.

D. No sod installation shall occur during weather conditions that will adversely affect materials or installation or when soil is in a muddy condition. During wet weather, allow sod to dry sufficiently to prevent tearing during lifting and handling.

3.02 INSTALLATION

A. Prior to any sod installation, soil amendment, 30-Day watering and weeding eradication, and finish grading shall be complete and accepted by the Project Inspector and Landscape Architect, and the irrigation system shall be fully functioning and accepted by the Project Inspector and Landscape Architect.

B. Prior to placing sod and after 30-Day watering and weeding period has been completed, recheck finish grades and add or remove topsoil as required.

C. Refer to Section 32 91 13 "Soil Preparation and Soil Amendment" for additional information regarding water settling.

D. After cultivation, soil preparation, installation of irrigation systems, and excavation and backfilling of plant holes are completed, areas to be planted with sod shall be fine graded and rolled. Areas to be planted with sod shall be graded for positive drainage to drain at the

minimum slopes described on the plans, without low spots or birdbaths in all areas and shall be smooth and uniform prior to placing sod.

E. Areas to be planted with sod adjacent to sidewalks, concrete headers, and other paved borders and surfaced areas, such as irrigation trenches, shall be 1-1/2 inches, plus or minus 1/4 inch, below the finish grade of the adjacent hardscape features, after fine grading, rolling, and settlement of the soil. Do not mechanically compact planting areas. Soil in planting areas shall remain friable and not to exceed 85 percent relative compaction.

F. Just prior to laying of sod, broadcast ammonium phosphate (16-20-0) at the rate of 20 lbs./1000 sq. ft. unless otherwise noted in the drawings, or as recommended in the soil test and report.

G. Unroll the sod; fit each strip tightly to the preceding strip. Do not stretch. Install each strip together as tightly as possible and without gaps or overlap. Sod shall be placed so that the ends of adjacent strips of sod are staggered a minimum of 2 feet. Edges and ends of sod shall be placed firmly against adjacent sod and against sidewalks, concrete headers, header boards, and other paved borders and surfaced areas.

H. After placement of the sod, the entire sodded area shall be lightly rolled to eliminate air pockets and to ensure close contact with the soil. After rolling, the sodded areas shall be watered so that the soil is moistened to a minimum depth of 4 inches. The second rolling shall be at a cross angle from the first rolling. Upon completion of the rolling, apply sufficient water to wet the sod and soil to a depth of 6 inches. Sod shall be kept moist for the next 10 Days. Care shall be taken to prevent footprints in the sod. Sod shall not be allowed to dry out.

I. If irregular or uneven areas appear before or during the plant maintenance period, these areas shall be restored to a smooth and even appearance. Rocks, clods, and debris, which appear on the surface, shall be removed. Heaved, settled, or eroded areas, including but not limited to soil settlement, damage from burrowing and browsing animals, vandalism, and car traffic shall be restored by excavating, filling, finish grading, rolling, and re-sodding as required.

J. Temporary Construction Fencing shall be placed around sod areas beginning at finish grading operation through to final inspection to prevent through traffic. Barriers shall not create a hazard for pedestrian or vehicular traffic.

K. Apply second application of fertilizer after 45-60 Days. Apply ammonium phosphate (16-20-0) at the rate of 10 lbs per 1,000 square feet. Apply additional fertilizer applications as required and in accordance with accepted horticultural practices for sod maintenance. Mow, trim, cut down seed heads and keep sod in a neat orderly appearance at all times and as directed by the City's Representative. Bag grass cuttings while mowing and sweep up all trimmings and plant debris and dispose of Jobsite. Sod that has become uneven, weedy, damaged, diseased, vandalized or dies prior to final acceptance shall be removed and replaced with same type of sod. Replanting shall follow same planting procedures as outlined above. All grass from sod areas shall be healthy, strongly rooted, free of the following, weeds, disease, thatch, pests, damage, bare spots or stones, and shall show no signs of mechanical injury at final inspection.

3.03 PRELIMINARY INSPECTION

A. At the completion of work, request a preliminary inspection to determine the condition of the grass from sod.

B. Inspection shall be requested 48 hours in advance.

3.04 INSPECTION

A. Grass from sod considered ready for inspection shall conform to the following:

1. Grass from sod areas shall be established and show a uniform, undamaged, healthy, and full stand of grass with a smooth and uninterrupted grass surface.

2. Sodded areas shall be uniform in slope in accordance with these Construction Specifications and shall conform to the finish grades as shown on the Contract Drawings.

3.05 APPROVAL

A. If the installation is found satisfactory, the work will be accepted by the City's Representative in writing.

B. If the installation is found unsatisfactory, the City Project Inspector or Project Landscape Architect will provide a punch list to the Contractor. The Contractor is responsible for requesting additional inspections after the conditions of the punch list have been corrected.

3.06 REPLACEMENT

A. Replace grass from sod in any area where growth is not vigorous, damaged, diseased, spotty, missing, or dead.

B. The replacement grass from sod shall be of the same type and quality as the original.

3.07 MAINTENANCE OF SOD

A. Maintenance of sod shall be addressed herein below.

1. Maintenance shall include, but is not limited to all watering, weeding, fertilizing, cultivation, grass mowing and trimming, rodent control, other wildlife and animal control, spraying, re-sodding and replacement of damaged, dead and dying grass areas, and mowing and trimming as directed by the City Project Inspector or Project Landscape Architect and as necessary to keep the sod in a healthy growing condition and to keep the planted areas neat and attractive in appearance throughout the maintenance period. Sod shall be kept at optimum moisture condition for thriving growth without over watering. During the maintenance period, should the appearance of any sod areas indicate weakness and the probability of dying, in the opinion of the City Project Inspector or Project Landscape Architect, the area showing such weakness shall be removed and re-sodded immediately by the Contractor. Replacement of grass from sod shall be made in the same manner as specified for the original grass from sod. At the end of the maintenance period, all grass from sod areas shall be in a healthy growing condition and free of physical injury of any kind.

2. Mowing

a. Winter: Mow grass to 2-1/2 inches when it reaches a height of 3-1/2 inches.

b. Other Seasons: Mow grass to 3 inches when it reaches a height of 4 inches.

c. Bruising or rough cutting of grass will not be permitted. Mowers will also be adjusted and operated so that the grass is cut at a uniform height. Scalping of high places or crowns of mounds will not be permitted. Remove papers and debris prior to mowing.

d. The Contractor shall be responsible for mowing installed sod and all adjacent sod within the temporary construction fence and outside said fence for the entirety of the Plant Establishment Period. At no time shall the contractor allow sod outside the temporary construction fence reach a height greater than 6 inches.

e. At no point shall City crews enter the project limits of work to perform mowing. If City enters the site, at the request of the Contractor, or at the direction of the City due to

negligence of the Contractor to perform mowing, the Contractor shall be charged on a time and materials basis, by the City, and the cost for performing said work shall be retained from their contract, and deducted.

B. Work under this Construction Specifications Section shall include complete responsibility for maintaining adequate protection for all areas. Damaged areas shall be repaired at no additional expense to the City.

C. Weed all areas at intervals of not more than 10 Days.

D. Rocks, clods, and debris, which appear on the surface, shall be removed. Heaved, settled, or eroded areas shall be restored by excavating, filling, finish grading, rolling, and re-sodding as required.

E. All other aspects of the scope of the Plant Establishment Period as needed to maintain sod, shall apply to this section.

3.08 PLANT ESTABLISHMENT PERIOD

A. A planting review and preliminary inspection and punch list for the plantings will be held by the City Project Inspector, Project Landscape Architect, and the Park Superintendent upon written request of the Contractor. The Plant Establishment Period may begin only after the City Project Inspector, Project Landscape Architect and Parks Superintendent have given written acceptance of the landscape and irrigation system installation.

B. The start of the maintenance of sod shall coincide with the plant maintenance period. A longer period may be required if necessary to establish acceptable stands of thriving grass.

C. Plant Establishment Period: The maintenance and plant establishment period for all landscaped areas shall be thirty (30) days.

D. Upon completion of all planting and clean-up operations, notify the City Project Inspector or Project Landscape Architect, in writing, a minimum of 3 Days in advance, to request a final inspection.

E. Start of Plant Establishment Period: Upon written approval of the work by the City Project Inspector of Senior Construction Coordinator, the maintenance period shall begin. The first day of that period shall be specified in the Engineer's report, but not before all planting and irrigation punch list items are complete.

F. Days during which no work will be required, as determined by the City Project Inspector or Project Landscape Architect, will be credited as Plant Establishment Days, regardless of whether or not the plant establishment work has been performed.

G. Days when the plant establishment work has not been adequately performed, including watering plants, replacing unsuitable plants, repairing erosion damage, and performing weed, rodent, and other pest control as determined necessary by the Project Inspector or Project Landscape Architect, will not be credited as Plant Establishment Days.

H. Upon completion of the Plant Establishment Period, submit a written request for inspections by the City Project Inspector or Project Landscape Architect as specified herein.

I. Plant Establishment Period Scope: The Contractor shall provide complete landscape maintenance of all planting areas. The work shall include, but not be limited to, watering, litter control, insect, disease and pest control, mowing, fertilizing, pruning, weed control, rolling, cultivating, repair of irrigation systems, and erosion control.

J. Watering

1. The moisture content in all planted areas shall be sufficient to insure healthy plants and vigorous growth. This shall be accomplished by means of visual observation of plant material and the surrounding surface soil conditions within any given area.
2. Observed deficiencies or excesses in watering program will be corrected immediately by the adjustment of controllers, as required. Controllers shall be programmed to water deeply without runoff by use of short repeat cycles.
3. Irrigation shall be controlled and individual heads adjusted to prevent overspray and runoff onto paved areas.
4. Trees planted within Tree Well Planters are not on an irrigation system and shall be watered by hand.

K. Insect, Disease and Pest Control: Pesticides and herbicides are not allowed unless approved by the City.

L. Weed Control

1. Weeds shall be kept under control by hand or by the application of herbicides designed for use on any type of weeds invading the planting areas, at not less than 10-day intervals.
2. All equipment used for applying herbicides shall be properly cleaned before it is used on this project. Herbicides shall be applied per manufacturer's printed instructions. Herbicides shall not be used during windy or gusty days. All possible precautions shall be taken to protect desirable vegetation from damage. Any repair, or replacement with new plants of existing trees to be preserved shall be at the Contractor's expense.
3. The application of herbicides in lieu of hand weeding may only occur after submittal of an herbicide application schedule, the effect of proposed herbicide on surrounding vegetation, and approval of the schedule by the City Park Superintendent and Project Landscape Architect, in writing.

M. Replacements: Immediately replace any plant materials that die or are damaged within 5 working days. Replacements shall be made to the specifications required for original plantings.

N. Condition of Plantings at the End of the Maintenance Period.

1. All plant materials shall be live, healthy, undamaged, and free from infestations.
2. Planting areas shall be free of all broadleaf and grass weeds.
3. Plantings that do not conform to these specifications shall be replaced and brought to a satisfactory condition before final acceptance of the work.

O. Final Inspection and Acceptance.

3.09 GUARANTEE

A. All plants installed under the contract shall be guaranteed to live and grow for a period of one year from the date of final acceptance of contract work.

B. Any material found to be dead, missing, or in poor condition during the guarantee period, shall be replaced by the Contractor within fifteen (15) days of written notification by the City. Replacement shall be made to the same specifications required for original plantings, and shall be at no cost to the City.

C. Guarantee that sod will take root and grow vigorously within 1 year after final acceptance of plantings, when such plants have received normal care and maintenance.

D. Corrective work shall include removal and replacement of all guarantied plant materials which, for any reason, fail to meet the requirements of the guaranty. Replacements shall meet the same requirements as specified for the original materials. Replacements shall carry the same guaranty period that shall start from the time the replacements are planted and accepted.

3.10 FINAL INSPECTION AND ACCEPTANCE

A. Final inspection will be conducted at the end of the Maintenance Period. Notice requesting final inspection shall be submitted by the Contractor to the Project Inspector or Project Landscape Architect at least 7 Days prior to the anticipated date.

B. Acceptance of the work by the Project Inspector or Project Landscape Architect will be contingent upon proper maintenance and the establishment of a vigorous, uniform stand of grass over all areas with grass from sod. Any portion thereof, which does not show a vigorous, uniform stand of grass, shall make all grass from sod areas subject to continued maintenance at the Contractor's expense.

C. The irrigation system shall also be tested at this time. See Section 32 84 00 “Irrigation Adjustment”, for additional information.

D. Just prior to final inspection, 16-6-8 granular form commercial fertilizer shall be applied as follows:

Plant Size	*Qty. Fertilizer*
Grass from sod	6 lbs./1,000 sq. ft.

E. At the final inspection, the Project Inspector or Project Landscape Architect will determine the condition of improvements, and grass from sod. Grass from sod, which is missing, spotty, vandalized, dead, or unhealthy, shall be replaced by the Contractor with the same species and methods originally specified. The Contractor shall make replacements within 2 weeks after final inspection and maintain grass from sod areas for an additional 30 Days.

F. If Contract improvements, corrective work, and maintenance have not been performed as specified, maintenance shall continue at the Contractor's expense until such time as the work has been successfully completed. Should work have been performed as specified, the City will assume maintenance responsibilities following the final inspection. City Representative will send written Notice of Acceptance of the work to the Contractor.

3.11 MEASUREMENT AND PAYMENT

A. The square foot contract price paid for “**Sod”** of the unit price schedule shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work covered in this section, including water settlement, weed eradication, soil prepertion and amendment, complete in place as shown on the plans, as required by these Special Provisions, and as directed by the City Engineer.

B. The lump sum contract price paid for “Plant Establishment Period” of the unit price schedule shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work covered in this section complete in place as shown on the plans, as required by these Special Provisions, and as directed by the Landscape Architect.

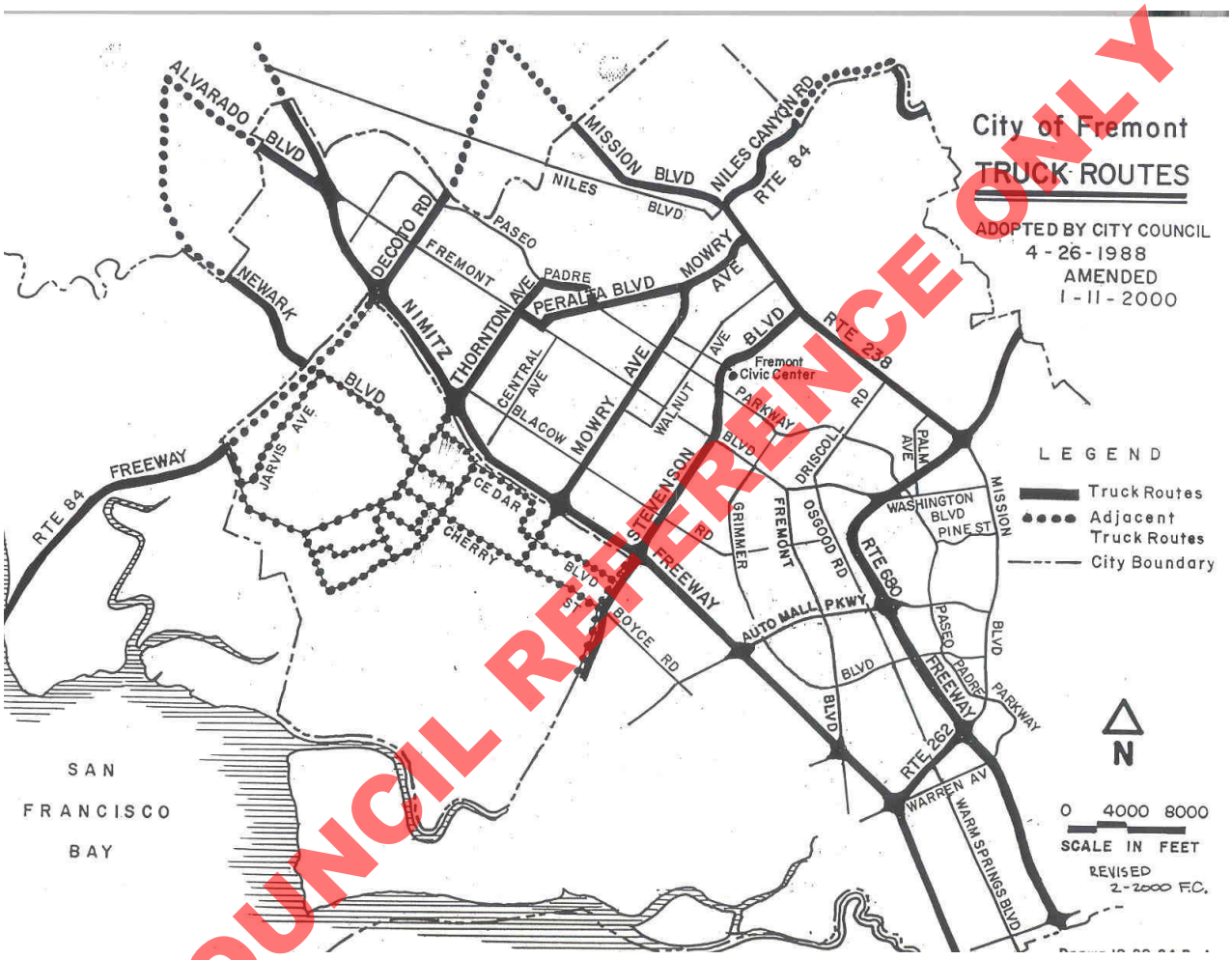
END OF SECTION

APPENDICES

APPENDIX A

Truck Routes

Truck Routes. Pursuant to City ordinances, use only authorized truck routes. For more information, refer to http://www.fremont.gov/Permits/EngineeringPermits/TransportationPermit.htm.



APPENDIX B

SUBCONTRACTOR BUSINESS TAX SHEET STATUS

SUBCONTRACTOR BUSINESS TAX STATUS SHEET

Must Be Validated Prior to Final Inspection

GENERAL CONTRACTOR'S NAME: _____

JOB ADDRESS: _____ B.P. NUMBER: _____

LICENSE CLASS	SPECIALTY CLASS	NAME OF FIRM / ADDRESS / TELEPHONE	STATE CONTRACTOR'S LICENSE NUMBER
A	General Engineering	( ) -	
B-1	General Contractor	( ) -	
C-2	Insulation/ Acoustical	( ) -	
C-4	Boiler / Water Heater	( ) -	
C-6	Cabinet/ Millwork	( ) -	
C-8	Concrete	( ) -	
C-9	Drywall	( ) -	
C-10	Electrical	( ) -	
C-11	Elevator	( ) -	
C-12	Earthwork/ Paving	( ) -	
C-13	Fencing	( ) -	
C-15	Flooring & Covering	( ) -	
C-16	Fire Protection	( ) -	
C-17	Glazing	( ) -	
C-20	Heat/Vent/ Air Condition	( ) -	
C-21	Bldg Move / Demo	( ) -	
C-23	Ornamental Metal	( ) -	
C-26	Lathing	( ) -	
C-27	Landscape	( ) -	
C-29	Masonry	( ) -	

LICENSE CLASS	SPECIALTY CLASS	NAME OF FIRM / ADDRESS / TELEPHONE	STATE CONTRACTOR'S LICENSE NUMBER
C-32	Parking/ Hwy. Improvement	( ) -	
C-33	Painting / Decorating	( ) -	
C-34	Pipeline	( ) -	
C-35	Plastering	( ) -	
C-36	Plumbing	( ) -	
C-38	Refrigeration	( ) -	
C-39	Roofing	( ) -	
C-42	Sanitation System	( ) -	
C-43	Sheet Metal	( ) -	
C-45	Electrical Sign	( ) -	
C-46	Solar	( ) -	
C-47	Gen. Manuf. Housing	( ) -	
C-50	Reinforcing Steel	( ) -	
C-51	Structural Steel	( ) -	
C-53	Swimming Pool	( ) -	
C-54	Tile	( ) -	
C-55	Water Conditioning	( ) -	
C-57	Well Drilling	( ) -	
C-60	Welding	( ) -	
C-61	Limited Specialty	( ) -	

NOTE: Final Inspection and/or Utility Release shall not be authorized until this form has been completed and returned to the Building Inspection Office.

Prepared by: _____ Date: _____

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APPENDIX C

POTHOLING REPORT

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Technologies Corporation

City of Fremont - Jenny Potholing Report

3/3/2022

EXARO Technologies Corporation
1831 Bayshore Highway
Burlingame, California
Mario Lopez
Office (650)777-4324
Cell: (408)221-5090
mle@exarotec.com

Date:	3/3/2022
Prepared For:	**City of Fremont - Jenny Suen**
Project #:	22-1014
Location:	Fremont

EXARO
Technologies Corporation

PH #	Street	Cut Size	Asph	Conc.	Soil	Utility	Utility Size	Material	Depth	Location Reference / Notes
1	Basketball Court - Rix Park	1' x 1'	5"		Base Rock				Base Rock @ 6"	East side of Basketball Court.
2	Basketball Court - Rix Park	1' x 1'	5"		Base Rock				Base Rock @ 5"	West side of Basketball Court.

Foreman	Yo Sing	Addt'l Crew/Flagger	
Technician	Candido Gomez	Addt'l Crew/Flagger	
			Standby Rep
			Client Rep

Timesheet	Date	Start/End	Hours	OT	Night Stay
Monday		/			
Tuesday		/			
Wednesday		/			
Thursday	3/3/2022	6:30 to 10:30	4		
Friday		/			
Saturday		/			
Sunday		/			

Check		Check	
Arrow Board	☐	Electronic Detector	☐
Cold patch	☑	GPR	☐
Class II	☑	Pk nails & shiners	☐
Hotmix Aspht	☐	Vibra-plate	☐
CDF/slurry	☐	Flat bed	☐
Ready-mix concrete	☐	Pick-up truck #	☐
Cutback	☐	Vac rig # 8	☑

Additional Equipment/Material used:

Field Changes or Special Requests from Client Representative:

Client Representative Signature:

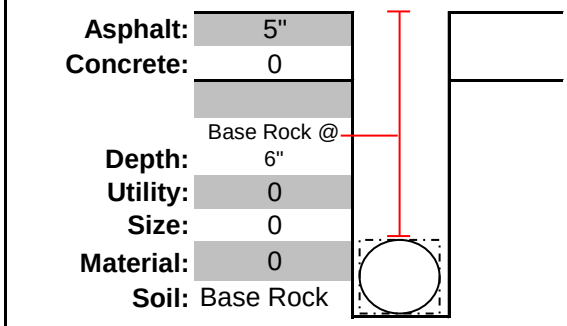
Subsurface Utility Report	
Client	City of Fremont - Jenny Suen
Project #	22-1014
City	Fremont
Date	3/3/2022

EXARO
Technologies Corporation

Pothole # 1

Street: Basketball Court - Rix Park

Cut Size: 1' x 1'



Location:
East side of Basketball Court.

Notes:

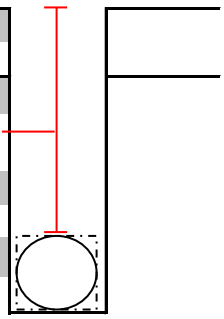
~ Delivering Excellence with a Sense of Urgency ~ ™

Subsurface Utility Report	
Client	City of Fremont - Jenny Suen
Project #	22-1014
City	Fremont
Date	3/3/2022

EXARO
Technologies Corporation

Pothole # 2 **Street:** Basketball Court - Rix Park

Cut Size: 1' x 1'



Asphalt:	5"
Concrete:	
Depth:	5"
Utility:	0
Size:	0
Material:	0
Soil:	Base Rock

Location:
West side of Basketball Court.

Notes:

~ Delivering Excellence with a Sense of Urgency ~ ™

APPENDIX D

GEOTECHNICAL REPORT

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Geotechnical Evaluation
Rix Park Basketball Court
Fremont, California

City of Fremont
39550 Liberty Street | Fremont, California 94538

March 31, 2022 | Project No.: 404198001





Geotechnical | Environmental | Construction Inspection & Testing | Forensic Engineering & Expert Witness

Geophysics | Engineering Geology | Laboratory Testing | Industrial Hygiene | Occupational Safety | Air Quality | GIS

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

CELEBRATING 35 YEARS

Geotechnical Evaluation
Rix Park Basketball Court
Fremont, California

Ms. Jennie Suen
City of Fremont
39550 Liberty Street | Fremont, California 94538

March 31, 2022 | Project No.: 404198001

REGISTERED PROFESSIONAL ENGINEER
RANSOM H. HENNEFER
GE 3152
March 31, 2022
GEOTECHNICAL
STATE OF CALIFORNIA

Rathna P. Mothkuri, PMP
Senior Staff Engineer

Ransom H. Hennefer, PE, GE
Principal Engineer

JW/RPM/DCS/RH/dcl

CONTENTS

TABLES

FIGURES

APPENDICES

1 INTRODUCTION

In accordance with your request and authorization, we have performed a geotechnical evaluation for the Rix Park Basketball Court Project located in Fremont, California (Figure 1). The purpose of our study was to assess the subsurface conditions at the site and provide recommendations for the design and construction of the proposed improvements.

2 SCOPE OF SERVICES

The services we performed included the following:

- Review of readily available geologic literature pertinent to the project area including regional geologic maps and reports and aerial photographs.
- A site reconnaissance to observe the general site conditions and to mark the proposed locations for subsurface exploration.
- Coordination with Underground Service Alert (USA) to locate and mark underground utilities in the vicinity of the subsurface exploration locations.
- A private utility survey by electro-magnetic scanning to check the exploration locations for potential conflicts with underground utilities.
- Procurement of a drilling permit from the Alameda County Water District.
- Subsurface exploration consisting of two (2) exploratory borings advanced up to 15 feet below existing grade. A representative of Ninyo & Moore logged the subsurface conditions exposed in the borings and collected bulk and relatively undisturbed soil samples for laboratory tests. The borings were backfilled with Portland cement grout in compliance with the Alameda County Water District regulations. Soil cuttings were disposed of offsite.
- Laboratory testing of selected soil samples to evaluate the geotechnical properties of the subsurface materials including in-situ soil moisture content and dry density, Atterberg limits, expansion index, R-value, unconfined compression, pH, reduction-oxidation potential, chloride content, sulfate content and solubility potential (total salts).
- Data compilation and engineering analysis of the information obtained from our background review, subsurface evaluation and laboratory testing.
- Preparation of this geotechnical report presenting our findings and conclusions regarding the subsurface conditions encountered at the project site, and our geotechnical recommendations for the design and construction of the proposed improvements.

3 SITE DESCRIPTION AND BACKGROUND

Rix Park is located in a residential neighborhood between Grimmer Boulevard and Interstate 880 in Fremont, California (Figure 1). The project site is located in the southern part of Rix Park and is bounded by Seneca Park Loop to the southeast, and by residential housing to the northeast and southwest (Figure 2). The project site is covered with grass, with several trees along the perimeter of the park. The site is relatively flat and lies at an elevation of approximately 32 feet above mean sea level [MSL] (City of Fremont, 2022).

4 PROJECT DESCRIPTION

Based on information provided by the City of Fremont (City of Fremont, 2022), the project will consist of design and construction of a new basketball court. We understand that the proposed basketball court will be paved with asphalt concrete over aggregate base and include a 6-inch wide concrete border.

5 SUBSURFACE EVALUATION AND LABORATORY TESTING

Our field exploration included a site reconnaissance and subsurface exploration of the project site. The subsurface exploration was conducted on February 25, 2022 and consisted of two (2) exploratory borings. The locations of the borings are presented on Figure 2. Prior to commencing the subsurface investigation, USA was notified and private utility locating was performed for field marking of existing utilities.

The borings were advanced to depths of up to approximately 15 feet below the existing grade with a truck-mounted drill rig equipped with solid-stem augers. A representative of Ninyo & Moore logged the subsurface conditions exposed in the borings and collected bulk and relatively undisturbed soil samples from the borings. The materials encountered in the borings were classified and logged in accordance with the Unified Soil Classification System (USCS). The samples were then transported to our geotechnical laboratory for testing. The borings were backfilled with cement grout and capped off with soil cuttings in accordance with Alameda County Water District requirements. Detailed logs of the borings are presented in Appendix A.

Laboratory testing of soil samples recovered from the borings included in-place soil moisture content and dry density, Atterberg limits, expansion index, R-value and unconfined compression. In addition, a soil sample was submitted to CERCO Analytical for a corrosivity evaluation. The results of the in-situ moisture content and dry density tests are presented on the boring logs in Appendix A. The results of the other laboratory tests, excluding the corrosivity testing, are presented in Appendix B. The results and findings of the corrosivity evaluation are provided in Appendix C.

6 SUBSURFACE CONDITIONS

The following section provides a generalized description of the materials encountered during our subsurface evaluation at the project site. More detailed descriptions are presented on the boring logs in Appendix A.

6.1 Alluvium

Alluvium was encountered in both of our borings to the depths explored. The alluvium encountered in the borings generally consisted of brown, dark brown and reddish brown, moist, stiff, lean clay and sandy lean clay.

6.2 Groundwater

Groundwater was not encountered at the time of drilling. Groundwater may rise to a higher level due to the relatively low seepage rate in clay and the limited time for observation. Fluctuations in the groundwater level may occur due to seasonal precipitation, variations in topography or subsurface hydrogeological conditions, or as a result of changes to nearby irrigation practices or groundwater pumping. In addition, seeps may be encountered at elevations above the historic high groundwater levels due to perched groundwater conditions, leaking pipes, preferential drainage or other factors not evident at the time of our exploration.

7 GEOTECHNICAL CONSIDERATIONS

This study considered a number of potential issues relevant to the proposed construction on the subject site, including expansive soils, static settlement, excavation characteristics and soil corrosivity. These issues are discussed in the following subsections.

7.1 Expansive Soil

Some clay minerals undergo volume changes upon wetting or drying. Unsaturated soil containing those minerals will shrink/swell with the removal/addition of water. The heaving pressures associated with this expansion can damage structures and flatwork. Laboratory testing was performed on a sample of the near-surface soil to evaluate the expansion index. The test was performed in accordance with American Society of Testing and Materials (ASTM) Standard D 4829 (Expansion Index). The results of our laboratory test indicate that the expansion index of the sample tested was 67. This result is indicative of a medium expansion characteristic. Remedial grading recommendations are provided.

7.2 Static Settlement

Based on documents provided, we understand that the sustained loads for the proposed basketball court and concrete curb are expected to be relatively light. We anticipate, therefore, that the total static settlement of above proposed structures due to sustained loads will be less than 1 inch, provided the recommendations presented in this report are followed.

7.3 Excavation Characteristics

We anticipate that the proposed project will involve excavations of up to a few feet for foundation construction. The soil encountered during our subsurface exploration over this interval below the near surface generally consisted of stiff lean clay. We anticipate that conventional earthmoving and drilling equipment in good working condition should be able to make the proposed excavations. Excavations in fill materials, if encountered, may encounter obstructions consisting of debris, rubble, abandoned structures, utilities or over-sized materials that may require special handling or demolition equipment for removal. Near vertical cuts may not be stable particularly if the excavation encounters sand or gravel, is exposed to rainfall or runoff, extends near the groundwater level or encounters seeping groundwater. Excavation subgrade may become unstable if exposed to wet conditions. Recommendations for excavation stabilization are presented in Section 9.1.9. Where encountered, moist excavated materials will need to be dried out before reuse as fill.

7.4 Corrosive/Deleterious Soil

Corrosivity analysis was performed by CERCO Analytical, Inc. of Concord, California on samples of the near-surface soil from boring B-1. As reported by CERCO Analytical, the samples were determined to be slightly corrosive based on resistivity test results. CERCO Analytical's report (see Appendix C) included the following recommendation: "All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion." Please refer to the CERCO Analytical report included in Appendix C for more information regarding their test results and brief evaluation.

8 CONCLUSIONS

Based on our review of the referenced background data, site reconnaissance, subsurface evaluation and laboratory testing, it is our opinion that the proposed construction is feasible from a geotechnical standpoint. Geotechnical considerations include the following:

- The subsurface conditions encountered during our exploration generally consisted of moist, stiff, lean clay and sandy lean clay.
- Groundwater was not encountered in our borings during our subsurface exploration. Variations in the groundwater level across the site and over time should be anticipated.
- Based on the findings of our subsurface evaluation, soils encountered in the exploratory excavations should generally be suitable for use as structural fill and backfill. The excavated on-site soils may be used as structural fill and backfill provided they meet recommendations provided in this report
- Static settlement should be tolerable for the proposed improvements provided that the proposed structures are supported on foundations that conform with our recommendations.
- Our laboratory test results indicate that the near-surface soil has a medium expansion characteristic. Remedial grading recommendations are provided.
- Based on the results of the soil corrosivity tests during this study, the soils are considered to be slightly corrosive (Appendix C). A corrosion engineer may be consulted to provide specific guidance on protective measures to mitigate corrosion.

9 RECOMMENDATIONS

The following guidelines should be used in the preparation of the construction plans. The project plans and specifications should be reviewed by Ninyo & Moore prior to construction bidding to check for consistency with these recommendations.

9.1 Earthwork

Earthwork should be performed in accordance with the requirements of applicable governing agencies and the recommendations presented below. The geotechnical consultant should observe earthwork operations. Evaluations performed by the geotechnical consultant during the course of operations may result in new recommendations, which could supersede the recommendations in this section.

9.1.1 Pre-Construction Conference

We recommend that a pre-construction conference be held to discuss the grading recommendations presented in the report. Representatives of City of Fremont, the engineer, Ninyo & Moore, and the contractor should be in attendance to discuss project schedule and earthwork requirements.

9.1.2 Site Preparation

Site preparation should begin with the removal of vegetation, utility lines, debris and other deleterious materials from areas to be graded. Tree stumps and roots should be removed to such a depth that organic material is generally not present. Clearing and grubbing should extend to the outside of the proposed excavation and fill areas. Rubble and excavated materials that do not meet criteria for use as fill should be disposed of in an appropriate landfill. Existing utilities in the work area should be relocated away from the proposed structures. Existing utilities to be abandoned should be removed, crushed in place or backfilled with grout.

Excavations resulting from removal of existing building foundations, buried utilities, tree stumps, or obstructions should be backfilled with compacted fill in accordance with the recommendations presented in the following sections.

9.1.3 Observation and Testing

Following completion of site clearing and stripping and prior to placement of fill, the exposed subgrade should be observed by Ninyo & Moore. Materials that are considered unsuitable shall be excavated under the observation of Ninyo & Moore in accordance with the recommendations provided in this section or supplemental recommendations by the geotechnical engineer.

Unsuitable materials include, but may not be limited to dry, loose, soft, wet, expansive, organic or compressible natural soil and undocumented or otherwise deleterious fill materials. Unsuitable materials should be removed from trench bottoms and below bearing surfaces to a depth at which suitable foundation subgrade, as evaluated in the field by Ninyo & Moore, is exposed.

9.1.4 Remedial Grading for Expansive Soil

Laboratory testing indicates that the near-surface soil on site has a medium expansion characteristic. To reduce the potential for differential movement and distress to the proposed improvements due to shrink/swell behavior, a zone of material with low expansion potential should be created by removing the existing soil, as-needed and placing fill with low expansion characteristics below pavement and flatwork. The zone of low expansion fill should consist of fill conforming with Section 9.1.6. Alternatively, the on-site soil may be chemically treated by mixing the soil with lime as described in Section 9.1.5 to reduce the expansion characteristic and create the zone of low expansion material.

The lateral limits of over-excavations or chemical treatment should extend a distance of 2 feet or more beyond the limits of the flatwork or pavement. The zone of low expansion material should extend to a depth of 12 inches below exterior flatwork and asphalt paving. The aggregate base or capillary break gravel under exterior flatwork or asphalt paving may be considered as part of the zone of low expansion material. The zone of exclusion/removal or lime treatment should be detailed on the construction plans to reduce the potential that these recommendations are overlooked during construction bidding.

9.1.5 Chemical Treatment

The on-site soil may be chemically treated with quicklime to reduce the expansion characteristic of the soil as an alternative to importing select fill to create a zone of low expansion potential below slabs, flatwork, and pavement. The on-site soil may be chemically treated with quicklime and cement to improve the subgrade support characteristics for pavements and reduce the quantity of import aggregate base material needed for pavements. The quicklime should conform with the American Society of Testing and Materials (ASTM) standard C977. The cement used for treatment should conform with ASTM standard C150 for Type II/V or Type V cement.

On-site materials containing roots or other organic matter are not suitable for chemical treatment and should be stripped from the area at which the treatment is to be performed. The chemical treatment should be performed by an experienced contractor that specializes in the chemical treatment of soil. The chemical agent should be proportioned and spread with a mechanical spreader and mixed into the soil on a mixing table or in place to produce consistent distribution of the agent within the treated layer. The depth of mixing should not exceed 12 inches per lift or the capacity of the mixer if less. Precautions to reduce the potential for dusting of quicklime or cement, such as scheduling or suspending operations to avoid windy weather, should be taken. Casting or tailgating of the chemical agent should not be permitted. The mixer should be equipped with a rotary cutting/mixing assembly, grade checker, and an automatic water distribution system. Mixing or spreading operations should not be performed during inclement weather or when the ambient temperature is less than 35 degrees Fahrenheit or during foggy or rainy weather. Adjacent passes of the mixer should overlap by 4 inches or more.

To reduce the expansive soil characteristic, quicklime should be mixed into the soil at a rate of 5 percent by dry weight of soil. Mixing and pulverizing should continue until the treated soil does not contain untreated soil clods larger than 1 inch and the quantity of untreated soil clods retained on the No. 4 sieve is less than 40 percent of the dry soil mass. Water should be added as needed during the mixing process to achieve a moisture content above the optimum, as evaluated by ASTM D1557, for the lime-soil mixture. The lime-soil mixture should be re-mixed following a 16-hour mellowing period after the initial mixing. The lime-soil mixture should be compacted within 3 days after initial mixing.

9.1.6 Material Recommendations

Materials used during earthwork, grading and paving operations should comply with the requirements listed in Table 1. Materials should be evaluated by the geotechnical engineer for suitability prior to use. The contractor should notify the geotechnical consultant 72 hours prior to import of materials or use of on-site materials to permit time for sampling, testing, and evaluation of the proposed materials. On-site materials may need to be dried out before re-use as fill. The contractor should be responsible for the uniformity of import material brought to the site.

Table 1 – Recommended Material Requirements

Material and Use	Source	Requirements[1,2]
General Fill: Import - for uses not otherwise specified	Import	Close-graded with 35 percent or more passing No. 4 sieve and either: Expansion Index of 50 or less, Plasticity Index of 15 or less, or less than 10 percent, by dry weight, passing No. 200 sieve
	On-site borrow	No additional requirements[1]
Aggregate Base	Import	Class II; CSS[4] Section 26-1.02
Controlled Low Strength Material (CLSM)	Import	CSS[4] Section 19-3.02F

Notes:

[1] In general, fill should be free of rocks or lumps in excess of 6 inches in diameter, trash, debris, roots, vegetation or other deleterious material.

[2] In general, import fill should be tested or documented to be non-corrosive[3] and free from hazardous materials in concentrations above levels of concern.

[3] Non-corrosive as defined by the Corrosion Guidelines (Caltrans, 2021).

[4] CSS is California Standard Specifications (Caltrans, 2018).

9.1.7 Subgrade Preparation

Subgrade below flatwork or fill should be prepared as per the recommendations in Table 2. Prepared subgrade should be maintained in a moist (but not saturated) condition by the periodic sprinkling of water prior to placement of additional overlying fill. Subgrade that has been permitted to dry out and loosen or develop desiccation cracking, should be scarified, moisture-conditioned and recompacted as per the requirements above.

Table 2 – Subgrade Preparation Recommendations

Subgrade Location	Source
Below fill and flatwork	• After clearing per Section 9.1.2, check for unsuitable materials as per Section 9.1.3. • Scarify top 8 inches then moisture-condition and compact as per Section 9.1.8. • Keep in moist condition by sprinkling water.
Footings, curbs, and utility Trenches	• After clearing per Section 9.1.2, check for unsuitable materials as per Section 9.1.3. • Remove or compact loose/soft material.

9.1.8 Fill Placement and Compaction

Fill and backfill should be compacted in horizontal lifts in conformance with the recommendations presented in Table 3. The allowable un-compacted thickness of each lift of fill depends on the type of compaction equipment utilized, but generally should not exceed 8 inches in loose thickness for large grading equipment and 4 inches in loose thickness for manually operated equipment such as jumping jacks or vibratory plate compactors.

Table 3 – Fill Placement and Compaction Recommendations

Fill Type	Location	Compacted Density[1]	Moisture Content[2]
Subgrade	Flatwork, or fill and in locations not already specified	90 percent	+ 2 percent or above
General Fill	In locations not already specified	90 percent	+ 2 percent or above
Aggregate Base	Below pavement and hardscape	95 percent	Near Optimum

Notes:

1 Expressed as percent relative compaction or ratio of field density to reference density (typically on a dry density basis for soil and aggregate). The reference density of soil and aggregate should be evaluated by ASTM D 1557.

2 Target moisture content at compaction relative to the optimum as evaluated by ASTM D 1557.

Compacted fill should be maintained in a moist (but not saturated) condition by the periodic sprinkling of water prior to placement of additional overlying fill. Fill that has been permitted to dry out and loosen or develop desiccation cracking, should be scarified, moisture-conditioned and recompacted as per the requirements above.

9.1.9 Temporary Excavations

Temporary slope surfaces should be kept moist to retard raveling and sloughing. Water should not be allowed to flow over the top of excavations in an uncontrolled manner. Stockpiled material and/or equipment should be kept back from the top of excavations a distance equivalent to the depth of the excavation or more. Workers should be protected from falling debris, sloughing and raveling in accordance with Occupational Safety and Health Administration (OSHA) regulations (OSHA, 2021). Temporary excavations should be observed by the project's geotechnical consultant so that appropriate additional recommendations may be provided based on the actual field conditions. Temporary excavations are time sensitive and failures are possible.

9.2 Seismic Design Criteria

Design of the proposed improvements should be performed in accordance with the requirements of the governing jurisdictions and applicable building codes. Table 5 presents the seismic design parameters for the site in accordance with the CBC (2019) guidelines and adjusted MCER spectral response acceleration parameters (SEAOC and OSHPD, 2022).

Table 4 – California Building Code Seismic Design Criteria

Seismic Design Parameter	Value
Site Classification	D - Default
Site Coefficient, F_a	1.2
Site Coefficient, F_v	-
Mapped Spectral Response Acceleration at 0.2-second Period, S_s	2.034g
Mapped Spectral Response Acceleration at 1.0-second Period, S_1	0.781g
Spectral Response Acceleration at 0.2-second Period Adjusted for Site Class, S_{MS}	2.441g
Spectral Response Acceleration at 1.0-second Period Adjusted for Site Class, S_{M1}	-
Design Spectral Response Acceleration at 0.2-second Period, S_{DS}	1.625g
Design Spectral Response Acceleration at 1.0-second Period, S_{D1}	-
Seismic Design Category for Risk Category I, II, or III	II

9.3 Foundations

We anticipate that the basketball court poles will be founded on conventional spread footings or on shallow drilled pier foundations. Foundations should be designed in accordance with structural considerations and the following recommendations. In addition, requirements of the appropriate governing jurisdictions and applicable building codes should be considered in design of the structures.

9.3.1 Spread Footings

Any structure foundations consisting of spread footings should extend 12 inches or more below the lowest adjacent finished grade. Footings should have a width of 12 inches or more. Spread footings should be reinforced with a minimum of two No. 4 steel reinforcing bars, one placed near the top and one placed near the bottom of the footings and further detailed in accordance with the recommendations of the structural engineer.

Footings, as described above and bearing on compacted fill soils with low expansion potential, may be designed using a net allowable bearing capacity of 1,200 psf. The allowable bearing capacity may be increased by one-third when considering loads of short duration such as wind or seismic forces.

Total and differential settlements for footings designed and constructed in accordance with the above recommendations are estimated to be less than approximately ½ inch and ¼ inch.

Footings bearing on compacted fill or native alluvium may be designed using a coefficient of friction of 0.35, where the total frictional resistance equals the coefficient of friction times the dead load. Footings may be designed using a passive resistance of 300 psf per foot of depth for level ground condition up to a value of 2,500 psf. The upper 1 foot of soil should be neglected when adjacent surfaces are not covered by pavement. The allowable lateral resistance can be taken as the sum of the frictional resistance and passive resistance provided the passive resistance does not exceed one-half of the total allowable resistance. In the event that the passive resistance is greater than one-half of the total allowable resistance, the passive resistance should be reduced to be the same value as the frictional resistance. The passive resistance may be increased by one-third when considering loads of short duration such as wind or seismic forces.

9.3.2 Drilled Piers

Drilled piers embedded 5 to 15 feet deep may be designed for an allowable side friction of 200 pounds per square foot (psf) to evaluate resistance to downward axial loads and 100 psf per foot depth for upward axial loads. The allowable side friction may be increased by one-third when considering loads of short duration, such as wind or seismic loads.

An allowable lateral bearing pressure of 150 psf per foot depth up to 1,500 psf may be used to evaluate resistance to lateral loads and overturning moments. The allowable lateral bearing pressure may be increased by a factor of two for structures that can accommodate ½ inch of lateral deflection and by 1⅓ for wind or seismic loading conditions.

Drilled pier excavations should be cleaned of loose material prior to pouring concrete. Drilled pier excavations that encounter groundwater or cohesionless soil may be unstable and may need to be stabilized by temporary casing or use of drilling mud. Standing water should be removed from the pier excavation or the concrete should be delivered to the bottom of the excavation, below the water surface, by tremie pipe. Casing should be removed from the excavation as the concrete is placed. Concrete should be placed in the piers in a manner that reduces the potential for segregation of the components.

9.4 Exterior Concrete Flatwork and Curbs and Gutters

Exterior concrete flatwork, such as walkways and larger slabs, should be founded on 6 inches of Type II Aggregate Base overlying subgrade that has either been remediated per Section 9.1.4 or chemically treated per Section 9.1.5. Type II Aggregate Base should be compacted to at least 95 percent relative compaction, as evaluated by ASTM D 1557.

Pedestrian concrete flatwork should be 4 inches thick. To reduce the potential for shrinkage cracks, the flatwork should be constructed with control joints spaced approximately 5 feet apart for walkways and approximately 10 feet on-center each way for larger slabs. Crack control joint spacing should be in accordance with recommendations of a qualified structural engineer. Reduced joint spacing may be recommended by the structural engineer.

Formation of shrinkage cracks in concrete slabs and other cracks due to minor soil movement, may be further reduced by utilizing steel reinforcement, such as welded wire mesh. However, due to the inherent difficulty in positioning welded wire mesh in the middle of concrete flatwork, other crack control methods should be considered, such as placement in the concrete of No. 3 steel reinforcing bars at approximately 24 inches on-center each way. Reinforcement of the flatwork should be placed at approximately mid-height in the concrete utilizing “chairs.”

Exterior concrete flatwork, curbs and gutters should be constructed in accordance with the recommendations of the project's civil or structural engineer and governing agency requirements. Recommendations regarding concrete utilized in construction of proposed improvements are provided in Section 9.6.

9.5 Asphalt Concrete Pavement for Basketball Court

The design R-value used to evaluate the pavement section for the proposed basketball court was selected based on our laboratory test results, as indicated in Appendix B. The pavement subgrade should be observed by the geotechnical engineer during grading to check that the exposed materials are consistent with the findings from our subsurface exploration and the support characteristics assumed for pavement design. Aggregate base for pavement should be compacted to 95 percent of the reference density as evaluated by ASTM D1557. Asphalt concrete should be compacted to 91 to 97 percent of the reference density as evaluated by ASTM D2041.

Ninyo & Moore conducted an analysis to evaluate appropriate asphalt pavement structural sections following the methodology presented in the Highway Design Manual (Caltrans, 2020). Alternative sections were evaluated. The pavement sections were designed for a 20-year service life presuming that periodic maintenance, including crack sealing and resurfacing will be performed during the service life of the pavement. Premature deterioration may occur without periodic maintenance. Our recommendations for the pavement sections are presented in Table 5. Paving operations and base preparation should be observed and tested by Ninyo & Moore.

Table 5 – Asphalt Concrete Pavement Sections for Basketball Court

Design R-Value	Traffic Index	Alternative 1	Alternative 2
11	3	2 inches AC[1] 4 inches AB[2]	2 inches AC 4 inches AB 8 inches TS[2]
11	4	2½ inches AC 6 inches AB	2½ inches AC 4 inches AB 8 inches TS
11	5	3 inches AC 9 inches AB	3 inches AC 5 inches AB 8 inches TS
11	6	3½ inches AC 11½ inches AB	3½ inches AC 7 inches AB 8 inches TS

Notes:
[1] AC is Type A, Dense-Graded Hot Mix Asphalt complying with Caltrans Standard Specification 39-2 (2018).
[2] AB is Class II Aggregate Base complying with Caltrans Standard Specification 26-1.02 (2018).
[3] TS is chemically treated subgrade consistent with Section 9.1.5.

Pavements should be sloped so that runoff is diverted to an appropriate collector (concrete gutter, swale or area drain) to reduce the potential for ponding of water on the pavement. Concentration of runoff over asphalt pavement should be discouraged.

9.6 Concrete

Due to the variability in the on-site soil, we recommend that Type II/V or Type V cement be used for concrete structures in contact with soil. In addition, we recommend a water-to-cement ratio of no more than 0.45. A 3-inch thick, or thicker, concrete cover should be maintained over reinforcing steel where concrete is in contact with soil in accordance with Section 20.6 of ACI Concrete Institute (ACI) Committee 318 (ACI, 2014).

9.7 Review of Construction Plans

The recommendations provided in this report are based on preliminary design information for the proposed construction. We recommend that a copy of the plans be provided to Ninyo & Moore for review before bidding to check the interpretation of our recommendations and verify that the designed improvements are consistent with our assumptions. It should be noted that, upon review of these documents, some recommendations presented in this report might be revised or modified to meet the project requirements.

9.8 Construction Observation and Testing

The recommendations provided in this report are based on subsurface conditions encountered in relatively widely spaced exploratory borings. During construction, the geotechnical engineer or his representative in the field should be allowed to check the exposed subsurface conditions. During construction, the geotechnical engineer or his representative should be allowed to:

- Observe preparation and compaction of subgrade.
- Check and test imported materials prior to use as fill.
- Observe placement and compaction of fill.
- Perform field density tests to evaluate fill and subgrade compaction.
- Observe drilling and installation of drilled piers.

The recommendations provided in this report assume that Ninyo & Moore will be retained as the geotechnical consultant during the construction phase of the project. If another geotechnical consultant is selected, we request that the selected consultant provide a letter to the architect and the owner (with a copy to Ninyo & Moore) indicating that they fully understand Ninyo & Moore's recommendations and that they are in full agreement with the recommendations contained in this report.

10 LIMITATIONS

The field evaluation, laboratory testing and geotechnical analyses presented in this geotechnical report have been conducted in general accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in the project area. No warranty, expressed or implied, is made regarding the conclusions, recommendations and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be encountered during construction. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface evaluation will be performed upon request. Please also note that our evaluation was limited to assessment of the geotechnical aspects of the project and did not include evaluation of structural issues, environmental concerns or the presence of hazardous materials.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented or completeness of this document.

This report is intended for design purposes only. It does not provide sufficient data to prepare an accurate bid by contractors. It is suggested that the bidders and their geotechnical consultant perform an independent evaluation of the subsurface conditions in the project areas. The independent evaluations may include, but not be limited to, review of other geotechnical reports prepared for the adjacent areas, site reconnaissance and additional exploration and laboratory testing.

Our conclusions, recommendations and opinions are based on an analysis of the observed site conditions. If geotechnical conditions different from those described in this report are encountered, our office should be notified and additional recommendations, if warranted, will be provided upon request. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes and standards of practice may occur because of government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

11 REFERENCES

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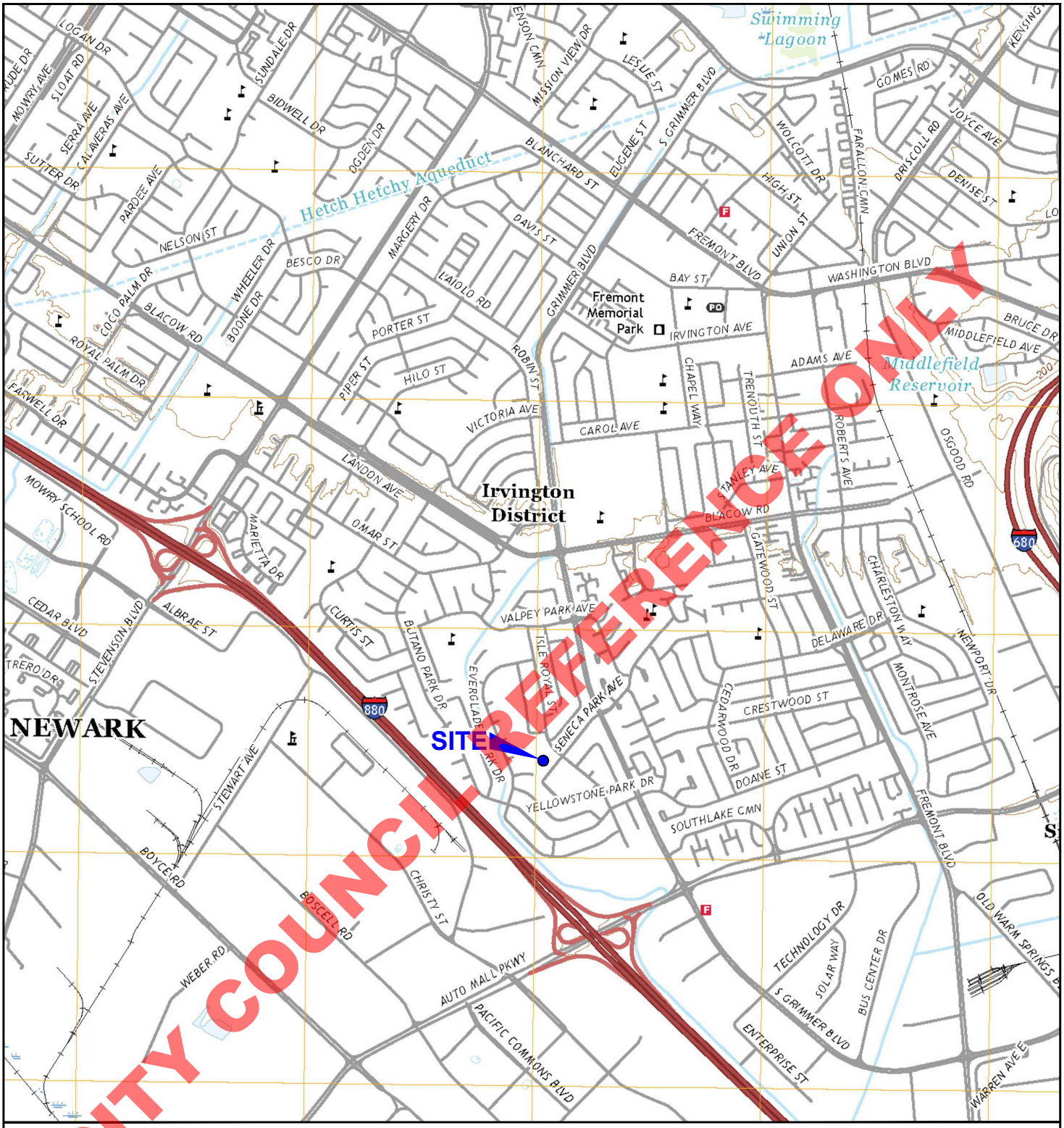
FIGURES



404198001.dwg 03/15/2022 AEK

NOTE: DIMENSIONS, DIRECTIONS, AND LOCATIONS ARE APPROXIMATE I REFERENCE: USGS, 2018

N

SCALE (FEET)
0 2,000 4,000

FIGURE 1

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

SITE LOCATION

RIX PARK BASKETBALL COURT
FREMONT, CALIFORNIA
404198001 I 03/22

LEGEND

PROJECT BOUNDARY

B-1 (15.0') BORING LOCATION (TOTAL DEPTH, IN FEET)

NOTE: DIMENSIONS, DIRECTIONS, AND LOCATIONS ARE APPROXIMATE | REFERENCES: GOOGLE EARTH, 2022

N

SCALE (FEET)

0 60 120

404198001.dwg 03/15/2022 AEK

FIGURE 2

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

SITE PLAN

RIX PARK BASKETBALL COURT
FREMONT, CALIFORNIA
404198001 I 03/22

APPENDIX A

Boring Logs

APPENDIX A

BORING LOGS

Field Procedure for the Collection of Disturbed Samples

Disturbed soil samples were obtained in the field using the following methods.

Bulk Samples

Bulk samples of representative earth materials were obtained from the exploratory borings. The samples were bagged and transported to the laboratory for testing.

The Standard Penetration Test (SPT) Sampler

Disturbed drive samples of earth materials were obtained by means of a Standard Penetration Test sampler. The sampler is composed of a split barrel with an external diameter of 2 inches and an unlined internal diameter of 1-3/8 inches. The sampler was driven into the ground 12 to 18 inches with a 140-pound hammer freely falling from a height of 30 inches in general accordance with ASTM D 1586. The blow counts were recorded for every 6 inches of penetration; the blow counts reported on the logs are those for the last 12 inches of penetration. Soil samples were observed and removed from the sampler, bagged, sealed and transported to the laboratory for testing.

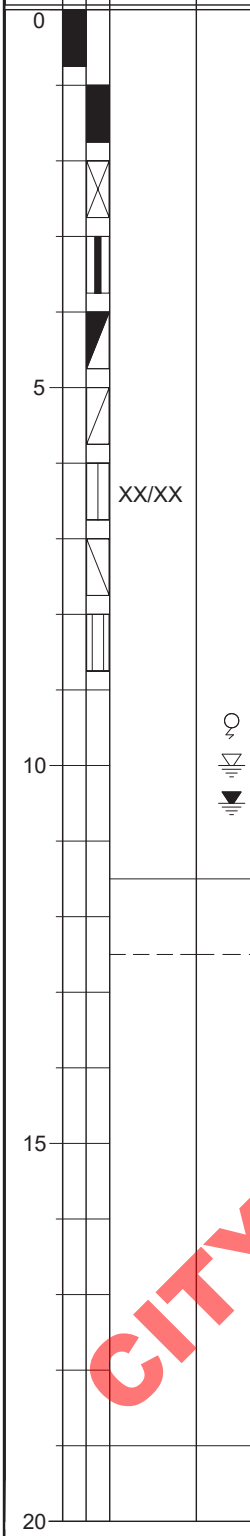
Field Procedure for the Collection of Relatively Undisturbed Samples

Relatively undisturbed soil samples were obtained in the field using the following method.

The Modified Split-Barrel Drive Sampler

The sampler, with an external diameter of 3.0 inches, was lined with 6-inch long, thin brass liners with inside diameters of approximately 2.4 inches. The sample barrel was driven into the ground with the weight of a hammer in general accordance with ASTM D 3550. The driving weight was permitted to fall freely. The approximate length of the fall, the weight of the hammer, and the number of blows per foot of driving are presented on the boring log as an index to the relative resistance of the materials sampled. The samples were removed from the sample barrel in the brass liners, sealed, and transported to the laboratory for testing.

BORING LOG EXPLANATION SHEET



Bulk sample.

Modified split-barrel drive sampler.

No recovery with modified split-barrel drive sampler.

Sample retained by others.

Standard Penetration Test (SPT).

No recovery with a SPT.

Shelby tube sample. Distance pushed in inches/length of sample recovered in inches.

No recovery with Shelby tube sampler.

Continuous Push Sample.

Seepage.

Groundwater encountered during drilling.

Groundwater measured after drilling.

SM

MAJOR MATERIAL TYPE (SOIL):

Solid line denotes unit change.

CL

Dashed line denotes material change.

Attitudes: Strike/Dip
b: Bedding
c: Contact
j: Joint
f: Fracture
F: Fault
cs: Clay Seam
s: Shear
bss: Basal Slide Surface
sf: Shear Fracture
sz: Shear Zone
sbs: Shear Bedding Surface

The total depth line is a solid line that is drawn at the bottom of the boring.

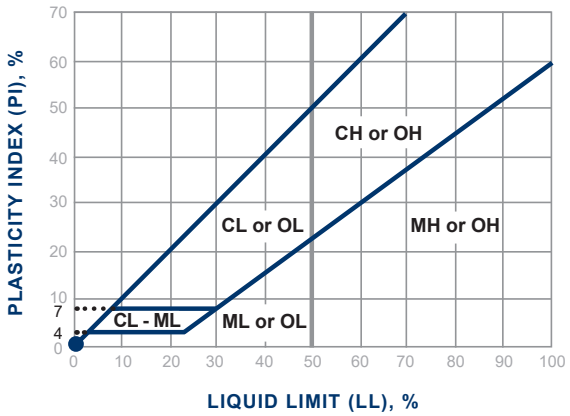
Soil Classification Chart Per ASTM D 2488

Primary Divisions			Secondary Divisions	
			Group Symbol	Group Name
COARSE-GRAINED SOILS more than 50% retained on No. 200 sieve	**GRAVEL** more than 50% of coarse fraction retained on No. 4 sieve	CLEAN GRAVEL less than 5% fines	GW	well-graded GRAVEL
			GP	poorly graded GRAVEL
		GRAVEL with DUAL CLASSIFICATIONS 5% to 12% fines	GW-GM	well-graded GRAVEL with silt
			GP-GM	poorly graded GRAVEL with silt
			GW-GC	well-graded GRAVEL with clay
			GP-GC	poorly graded GRAVEL with
		GRAVEL with FINES more than 12% fines	GM	silty GRAVEL
			GC	clayey GRAVEL
			GC-GM	silty, clayey GRAVEL
	SAND 50% or more of coarse fraction passes No. 4 sieve	CLEAN SAND less than 5% fines	SW	well-graded SAND
			SP	poorly graded SAND
		SAND with DUAL CLASSIFICATIONS 5% to 12% fines	SW-SM	well-graded SAND with silt
			SP-SM	poorly graded SAND with silt
			SW-SC	well-graded SAND with clay
			SP-SC	poorly graded SAND with clay
		SAND with FINES more than 12% fines	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOILS 50% or more passes No. 200 sieve	**SILT and CLAY** liquid limit less than 50%	INORGANIC	CL	lean CLAY
			ML	SILT
			CL-ML	silty CLAY
		ORGANIC	OL (PI > 4)	organic CLAY
			OL (PI < 4)	organic SILT
	SILT and CLAY liquid limit 50% or more	INORGANIC	CH	fat CLAY
			MH	elastic SILT
		ORGANIC	OH (plots on or above "A"-line)	organic CLAY
			OH (plots below "A"-line)	organic SILT
	Highly Organic Soils		PT	Peat

Grain Size

Description		Sieve Size	Grain Size	Approximate Size
Boulders		> 12"	> 12"	Larger than basketball-sized
Cobbles		3 - 12"	3 - 12"	Fist-sized to basketball-sized
Gravel	Coarse	3/4 - 3"	3/4 - 3"	Thumb-sized to fist-sized
	Fine	#4 - 3/4"	0.19 - 0.75"	Pea-sized to thumb-sized
Sand	Coarse	#10 - #4	0.079 - 0.19"	Rock-salt-sized to pea-sized
	Medium	#40 - #10	0.017 - 0.079"	Sugar-sized to rock-salt-sized
	Fine	#200 - #40	0.0029 - 0.017"	Flour-sized to sugar-sized
Fines		Passing #200	< 0.0029"	Flour-sized and smaller

Plasticity Chart



Apparent Density - Coarse-Grained Soil

Apparent Density	Spooling Cable or Cathead		Automatic Trip Hammer	
	SPT (blows/foot)	Modified Split Barrel (blows/foot)	SPT (blows/foot)	Modified Split Barrel (blows/foot)
Very Loose	≤ 4	≤ 8	≤ 3	≤ 5
Loose	5 - 10	9 - 21	4 - 7	6 - 14
Medium Dense	11 - 30	22 - 63	8 - 20	15 - 42
Dense	31 - 50	64 - 105	21 - 33	43 - 70
Very Dense	> 50	> 105	> 33	> 70

Consistency - Fine-Grained Soil

Consis-tency	Spooling Cable or Cathead		Automatic Trip Hammer	
	SPT (blows/foot)	Modified Split Barrel (blows/foot)	SPT (blows/foot)	Modified Split Barrel (blows/foot)
Very Soft	< 2	< 3	< 1	< 2
Soft	2 - 4	3 - 5	1 - 3	2 - 3
Firm	5 - 8	6 - 10	4 - 5	4 - 6
Stiff	9 - 15	11 - 20	6 - 10	7 - 13
Very Stiff	16 - 30	21 - 39	11 - 20	14 - 26
Hard	> 30	> 39	> 20	> 26

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

USCS METHOD OF SOIL CLASSIFICATION

DATE DRILLED 2/25/22 BORING NO. B-1

GROUND ELEVATION 32' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 4" SSA, B-24 Truck Mounted Drill Rig (Cal Geo.)

DRIVE WEIGHT 140 lbs (cathead) DROP 30 inches

SAMPLED BY JW LOGGED BY JW REVIEWED BY RPM/DCS/RH

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							CL	ALLUVIUM: Dark brown, moist, stiff, lean CLAY; trace sand; trace roots.
			17	17.8	105.4			
5			18					Reddish brown; few to little sand.
			17	16.1	113.1			Brown, moist, stiff, sandy lean CLAY.
10								
			9					Wet.
15								Total Depth = 15 feet. Backfilled with cement grout on 2/25/2022. Notes: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents (City of Fremont, 2022).
20								

FIGURE A- 1

DATE DRILLED 2/25/22 BORING NO. B-2

GROUND ELEVATION 32' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 4" SSA, B-24 Truck Mounted Drill Rig (Cal Geo.)

DRIVE WEIGHT 140 lbs (cathead) DROP 30 inches

SAMPLED BY JW LOGGED BY JW REVIEWED BY RPM/DCS/RH

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							CL	ALLUVIUM: Reddish brown, moist, stiff, lean CLAY; trace sand; trace roots.
			19	17.9	108.7			
5			18	12.4	113.1			Brown, moist, stiff, sandy lean CLAY.
			15	16.2	112.9			
10								
			11					Wet.
15								Total Depth = 15 feet. Backfilled with cement grout on 2/25/2022. Notes: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents (City of Fremont, 2022).
20								

FIGURE A- 2

APPENDIX B

Laboratory Testing

APPENDIX B

LABORATORY TESTING

Classification
Soils were visually and texturally classified in accordance with the Unified Soil Classification System (USCS) in accordance with ASTM D 2488. Soil classifications are indicated on the logs of the exploratory borings in Appendix A.

In-Place Moisture and Density
The moisture content and dry density of relatively undisturbed samples obtained from the exploratory borings were evaluated in accordance with ASTM D 2937. The test results are presented on the logs of the exploratory borings in Appendix A.

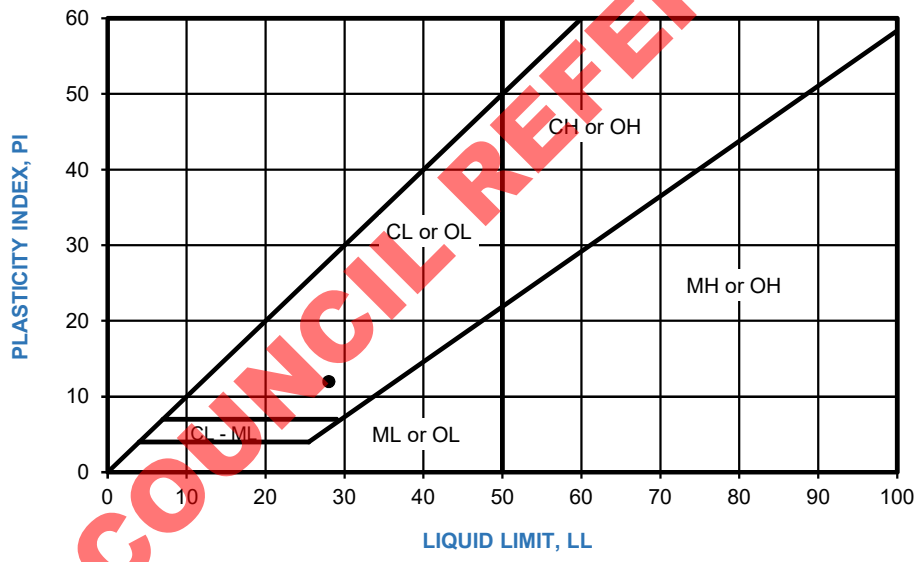
Atterberg Limits
Tests were performed on selected representative fine-grained soil samples to evaluate the liquid limit, plastic limit, and plasticity index in accordance with ASTM D 4318. These test results were used to evaluate the soil classification in accordance with the USCS. The test results and classifications are shown on Figure B-1.

Expansion Index
The expansion index of a selected material was evaluated in accordance with ASTM D 4829. The specimen was molded under a specified compactive energy at approximately 50 percent saturation (plus or minus 1 percent). The prepared 1 inch thick by 4 inch diameter specimen was loaded with a surcharge of 144 pounds per square foot and inundated with tap water. Readings of volumetric swell were made for a period of 24 hours. The test results are presented on Figure B-2.

Unconfined Compression Test
Unconfined compression tests were performed on relatively undisturbed samples in accordance with ASTM D 2166. The test results are shown on Figure B-3.

R-Value
The resistance value, or R-value, for subgrade soils was evaluated in accordance with ASTM D 2844. Samples were prepared and evaluated for exudation pressure and expansion pressure. The equilibrium R-value is reported as the lesser or more conservative of the two calculated results. The test results are shown on Figure B-4.

SYMBOL	LOCATION	DEPTH (ft)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	USCS CLASSIFICATION (Fraction Finer Than No. 40 Sieve)	USCS
●	B-1	3.5-4.0	28	16	12	CL	CL



PERFORMED IN ACCORDANCE WITH ASTM D 4318

FIGURE B-1

ATTERBERG LIMITS TEST RESULTS

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

RIX PARK BASKETBALL COURT
FREMONT, CALIFORNIA
404198001 | 03/2022

SAMPLE LOCATION	SAMPLE DEPTH (ft)	INITIAL MOISTURE (percent)	COMPACTED DRY DENSITY (pcf)	FINAL MOISTURE (percent)	VOLUMETRIC SWELL (in)	EXPANSION INDEX	POTENTIAL EXPANSION
B-1	0.0-5.0	11.2	106.2	24.2	0.067	67	Medium

PERFORMED IN ACCORDANCE WITH ASTM D 4829

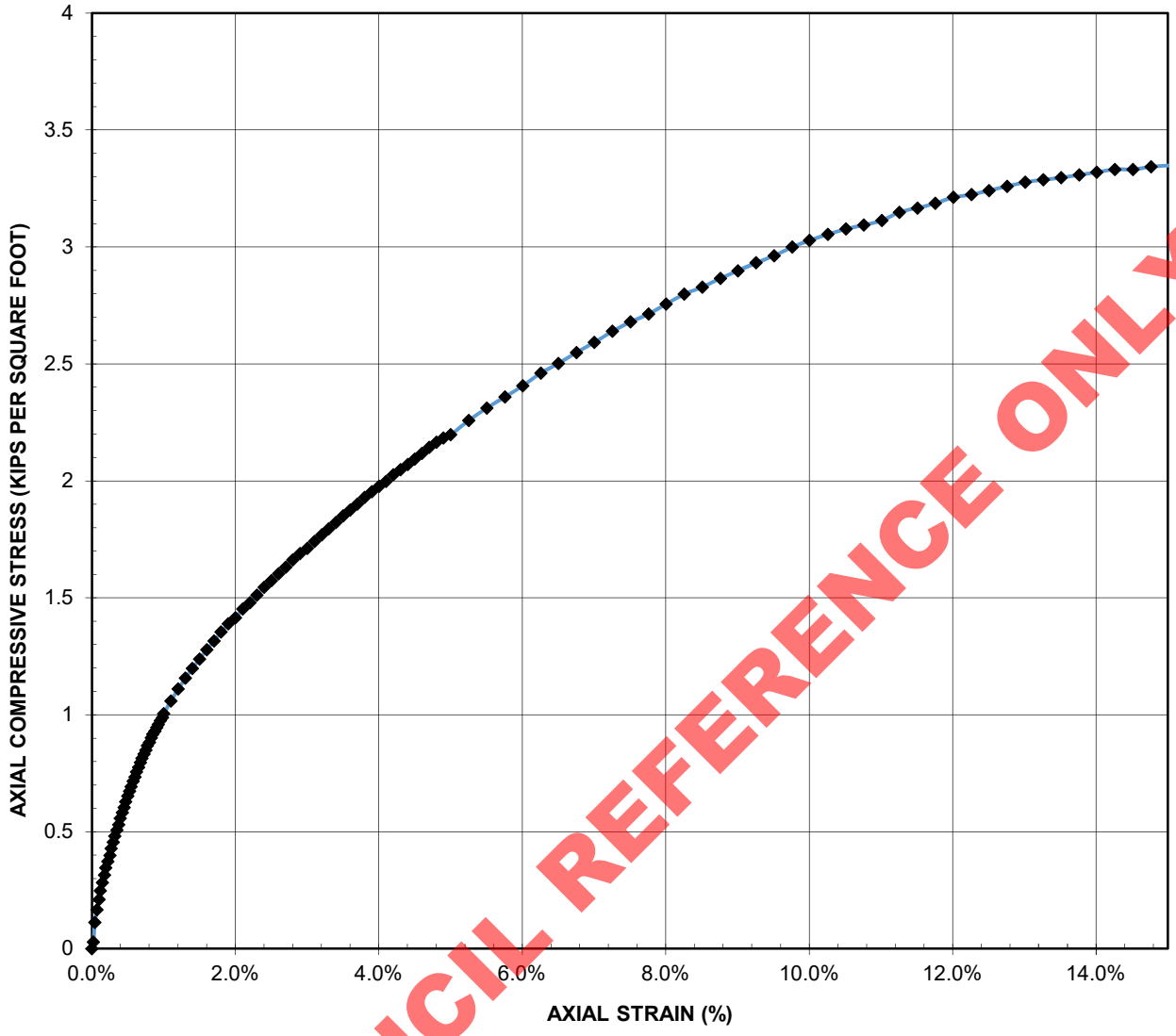
FIGURE B-2

EXPANSION INDEX TEST RESULTS

RIX PARK BASKETBALL COURT
FREMONT, CALIFORNIA

404198001 | 03/2022

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants



SYMBOL	DESCRIPTION	SOIL TYPE	SAMPLE LOCATION	SAMPLE DEPTH (ft.)	MOISTURE CONTENT w, (%)	DRY DENSITY γ_d, (pcf)	STRAIN RATE (%/min.)	UNDRAINED SHEAR STR s_u, (ksf)
◆	Lean CLAY	CL	B-2	3.5-4.0	17.9	108.7	1.00	1.67

PERFORMED IN ACCORDANCE WITH ASTM D 2166

FIGURE B-3

UNCONFINED COMPRESSION TEST RESULTS

RIX PARK BASKETBALL COURT
FREMONT, CALIFORNIA

404198001 | 03/2022

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

SAMPLE LOCATION	SAMPLE DEPTH (ft)	SOIL TYPE	R-VALUE
B-1	0.0-5.0	Lean CLAY	11.0

PERFORMED IN ACCORDANCE WITH ASTM D 2844/CT 301

APPENDIX C

Corrosivity Testing (CERCO Analytical)

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

Client: Ninyo & Moore
Client's Project No.: 404198001
Client's Project Name: Rix Park - 4910 Seneca Park Loop, Fremont, CA
Date Sampled: 25-Feb-22
Date Received: 10-Mar-22
Matrix: Soil
Authorization: Signed Chain of Custody

Date of Report: 24-Mar-2022

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Conductivity (umhos/cm)*	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
2203047-001	B-1/0.0-5.0'	300	8.64	-	1,700	-	50	15

Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Reporting Limit:	-	-	10	-	50	15	15
Date Analyzed:	23-Mar-2022	23-Mar-2022	-	24-Mar-2022	-	22-Mar-2022	22-Mar-2022

Sherri Moore
Chemist

* Results Reported on "As Received" Basis
N.D. - None Detected

Quality Control Summary - All laboratory quality control parameters were found to be within established limits

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

24 March, 2022

Job No. 2203047
Cust. No.13270

Mr. Rathna Mothkuri
Ninyo & Moore
2149 O'Toole Avenue, Suite 30
San Jose, CA 95131

Subject: Project No.: 404198001
Project Name: Rix Park – 4910 Seneca Park Loop, Fremont, CA
Corrosivity Analysis – ASTM Test Methods

Dear Mr. Mothkuri:

Pursuant to your request, CERCO Analytical has analyzed the soil sample submitted on March 10, 2022. Based on the analytical results, this brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurement, this sample is classified as "moderately corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentration is 50 mg/kg. Because the chloride ion concentration is less than 300 mg/kg, it is determined to be insufficient to attack steel embedded in a concrete mortar coating.

The sulfate ion concentration is 15 mg/kg and is determined to be insufficient to damage reinforced concrete structures and cement mortar-coated steel at this location.

The pH of the soil is 8.64, which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potential is 300-mV, which is indicative of potentially "slightly corrosive" soils resulting from anaerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call *JDH Corrosion Consultants, Inc. at (925) 927-6630.*

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.

J. Darby Howard, Jr., P.E.
President

JDH/jdl
Enclosure

2149 O'Toole Avenue, Suite 30 | San Jose, California 95131 | p. 408.435.9000

ARIZONA | CALIFORNIA | COLORADO | NEVADA | TEXAS | UTAH

www.ninyoandmoore.com

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

APPENDIX E

SOIL SAMPLING RESULT

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2300 Clayton Rd., Suite 610
Concord, CA 94520
T 925.688.1200
TRCcompanies.com

May 26, 2022

Job Number: 491274.0000

Ms. Jennie Suen
Senior Landscape Architect
City of Fremont
3300 Capital Avenue, Building B
Fremont, California 94538

Reference: Soil Sampling Results
Rix Park Basketball Court Installation Project
Fremont, California

Dear Ms. Suen:

TRC Solutions, Inc. (TRC) has prepared this letter for the City of Fremont (City) to summarize results of the soil sampling performed for the City of Fremont's (City) Rix Park Basketball Court Installation Project in Fremont, California (Site). The Project consists of replacing the existing onsite basketball court with a new court and accompanying pathways. The new basketball court will be an estimated 8,065 square feet (sf) and the two pathways to the court are estimated at 584 sf. Construction for the court will require excavation and removal of soil to a depth of 12 inches below ground surface (bgs).

The City requested TRC to sample the soil within the footprint of the basketball court to determine the re-use of the soil. The City is planning to re-use the soil depending upon the results of the testing and would prefer not to transport to a disposal facility. TRC performed the sampling on April 26, 2022.

Investigation Activities

TRC mobilized to the Site on April 26, 2022 to collect soil samples from the footprint of the proposed court. Based on the discussions with the City and the layout of the layout of the court, it was determined that construction for the court would require excavation and removal of soil to a depth of 12 inches below ground surface (bgs) and that soil sampling at 4 locations within the footprint of the proposed court to a maximum depth of 12 inches would be sufficient to characterize the soil.

Soil samples were collected using a hand auger and were extracted from the hand auger barrel by hand using disposable gloves and placed directly into laboratory-supplied glassware. Each sample container was labeled with the project number, date, time, and sample number. Sample containers were placed in a chilled cooler immediately after sampling, and subsequently transported to Pace Analytical Environmental Sciences, a California Environmental Laboratory Accreditation (ELAP) certified laboratory under strict chain-of-custody procedures.

The hand sampling equipment was cleaned using a non-phosphate soap wash and distilled water rinse prior to the beginning of the project and cleaned using a distilled water rinse before each soil sample.

Soil Conditions

Based on TRC's observations during the sampling event; soils were noted as silty clay. TRC observed no staining, discoloration, or odors indicative of contamination of the soil sampled during this investigation.

Analytical Results

To meet landfill disposal criteria, all of the soil samples were analyzed for the following compounds:

- California Assessment Metals (CAM 17/Title 22) using EPA Method 6010B and 7471A
- Organochlorine Pesticides using EPA Method 8081A
- Total petroleum hydrocarbons (TPH) as gasoline using EPA Method 8260B and diesel and motor oil using EPA Method 8015B
- Volatile organic compound (VOCs) using EPA Method 8260

Analytical results were compared to respective Total Threshold Limit Concentrations (TTLCs) and the San Francisco Bay Regional Water Quality Control Board (Water Board) Environmental Screening Levels (ESLs), updated January 2019 (Water Board, 2019) for direct exposure human health risk levels (HHRLs) for residential and commercial land use.

Analyses detected no chemicals exceeding respective TTLC or ESL criteria. Results of analyses are presented in Table 1 and the laboratory reports are included in Appendix A. The following discussion details the results of analyses.

- Organochlorine pesticides compounds 4,4'-DDD, 4,4'-DDE, 4,4'-DDT and dieldrin were detected above laboratory RLs in all samples. None of the results exceeded TTLCs or residential ESLs.
- Diesel range organics (DRO) were detected in all samples at concentrations ranging between 2.1 and 2.5 milligrams per kilogram (mg/kg) and were all below the residential ESL of 260 mg/kg. The lab noted that chromatograms for the detections were not typical of diesel.
- Motor oil range organics (MORO) were detected in all samples at concentrations ranging between 8.6 and 14 mg/kg and were all below the residential ESL of 12,000 mg/kg. The lab noted that chromatograms for the detections were not typical of motor oil
- Selected metals were detected above laboratory RLs in all of the collected samples. All detections were below TTLCs and residential or commercial ESLs.
- TPH-Gasoline and VOCs were not detected above laboratory RLs in any of the soil samples analyzed.

Conclusions

Based on the laboratory analytical results, TRC concludes that multiple compounds were detected above laboratory reporting limits (RLs) in most of the collected samples and based on the similarity

of the results are representative of the sampled soil at the Site. Based on the results of the sampling, the sampled soil is non-hazardous and suitable for re-use at the Site or disposal at a Class II or III disposal facility subject to their acceptance criteria.

Closing Statement

If you have any questions regarding this letter, please do not hesitate to call Mr. Lieberman at (707) 888-1683.

Very truly yours,

TRC SOLUTIONS, INC.

Gary A. Lieberman, CEM
Senior Project Manager

Glenn Young, PG
Principal Geologist

References:

San Francisco Bay Regional Water Quality Control Board (RWQCB) Direct Exposure Human Health Risk Cancer Risk and Non-cancer Hazard Environmental Screening Levels (ESLs; 2019 Rev. 2)

Attachments: Table 1 – Soil Analytical Results

Figure 1 – Soil Sample Locations

Appendix A – Laboratory Analytical Reports and Chain of Custody Forms

TABLE

Table 1 - Results of Soil Analyses
Rix Park Soil Sampling
Rix Park
Fremont, California

Analyte	Sample ID				Soil Screening Levels	RWQCB ESLs[c]		
	HA-1	HA-2	HA-3	HA-4	TTLCs[a]	Res	Comm	Const
	4/26/22	4/26/22	4/26/22	4/26/22				
Volatile Organic Compounds (VOCs; EPA 8260B) All values reported in mg/kg								
All VOCs	**ND**	**ND**	**ND**	**ND**	NE	NE	NE	NE
Total Petroleum Hydrocarbons All values reported in mg/kg								
TPH -Gasoline (total [purgeable hydrocarbons)	**2.4 A52**	**2.1 A52**	**2.1 A52**	**2.5 A52**	NE	430	2000	1,800
TPH- Diesel (FFP)	**2.4 A52**	**2.1 A52**	**2.1 A52**	**2.5 A52**	NE	260	1,200	1,100
TPH - Motor Oil	**14 A57**	**8.6 A57**	**8.9 A57**	**13 A57**	NE	12,000	180,000	54,000
Organochlorine Pesticides (EPA 8081A) All values reported in mg/kg.								
4,4'-DDD	0.00027J	<0.0010	0.00018J	**0.00051**	1.0	2.7	12	81
4,4'-DDE	**0.00061**	**0.0023**	**0.0021**	**0.00083**	1.0	1.8	8.3	57
4,4'-DDT	0.00044J	0.00081J	0.00026J	0.00043J	1.0	1.9	8.5	57
Dieldrin	0.0036 J	<0.0010	<0.00050	<0.00050	8.0	0.037	0.16	1.1
Metals (6010B) All values reported in mg/kg								
Antimony	1.4J	1.4J	1.6J	1.6J	500	11	160	50
Arsenic	**3.8**	**5.4**	**4.1**	**4.0**	500	0.067	0.31	0.98
Barium	**120**	**130**	**120**	**140**	10,000	15,000	220,000	3,000
Beryllium	0.22J	0.25J	0.22J	0.26J	75	16	230	27
Cadmium	0.35J	0.38J	0.41J	0.41J	100	78	1,100	51
Chromium	**44 S11**	**48 S11**	**50 S11**	**50 S11**	2,500	120,000	1,800,000	530,000
Cobalt	**9.1**	**10**	**11**	**9.6**	8,000	23	350	28
Copper	**18**	**21**	**24**	**21**	2,500	3,100	47,000	14,000
Lead	**7.60**	**9.3**	**7.5**	**12**	1,000	80	320	160
Molybdenum	<2.5	<2.5	<2.5	<2.5	3,500	390	5,800	1,800
Nickel	**49**	**53**	**51**	**55**	2,000	820	11,000	86
Selenium	<1.0	<1.0	<1.0	<1.0	100	390	5,800	1,700
Silver	0.30J	0.27J	0.30J	**0.33**	500	390	5,800	1,800
Thallium	<5.0	<5.0	<5.0	<5.0	700	0.78	12	3.5
Vanadium	**25**	**30**	**33**	**28**	2,400	390	5,800	470
Zinc	**35**	**38**	**38**	**44**	5,000	23,000	350,000	110,000
Metals (7471A) All values reported in mg/kg.								
Mercury	**0.051**	0.13J	**0.057**	**0.065**	NE	13	190	44

Notes:

Bold indicates detection or estimated detection at or above laboratory reporting limits.
Orange Highlight indicates analyte concentration exceeds RWQCB Residential ESL.
Grey Highlight indicates analyte concentration exceeds RWQCB Construction ESL.
Blue Highlight indicated analyte concentration exceeds RWQCB Residential, Commercial, and Construction ESL.

1. If the TTLC result is equal to or greater than the TTLC limit, then the waste is a California (non-RCRA) hazardous waste (however, TCLP would still be required for th
2. The STLC is required if the TTLC result equals or exceeds STLC by a factor of 10 or more (DTSC STLC Trigger Level). If the STLC result is equal to or greater than t
   however, TCLP would still be required for the eight federally regulated metals – see note 4).
3. The TCLP is required for federal hazardous waste characterization (the eight federally regulated metals) if the TTLC result equals or exceeds the TCLP threshold by a
4. If the TCLP sample fails, then the waste would be considered a federal (RCRA) hazardous waste.
5. Chromium on the California list accounts for trivalent and other forms of chromium. Hexavalent chromium is the more toxic of the two forms of chromium.
6. Detected arsenic concentrations exceed listed soil screening levels, but are consistent with the Bay Area background concentration of 11 mg/kg and are, therefore, n
7. Where both Cancer Risk and Non-cancer Hazard RWQCB ESLs are established for a given analyte, the more conservative value is displayed.

Abbreviations:
TTLC = Total Threshold Limit Concentrations as published in 22 CCR § 66261.24
RCRA = Resource Conservation Recovery Act
Res = Residential Shallow Soil Exposure Screening Level
Comm = Commercial/ Industrial Shallow Soil Exposure Screening Level
Const = Construction Worker Soil Exposure Screening Level
< = not detected at or above specified laboratory reporting limit
-- = not analyzed
mg/kg = milligrams per kilogram
^ = Not detected except for analytes listed below
S11 = The analyte in the Method Blank is greater than the Laboratory PQL but the sample result is greater than 10 times the Method Blank.
PQL = Practical Quantitation Limit
F1 = MS and/or MSD recovery exceeds control limits; sample matrix interference and/or non-homogeneity are suspected
A 52 = Chromatogram not typical of diesel
A 57 Chromatogram not typical of motor oil
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an estimated value
NA = Not applicable
ND = Not detected
NE = Not established

Footnotes:
a) California Code of Regulations, Title 22, Chapter 11, Article 3 Department of Toxic Substances Control (DTSC) Hazardous Waste Criteria
b) United States Environmental Protection (US EPA) Agency Resource Conservation and Recovery Act (RCRA) Hazardous Waste Criteria
c) San Francisco Bay Regional Water Quality Control Board (RWQCB) Direct Exposure Human Health Risk Cancer Risk and Non-cancer Hazard Environmental Screen

FIGURE

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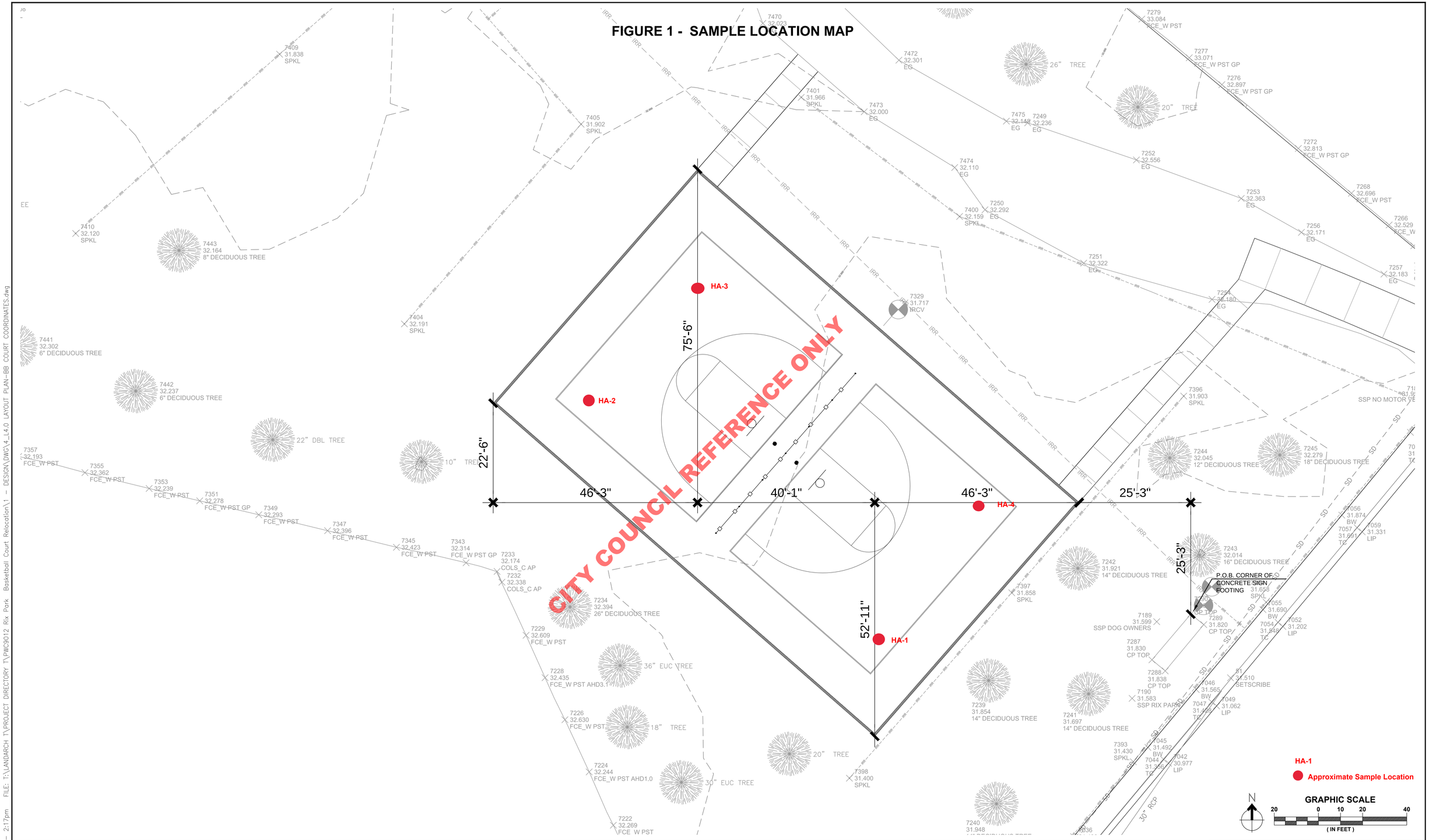
FIGURE 1 - SAMPLE LOCATION MAP



No.	DATE	REVISION	BY	APPD
1	04.19.2022	75% CD REVIEW SET		

LICENSED LANDSCAPE ARCHITECT ROGER E. RAVENSTAD No. 3509 Signature Date STATE OF CALIFORNIA

CITY OF Fremont

APPROVED -- SENIOR LANDSCAPE ARCHITECT | DATE 0X.XX.2022 | RECOMMENDED -- PROJECT MANAGER | DATE 0X.XX.2022

RIX PARK BASKETBALL COURT

COURT LAYOUT - CORNER COORDINATES

COMMUNITY SERVICES DEPARTMENT
LANDSCAPE ARCHITECTURE

CITY PROJECT: PWC9012

DESIGNED BY: JS | CHECKED BY: MM

DRAWN BY: JS | DATE: 0X/2022

SCALE: AS SHOWN

0 1"

NOTE: VERIFY SCALE. BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES ACCORDINGLY IF BAR IS NOT ONE INCH.

DRAWING: **L4.0**

SHEET 7 OF 9

PLOT DATE: Apr 19, 2022 - 2:17pm FILE: T:\LANDARCH T\PROJECT DIRECTORY T\PWC9012 Rix Park Basketball Court Relocation\1 - DESIGN\DWG\4_L4.0 LAYOUT PLAN-BB COURT COORDINATES.dwg

APPENDIX A
LABORATORY REPORTS AND CHAIN OF CUSTODY

Pace Analytical
ENVIRONMENTAL SCIENCES

Date of Report: 05/10/2022

Gary Lieberman

TRC
1850 Gateway Blvd, Suite 1000
Concord, CA 94520

Client Project:	491274.000001
BCL Project:	Rix Park
BCL Work Order:	2209966
Invoice ID:	B448517

Enclosed are the results of analyses for samples received by the laboratory on 4/26/2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Molly Meyers

Contact Person: Molly Meyers
Client Service Rep

Stuart Buttram
Operations Manager

Table of Contents

Chain of Custody and Cooler Receipt Form for 2209966 Page 1 of 2

Pace® ANALYTICAL SERVICES

Chain of Custody Form

4100 Atlas Ct. – Bakersfield, CA 93308 – 661.327.4911 – Fax: 661.327.1918 – www.pacelabs.com

Page 1 of 1

Report To:
Client: TRC
Attn: Gary Lieberman
Street Address: 1950 Gateway Blvd, St. 100
City, State, Zip: Concord, CA 94520
Phone: 707-588-1683 Fax:
Email: glieberman@trccompanies.com
Work Order #: 22-09966

Project #: 491274.000001
Project Name: Rix Park
BID#:
Sampler(s) Name Printed: James Chidester

Comments:

Sample #	Description	Date Sampled	Time Sampled	Title 22 Metals by 6010/7000	VOCs by 8260B	TPHd + TPHmo by 8015B	TPHg by 8260B	OC Pesticides by 8081	Soil	Sludge	Drinking Water	Ground Water	Waste Water	Other (# Jars)	Notes
-1	HA-1	04/26/22	1105	X	X	X	X	X	X					2	
-2	HA-2	04/26/22	1116	X	X	X	X	X	X					2	
-3	HA-3	04/26/22	1129	X	X	X	X	X	X					2	
-4	HA-4	04/26/22	1140	X	X	X	X	X	X					2	

Result Request **Surcharge
☒ STD (10 Day) ☐ 5 Day** ☐ 4 Day**
☐ 3 Day** ☐ 2 Day** ☐ 1 Day**
Rush requests must be approved

CHK BY: JXO
DISTRIBUTION: RTI/jackson ☐
SUB OUT ☐

Billing ☑ Same as above
Client: TRC
Address:
City: State Zip
Attn: AP Invoice approval
P.O. #: 181361

System # (Needed for CUF)
GISKey ☐ Well Star ☐

EDF Required Geotracker ☐ Yes ☐ No Global ID

	Date	Time		Date	Time
1. Relinquished By: [signature]	04/26/22	1303	1. Received By: Harry Bogan	4-26-22	1308
2. Relinquished By: Harry Bogan	4-26-22	1830	2. Received By: [signature]	4-26-22	18:30
3. Relinquished By: [signature]	4-26-22	2210	3. Received By: Zoric [signature]	4/26/22	2210

Pace Analytical Bakersfield does not accept samples containing radioactive material above background levels. Samples containing radioactive material must be disclosed prior to receipt. Any samples suspected of containing radioactive material above background levels will not be accepted and will be returned to client.

REV 12/2021

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 22-099166

SHIPPING INFORMATION
Fed Ex ☐ UPS ☐ GSO / GLS ☐ Hand Delivery ☐
BC Lab Field Service ☑ Other ☐ (Specify)_____

SHIPPING CONTAINER
Ice Chest ☑ None ☐ Box ☐
Other ☐ (Specify)_____

FREE LIQUID
YES ☑ NO ☐
(W) / S

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.97 Container: Glass Thermometer ID: 274 Date/Time 4/26/22 2210

Temperature: (A) 2.3 °C / (C) 2.3 °C Analyst Init PRE

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664B										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608.3/8081A										
QT EPA 515.1/8151A										
QT EPA 525.2										
QT EPA 525.2 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548.1										
QT EPA 549.2										
QT EPA 8015M										
QT EPA 8270C										
8oz / 16oz / 32oz AMBER										
8oz (16oz / 32oz JAR	A,B	A,B	A,B	A,B						
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: PRE Date/Time: 4/28/22 2135

A = Actual / C = Corrected

Rev 22 04/13/21

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2209966-01	**COC Number:**	---	**Receive Date:**	04/26/2022 22:10
	Project Number:	---	**Sampling Date:**	04/26/2022 11:05
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA-1	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2209966-02	**COC Number:**	---	**Receive Date:**	04/26/2022 22:10
	Project Number:	---	**Sampling Date:**	04/26/2022 11:16
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA-2	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2209966-03	**COC Number:**	---	**Receive Date:**	04/26/2022 22:10
	Project Number:	---	**Sampling Date:**	04/26/2022 11:29
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA-3	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2209966-04	**COC Number:**	---	**Receive Date:**	04/26/2022 22:10
	Project Number:	---	**Sampling Date:**	04/26/2022 11:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA-4	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 2209966-01 | **Client Sample Name:** HA-1, 4/26/2022 11:05:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Aldrin	ND	mg/kg	0.00050	0.000018	EPA-8081A	ND		1
alpha-BHC	ND	mg/kg	0.00050	0.000038	EPA-8081A	ND		1
beta-BHC	ND	mg/kg	0.00050	0.000048	EPA-8081A	ND		1
delta-BHC	ND	mg/kg	0.00050	0.000037	EPA-8081A	ND		1
gamma-BHC (Lindane)	ND	mg/kg	0.00050	0.000018	EPA-8081A	ND		1
Chlordane (Technical)	ND	mg/kg	0.050	0.0010	EPA-8081A	ND		1
4,4'-DDD	**0.00027**	**mg/kg**	**0.00050**	**0.000064**	**EPA-8081A**	ND	**J**	1
4,4'-DDE	**0.00061**	**mg/kg**	**0.00050**	**0.000095**	**EPA-8081A**	ND		1
4,4'-DDT	**0.00044**	**mg/kg**	**0.00050**	**0.000040**	**EPA-8081A**	ND	**J**	1
Dieldrin	ND	mg/kg	0.00050	0.000036	EPA-8081A	ND		1
Endosulfan I	ND	mg/kg	0.00050	0.000020	EPA-8081A	ND		1
Endosulfan II	ND	mg/kg	0.00050	0.000034	EPA-8081A	ND		1
Endosulfan sulfate	ND	mg/kg	0.00050	0.000026	EPA-8081A	ND		1
Endrin	ND	mg/kg	0.00050	0.000065	EPA-8081A	ND		1
Endrin aldehyde	ND	mg/kg	0.00050	0.000018	EPA-8081A	ND		1
Heptachlor	ND	mg/kg	0.00050	0.000086	EPA-8081A	ND		1
Heptachlor epoxide	ND	mg/kg	0.00050	0.000017	EPA-8081A	ND		1
Methoxychlor	ND	mg/kg	0.00050	0.000094	EPA-8081A	ND		1
Toxaphene	ND	mg/kg	0.050	0.0014	EPA-8081A	ND		1
TCMX (Surrogate)	71.5	%	20 - 130 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	64.1	%	40 - 130 (LCL - UCL)		EPA-8081A			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8081A	05/04/22 16:30	05/05/22 16:34	HKS	GC-17	1.014	B139062	EPA 3550B

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 2209966-01 | **Client Sample Name:** HA-1, 4/26/2022 11:05:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
Bromobenzene	ND	mg/kg	0.0050	0.00087	EPA-8260B	ND		1
Bromochloromethane	ND	mg/kg	0.0050	0.00081	EPA-8260B	ND		1
Bromodichloromethane	ND	mg/kg	0.0050	0.00078	EPA-8260B	ND		1
Bromoform	ND	mg/kg	0.0050	0.00070	EPA-8260B	ND		1
Bromomethane	ND	mg/kg	0.0050	0.0017	EPA-8260B	ND		1
n-Butylbenzene	ND	mg/kg	0.0050	0.00076	EPA-8260B	ND		1
sec-Butylbenzene	ND	mg/kg	0.0050	0.00071	EPA-8260B	ND		1
tert-Butylbenzene	ND	mg/kg	0.0050	0.00085	EPA-8260B	ND		1
Carbon tetrachloride	ND	mg/kg	0.0050	0.00078	EPA-8260B	ND		1
Chlorobenzene	ND	mg/kg	0.0050	0.00077	EPA-8260B	ND		1
Chloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
Chloroform	ND	mg/kg	0.0050	0.00090	EPA-8260B	ND		1
Chloromethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
2-Chlorotoluene	ND	mg/kg	0.0050	0.00087	EPA-8260B	ND		1
4-Chlorotoluene	ND	mg/kg	0.0050	0.00070	EPA-8260B	ND		1
Dibromochloromethane	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0050	0.00096	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.00082	EPA-8260B	ND		1
Dibromomethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	mg/kg	0.0050	0.00079	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	mg/kg	0.0050	0.00073	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	mg/kg	0.0050	0.00073	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	mg/kg	0.0050	0.00079	EPA-8260B	ND		1
1,1-Dichloroethane	ND	mg/kg	0.0050	0.00064	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00073	EPA-8260B	ND		1
1,1-Dichloroethene	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	mg/kg	0.0050	0.00054	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0037	EPA-8260B	ND		1
Total 1,2-Dichloroethene	ND	mg/kg	0.010	0.0043	EPA-8260B	ND		1
1,2-Dichloropropane	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
1,3-Dichloropropane	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
2,2-Dichloropropane	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 2209966-01 | **Client Sample Name:** HA-1, 4/26/2022 11:05:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
1,1-Dichloropropene	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
cis-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00058	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00066	EPA-8260B	ND		1
Total 1,3-Dichloropropene	ND	mg/kg	0.010	0.0013	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.00069	EPA-8260B	ND		1
Hexachlorobutadiene	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
Isopropylbenzene	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
p-Isopropyltoluene	ND	mg/kg	0.0050	0.00059	EPA-8260B	ND		1
Methylene chloride	ND	mg/kg	0.010	0.0011	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0050	0.00056	EPA-8260B	ND		1
Naphthalene	ND	mg/kg	0.0050	0.00099	EPA-8260B	ND		1
n-Propylbenzene	ND	mg/kg	0.0050	0.00071	EPA-8260B	ND		1
Styrene	ND	mg/kg	0.0050	0.00062	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00095	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00084	EPA-8260B	ND		1
Tetrachloroethene	ND	mg/kg	0.0050	0.00097	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0050	0.00069	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	mg/kg	0.0050	0.00094	EPA-8260B	ND		1
Trichloroethene	ND	mg/kg	0.0050	0.00074	EPA-8260B	ND		1
Trichlorofluoromethane	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	mg/kg	0.0050	0.0019	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0050	0.0010	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0050	0.00066	EPA-8260B	ND		1
Vinyl chloride	ND	mg/kg	0.0050	0.00059	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0025	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.20	0.058	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	116	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	105	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	92.3	%	74 - 121 (LCL - UCL)		EPA-8260B			1

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Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 2209966-01 | **Client Sample Name:** HA-1, 4/26/2022 11:05:00AM

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	05/03/22 07:37	05/04/22 04:45	BYM	MS-V18	1	B138648	EPA 5030 Soil MS

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Total Petroleum Hydrocarbons

BCL Sample ID: 2209966-01 | **Client Sample Name:** HA-1, 4/26/2022 11:05:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Diesel (FFP)	**2.4**	**mg/kg**	**2.0**	**0.77**	**EPA-8015B/FFP**	ND	**A52**	1
TPH - Motor Oil	**14**	**mg/kg**	**4.0**	**1.8**	**EPA-8015B/FFP**	ND	**A57**	1
Tetracosane (Surrogate)	82.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	05/04/22 16:00	05/05/22 20:20	BUP	GC-2	0.993	B139071	EPA 3550B

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Total Concentrations (TTLC)

BCL Sample ID: 2209966-01 | **Client Sample Name:** HA-1, 4/26/2022 11:05:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Antimony	**1.4**	**mg/kg**	**5.0**	**0.33**	**EPA-6010B**	ND	**J**	1
Arsenic	**3.8**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	ND		1
Barium	**120**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	ND		1
Beryllium	**0.22**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	ND	**J**	1
Cadmium	**0.35**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	ND	**J**	1
Chromium	**44**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	0.49	**S11**	1
Cobalt	**9.1**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	ND		1
Copper	**18**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	0.059		1
Lead	**7.6**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	ND		1
Mercury	**0.051**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	ND	**J**	2
Molybdenum	ND	mg/kg	2.5	0.050	EPA-6010B	0.081		1
Nickel	**49**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	ND		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	**0.30**	**mg/kg**	**0.50**	**0.067**	**EPA-6010B**	ND	**J**	1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		1
Vanadium	**25**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	ND		1
Zinc	**35**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	0.20		1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	05/03/22 11:00	05/05/22 01:08	AK1	PE-OP3	0.952	B138706	EPA 3050B
2	EPA-7471A	05/09/22 10:30	05/09/22 16:30	TMT	CETAC3	1.025	B139199	EPA 7471A

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 2209966-02 | **Client Sample Name:** HA-2, 4/26/2022 11:16:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Aldrin	ND	mg/kg	0.0010	0.000036	EPA-8081A	ND		1
alpha-BHC	ND	mg/kg	0.0010	0.000076	EPA-8081A	ND		1
beta-BHC	ND	mg/kg	0.0010	0.000096	EPA-8081A	ND		1
delta-BHC	ND	mg/kg	0.0010	0.000074	EPA-8081A	ND		1
gamma-BHC (Lindane)	ND	mg/kg	0.0010	0.000036	EPA-8081A	ND		1
Chlordane (Technical)	ND	mg/kg	0.10	0.0020	EPA-8081A	ND		1
4,4'-DDD	ND	mg/kg	0.0010	0.00013	EPA-8081A	ND		1
4,4'-DDE	**0.0023**	**mg/kg**	**0.0010**	**0.00019**	**EPA-8081A**	ND		1
4,4'-DDT	**0.00081**	**mg/kg**	**0.0010**	**0.000080**	**EPA-8081A**	ND	**J**	1
Dieldrin	ND	mg/kg	0.0010	0.000072	EPA-8081A	ND		1
Endosulfan I	ND	mg/kg	0.0010	0.000040	EPA-8081A	ND		1
Endosulfan II	ND	mg/kg	0.0010	0.000068	EPA-8081A	ND		1
Endosulfan sulfate	ND	mg/kg	0.0010	0.000052	EPA-8081A	ND		1
Endrin	ND	mg/kg	0.0010	0.00013	EPA-8081A	ND		1
Endrin aldehyde	ND	mg/kg	0.0010	0.000036	EPA-8081A	ND		1
Heptachlor	ND	mg/kg	0.0010	0.00017	EPA-8081A	ND		1
Heptachlor epoxide	ND	mg/kg	0.0010	0.000034	EPA-8081A	ND		1
Methoxychlor	**0.011**	**mg/kg**	**0.0010**	**0.00019**	**EPA-8081A**	ND		1
Toxaphene	ND	mg/kg	0.10	0.0028	EPA-8081A	ND		1
TCMX (Surrogate)	75.8	%	20 - 130 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	73.3	%	40 - 130 (LCL - UCL)		EPA-8081A			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8081A	05/04/22 16:30	05/05/22 16:51	HKS	GC-17	2	B139062	EPA 3550B

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 2209966-02 | **Client Sample Name:** HA-2, 4/26/2022 11:16:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
Bromobenzene	ND	mg/kg	0.0050	0.00087	EPA-8260B	ND		1
Bromochloromethane	ND	mg/kg	0.0050	0.00081	EPA-8260B	ND		1
Bromodichloromethane	ND	mg/kg	0.0050	0.00078	EPA-8260B	ND		1
Bromoform	ND	mg/kg	0.0050	0.00070	EPA-8260B	ND		1
Bromomethane	ND	mg/kg	0.0050	0.0017	EPA-8260B	ND		1
n-Butylbenzene	ND	mg/kg	0.0050	0.00076	EPA-8260B	ND		1
sec-Butylbenzene	ND	mg/kg	0.0050	0.00071	EPA-8260B	ND		1
tert-Butylbenzene	ND	mg/kg	0.0050	0.00085	EPA-8260B	ND		1
Carbon tetrachloride	ND	mg/kg	0.0050	0.00078	EPA-8260B	ND		1
Chlorobenzene	ND	mg/kg	0.0050	0.00077	EPA-8260B	ND		1
Chloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
Chloroform	ND	mg/kg	0.0050	0.00090	EPA-8260B	ND		1
Chloromethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
2-Chlorotoluene	ND	mg/kg	0.0050	0.00087	EPA-8260B	ND		1
4-Chlorotoluene	ND	mg/kg	0.0050	0.00070	EPA-8260B	ND		1
Dibromochloromethane	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0050	0.00096	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.00082	EPA-8260B	ND		1
Dibromomethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	mg/kg	0.0050	0.00079	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	mg/kg	0.0050	0.00073	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	mg/kg	0.0050	0.00073	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	mg/kg	0.0050	0.00079	EPA-8260B	ND		1
1,1-Dichloroethane	ND	mg/kg	0.0050	0.00064	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00073	EPA-8260B	ND		1
1,1-Dichloroethene	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	mg/kg	0.0050	0.00054	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0037	EPA-8260B	ND		1
Total 1,2-Dichloroethene	ND	mg/kg	0.010	0.0043	EPA-8260B	ND		1
1,2-Dichloropropane	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
1,3-Dichloropropane	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
2,2-Dichloropropane	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1

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TRC
1850 Gateway Blvd, Suite 1000
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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 2209966-02 | **Client Sample Name:** HA-2, 4/26/2022 11:16:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
1,1-Dichloropropene	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
cis-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00058	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00066	EPA-8260B	ND		1
Total 1,3-Dichloropropene	ND	mg/kg	0.010	0.0013	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.00069	EPA-8260B	ND		1
Hexachlorobutadiene	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
Isopropylbenzene	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
p-Isopropyltoluene	ND	mg/kg	0.0050	0.00059	EPA-8260B	ND		1
Methylene chloride	ND	mg/kg	0.010	0.0011	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0050	0.00056	EPA-8260B	ND		1
Naphthalene	ND	mg/kg	0.0050	0.00099	EPA-8260B	ND		1
n-Propylbenzene	ND	mg/kg	0.0050	0.00071	EPA-8260B	ND		1
Styrene	ND	mg/kg	0.0050	0.00062	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00095	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00084	EPA-8260B	ND		1
Tetrachloroethene	ND	mg/kg	0.0050	0.00097	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0050	0.00069	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	mg/kg	0.0050	0.00094	EPA-8260B	ND		1
Trichloroethene	ND	mg/kg	0.0050	0.00074	EPA-8260B	ND		1
Trichlorofluoromethane	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	mg/kg	0.0050	0.0019	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0050	0.0010	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0050	0.00066	EPA-8260B	ND		1
Vinyl chloride	ND	mg/kg	0.0050	0.00059	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0025	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.20	0.058	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	120	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	108	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	90.8	%	74 - 121 (LCL - UCL)		EPA-8260B			1

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 2209966-02 | **Client Sample Name:** HA-2, 4/26/2022 11:16:00AM

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	05/03/22 07:37	05/04/22 05:11	BYM	MS-V18	1	B138648	EPA 5030 Soil MS

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Total Petroleum Hydrocarbons

BCL Sample ID: 2209966-02 | **Client Sample Name:** HA-2, 4/26/2022 11:16:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Diesel (FFP)	**2.1**	**mg/kg**	**2.0**	**0.77**	**EPA-8015B/FFP**	ND	**A52**	1
TPH - Motor Oil	**8.6**	**mg/kg**	**4.0**	**1.8**	**EPA-8015B/FFP**	ND	**A57**	1
Tetracosane (Surrogate)	80.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	05/04/22 16:00	05/05/22 20:43	BUP	GC-2	0.934	B139071	EPA 3550B

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Total Concentrations (TTLC)

BCL Sample ID: 2209966-02 | **Client Sample Name:** HA-2, 4/26/2022 11:16:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Antimony	**1.4**	**mg/kg**	**5.0**	**0.33**	**EPA-6010B**	ND	**J**	1
Arsenic	**5.4**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	ND		1
Barium	**130**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	ND		1
Beryllium	**0.25**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	ND	**J**	1
Cadmium	**0.38**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	ND	**J**	1
Chromium	**48**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	0.51	**S11**	1
Cobalt	**10**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	ND		1
Copper	**21**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	0.062		1
Lead	**9.3**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	ND		1
Mercury	**0.13**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	ND	**J**	2
Molybdenum	ND	mg/kg	2.5	0.050	EPA-6010B	0.085		1
Nickel	**53**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	ND		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	**0.27**	**mg/kg**	**0.50**	**0.067**	**EPA-6010B**	ND	**J**	1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		1
Vanadium	**30**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	ND		1
Zinc	**38**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	0.21		1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	05/03/22 11:00	05/05/22 01:10	AK1	PE-OP3	1	B138706	EPA 3050B
2	EPA-7471A	05/09/22 10:30	05/09/22 16:32	TMT	CETAC3	1.008	B139199	EPA 7471A

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 2209966-03 | **Client Sample Name:** HA-3, 4/26/2022 11:29:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Aldrin	ND	mg/kg	0.00050	0.000018	EPA-8081A	ND		1
alpha-BHC	ND	mg/kg	0.00050	0.000038	EPA-8081A	ND		1
beta-BHC	ND	mg/kg	0.00050	0.000048	EPA-8081A	ND		1
delta-BHC	ND	mg/kg	0.00050	0.000037	EPA-8081A	ND		1
gamma-BHC (Lindane)	ND	mg/kg	0.00050	0.000018	EPA-8081A	ND		1
Chlordane (Technical)	ND	mg/kg	0.050	0.0010	EPA-8081A	ND		1
4,4'-DDD	**0.00018**	**mg/kg**	**0.00050**	**0.000064**	**EPA-8081A**	ND	**J**	1
4,4'-DDE	**0.0021**	**mg/kg**	**0.00050**	**0.000095**	**EPA-8081A**	ND		1
4,4'-DDT	**0.00026**	**mg/kg**	**0.00050**	**0.000040**	**EPA-8081A**	ND	**J**	1
Dieldrin	ND	mg/kg	0.00050	0.000036	EPA-8081A	ND		1
Endosulfan I	ND	mg/kg	0.00050	0.000020	EPA-8081A	ND		1
Endosulfan II	ND	mg/kg	0.00050	0.000034	EPA-8081A	ND		1
Endosulfan sulfate	ND	mg/kg	0.00050	0.000026	EPA-8081A	ND		1
Endrin	ND	mg/kg	0.00050	0.000065	EPA-8081A	ND		1
Endrin aldehyde	ND	mg/kg	0.00050	0.000018	EPA-8081A	ND		1
Heptachlor	ND	mg/kg	0.00050	0.000086	EPA-8081A	ND		1
Heptachlor epoxide	ND	mg/kg	0.00050	0.000017	EPA-8081A	ND		1
Methoxychlor	ND	mg/kg	0.00050	0.000094	EPA-8081A	ND		1
Toxaphene	ND	mg/kg	0.050	0.0014	EPA-8081A	ND		1
TCMX (Surrogate)	69.2	%	20 - 130 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	68.2	%	40 - 130 (LCL - UCL)		EPA-8081A			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8081A	05/04/22 16:30	05/05/22 17:08	HKS	GC-17	1.010	B139062	EPA 3550B

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 2209966-03 | **Client Sample Name:** HA-3, 4/26/2022 11:29:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
Bromobenzene	ND	mg/kg	0.0050	0.00087	EPA-8260B	ND		1
Bromochloromethane	ND	mg/kg	0.0050	0.00081	EPA-8260B	ND		1
Bromodichloromethane	ND	mg/kg	0.0050	0.00078	EPA-8260B	ND		1
Bromoform	ND	mg/kg	0.0050	0.00070	EPA-8260B	ND		1
Bromomethane	ND	mg/kg	0.0050	0.0017	EPA-8260B	ND		1
n-Butylbenzene	ND	mg/kg	0.0050	0.00076	EPA-8260B	ND		1
sec-Butylbenzene	ND	mg/kg	0.0050	0.00071	EPA-8260B	ND		1
tert-Butylbenzene	ND	mg/kg	0.0050	0.00085	EPA-8260B	ND		1
Carbon tetrachloride	ND	mg/kg	0.0050	0.00078	EPA-8260B	ND		1
Chlorobenzene	ND	mg/kg	0.0050	0.00077	EPA-8260B	ND		1
Chloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
Chloroform	ND	mg/kg	0.0050	0.00090	EPA-8260B	ND		1
Chloromethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
2-Chlorotoluene	ND	mg/kg	0.0050	0.00087	EPA-8260B	ND		1
4-Chlorotoluene	ND	mg/kg	0.0050	0.00070	EPA-8260B	ND		1
Dibromochloromethane	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0050	0.00096	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.00082	EPA-8260B	ND		1
Dibromomethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	mg/kg	0.0050	0.00079	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	mg/kg	0.0050	0.00073	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	mg/kg	0.0050	0.00073	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	mg/kg	0.0050	0.00079	EPA-8260B	ND		1
1,1-Dichloroethane	ND	mg/kg	0.0050	0.00064	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00073	EPA-8260B	ND		1
1,1-Dichloroethene	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	mg/kg	0.0050	0.00054	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0037	EPA-8260B	ND		1
Total 1,2-Dichloroethene	ND	mg/kg	0.010	0.0043	EPA-8260B	ND		1
1,2-Dichloropropane	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
1,3-Dichloropropane	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
2,2-Dichloropropane	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 2209966-03 | **Client Sample Name:** HA-3, 4/26/2022 11:29:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
1,1-Dichloropropene	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
cis-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00058	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00066	EPA-8260B	ND		1
Total 1,3-Dichloropropene	ND	mg/kg	0.010	0.0013	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.00069	EPA-8260B	ND		1
Hexachlorobutadiene	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
Isopropylbenzene	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
p-Isopropyltoluene	ND	mg/kg	0.0050	0.00059	EPA-8260B	ND		1
Methylene chloride	ND	mg/kg	0.010	0.0011	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0050	0.00056	EPA-8260B	ND		1
Naphthalene	ND	mg/kg	0.0050	0.00099	EPA-8260B	ND		1
n-Propylbenzene	ND	mg/kg	0.0050	0.00071	EPA-8260B	ND		1
Styrene	ND	mg/kg	0.0050	0.00062	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00095	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00084	EPA-8260B	ND		1
Tetrachloroethene	ND	mg/kg	0.0050	0.00097	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0050	0.00069	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	mg/kg	0.0050	0.00094	EPA-8260B	ND		1
Trichloroethene	ND	mg/kg	0.0050	0.00074	EPA-8260B	ND		1
Trichlorofluoromethane	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	mg/kg	0.0050	0.0019	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0050	0.0010	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0050	0.00066	EPA-8260B	ND		1
Vinyl chloride	ND	mg/kg	0.0050	0.00059	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0025	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.20	0.058	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	126	%	70 - 121 (LCL - UCL)		EPA-8260B		S09	1
Toluene-d8 (Surrogate)	105	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	87.3	%	74 - 121 (LCL - UCL)		EPA-8260B			1

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 2209966-03 | **Client Sample Name:** HA-3, 4/26/2022 11:29:00AM

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	05/03/22 07:37	05/04/22 05:38	BYM	MS-V18	1	B138648	EPA 5030 Soil MS

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Total Petroleum Hydrocarbons

BCL Sample ID: 2209966-03 | **Client Sample Name:** HA-3, 4/26/2022 11:29:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Diesel (FFP)	**2.1**	**mg/kg**	**2.0**	**0.77**	**EPA-8015B/FFP**	ND	**A52**	1
TPH - Motor Oil	**8.9**	**mg/kg**	**4.0**	**1.8**	**EPA-8015B/FFP**	ND	**A57**	1
Tetracosane (Surrogate)	79.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	05/04/22 16:00	05/05/22 21:07	BUP	GC-2	0.984	B139071	EPA 3550B

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Total Concentrations (TTLC)

BCL Sample ID: 2209966-03 | **Client Sample Name:** HA-3, 4/26/2022 11:29:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Antimony	**1.6**	**mg/kg**	**5.0**	**0.33**	**EPA-6010B**	ND	**J**	1
Arsenic	**4.1**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	ND		1
Barium	**120**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	ND		1
Beryllium	**0.22**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	ND	**J**	1
Cadmium	**0.41**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	ND	**J**	1
Chromium	**50**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	0.50	**S11**	1
Cobalt	**11**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	ND		1
Copper	**24**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	0.061		1
Lead	**7.5**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	ND		1
Mercury	**0.049**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	ND	**J**	2
Molybdenum	ND	mg/kg	2.5	0.050	EPA-6010B	0.084		1
Nickel	**51**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	ND		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	**0.30**	**mg/kg**	**0.50**	**0.067**	**EPA-6010B**	ND	**J**	1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		1
Vanadium	**33**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	ND		1
Zinc	**38**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	0.20		1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	05/03/22 11:00	05/05/22 01:12	AK1	PE-OP3	0.990	B138706	EPA 3050B
2	EPA-7471A	05/09/22 10:30	05/09/22 16:34	TMT	CETAC3	1.025	B139199	EPA 7471A

DCN = Data Continuation Number

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TRC
1850 Gateway Blvd, Suite 1000
Concord, CA 94520

Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 2209966-04 | **Client Sample Name:** HA-4, 4/26/2022 11:40:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Aldrin	ND	mg/kg	0.00050	0.000018	EPA-8081A	ND		1
alpha-BHC	ND	mg/kg	0.00050	0.000038	EPA-8081A	ND		1
beta-BHC	ND	mg/kg	0.00050	0.000048	EPA-8081A	ND		1
delta-BHC	ND	mg/kg	0.00050	0.000037	EPA-8081A	ND		1
gamma-BHC (Lindane)	ND	mg/kg	0.00050	0.000018	EPA-8081A	ND		1
Chlordane (Technical)	ND	mg/kg	0.050	0.0010	EPA-8081A	ND		1
4,4'-DDD	**0.00051**	**mg/kg**	**0.00050**	**0.000064**	**EPA-8081A**	ND		1
4,4'-DDE	**0.00083**	**mg/kg**	**0.00050**	**0.000095**	**EPA-8081A**	ND		1
4,4'-DDT	**0.00043**	**mg/kg**	**0.00050**	**0.000040**	**EPA-8081A**	ND	J	1
Dieldrin	ND	mg/kg	0.00050	0.000036	EPA-8081A	ND		1
Endosulfan I	ND	mg/kg	0.00050	0.000020	EPA-8081A	ND		1
Endosulfan II	ND	mg/kg	0.00050	0.000034	EPA-8081A	ND		1
Endosulfan sulfate	ND	mg/kg	0.00050	0.000026	EPA-8081A	ND		1
Endrin	ND	mg/kg	0.00050	0.000065	EPA-8081A	ND		1
Endrin aldehyde	ND	mg/kg	0.00050	0.000018	EPA-8081A	ND		1
Heptachlor	ND	mg/kg	0.00050	0.000086	EPA-8081A	ND		1
Heptachlor epoxide	ND	mg/kg	0.00050	0.000017	EPA-8081A	ND		1
Methoxychlor	ND	mg/kg	0.00050	0.000094	EPA-8081A	ND		1
Toxaphene	ND	mg/kg	0.050	0.0014	EPA-8081A	ND		1
TCMX (Surrogate)	64.8	%	20 - 130 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	53.0	%	40 - 130 (LCL - UCL)		EPA-8081A			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8081A	05/04/22 16:30	05/05/22 17:24	HKS	GC-17	1.007	B139062	EPA 3550B

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 2209966-04 | **Client Sample Name:** HA-4, 4/26/2022 11:40:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
Bromobenzene	ND	mg/kg	0.0050	0.00087	EPA-8260B	ND		1
Bromochloromethane	ND	mg/kg	0.0050	0.00081	EPA-8260B	ND		1
Bromodichloromethane	ND	mg/kg	0.0050	0.00078	EPA-8260B	ND		1
Bromoform	ND	mg/kg	0.0050	0.00070	EPA-8260B	ND		1
Bromomethane	ND	mg/kg	0.0050	0.0017	EPA-8260B	ND		1
n-Butylbenzene	ND	mg/kg	0.0050	0.00076	EPA-8260B	ND		1
sec-Butylbenzene	ND	mg/kg	0.0050	0.00071	EPA-8260B	ND		1
tert-Butylbenzene	ND	mg/kg	0.0050	0.00085	EPA-8260B	ND		1
Carbon tetrachloride	ND	mg/kg	0.0050	0.00078	EPA-8260B	ND		1
Chlorobenzene	ND	mg/kg	0.0050	0.00077	EPA-8260B	ND		1
Chloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
Chloroform	ND	mg/kg	0.0050	0.00090	EPA-8260B	ND		1
Chloromethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
2-Chlorotoluene	ND	mg/kg	0.0050	0.00087	EPA-8260B	ND		1
4-Chlorotoluene	ND	mg/kg	0.0050	0.00070	EPA-8260B	ND		1
Dibromochloromethane	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0050	0.00096	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.00082	EPA-8260B	ND		1
Dibromomethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	mg/kg	0.0050	0.00079	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	mg/kg	0.0050	0.00073	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	mg/kg	0.0050	0.00073	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	mg/kg	0.0050	0.00079	EPA-8260B	ND		1
1,1-Dichloroethane	ND	mg/kg	0.0050	0.00064	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00073	EPA-8260B	ND		1
1,1-Dichloroethene	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	mg/kg	0.0050	0.00054	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0037	EPA-8260B	ND		1
Total 1,2-Dichloroethene	ND	mg/kg	0.010	0.0043	EPA-8260B	ND		1
1,2-Dichloropropane	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
1,3-Dichloropropane	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
2,2-Dichloropropane	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 2209966-04 | **Client Sample Name:** HA-4, 4/26/2022 11:40:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
1,1-Dichloropropene	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
cis-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00058	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00066	EPA-8260B	ND		1
Total 1,3-Dichloropropene	ND	mg/kg	0.010	0.0013	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.00069	EPA-8260B	ND		1
Hexachlorobutadiene	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
Isopropylbenzene	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
p-Isopropyltoluene	ND	mg/kg	0.0050	0.00059	EPA-8260B	ND		1
Methylene chloride	ND	mg/kg	0.010	0.0011	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0050	0.00056	EPA-8260B	ND		1
Naphthalene	ND	mg/kg	0.0050	0.00099	EPA-8260B	ND		1
n-Propylbenzene	ND	mg/kg	0.0050	0.00071	EPA-8260B	ND		1
Styrene	ND	mg/kg	0.0050	0.00062	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00095	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00084	EPA-8260B	ND		1
Tetrachloroethene	ND	mg/kg	0.0050	0.00097	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0050	0.00069	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	mg/kg	0.0050	0.00067	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	mg/kg	0.0050	0.00094	EPA-8260B	ND		1
Trichloroethene	ND	mg/kg	0.0050	0.00074	EPA-8260B	ND		1
Trichlorofluoromethane	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	mg/kg	0.0050	0.0019	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0050	0.0010	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0050	0.00080	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0050	0.00066	EPA-8260B	ND		1
Vinyl chloride	ND	mg/kg	0.0050	0.00059	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0025	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	ND	mg/kg	0.20	0.058	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	112	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	107	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	97.4	%	74 - 121 (LCL - UCL)		EPA-8260B			1

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Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 2209966-04 | **Client Sample Name:** HA-4, 4/26/2022 11:40:00AM

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	05/03/22 07:37	05/04/22 06:04	BYM	MS-V18	1	B138648	EPA 5030 Soil MS

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Total Petroleum Hydrocarbons

BCL Sample ID: 2209966-04 | **Client Sample Name:** HA-4, 4/26/2022 11:40:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Diesel (FFP)	**2.5**	**mg/kg**	**2.0**	**0.77**	**EPA-8015B/FFP**	ND	**A52**	1
TPH - Motor Oil	**13**	**mg/kg**	**4.0**	**1.8**	**EPA-8015B/FFP**	ND	**A57**	1
Tetracosane (Surrogate)	98.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	05/04/22 16:00	05/05/22 22:39	BUP	GC-2	0.970	B139071	EPA 3550B

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Total Concentrations (TTLC)

BCL Sample ID: 2209966-04 | **Client Sample Name:** HA-4, 4/26/2022 11:40:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Antimony	**1.6**	**mg/kg**	**5.0**	**0.33**	**EPA-6010B**	ND	**J**	1
Arsenic	**4.0**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	ND		1
Barium	**140**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	ND		1
Beryllium	**0.26**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	ND	**J**	1
Cadmium	**0.41**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	ND	**J**	1
Chromium	**50**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	0.48	**S11**	1
Cobalt	**9.6**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	ND		1
Copper	**21**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	0.058		1
Lead	**12**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	ND		1
Mercury	**0.048**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	ND	**J**	2
Molybdenum	ND	mg/kg	2.5	0.050	EPA-6010B	0.080		1
Nickel	**55**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	ND		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	**0.33**	**mg/kg**	**0.50**	**0.067**	**EPA-6010B**	ND	**J**	1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		1
Vanadium	**28**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	ND		1
Zinc	**44**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	0.19		1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	05/03/22 11:00	05/05/22 01:13	AK1	PE-OP3	0.943	B138706	EPA 3050B
2	EPA-7471A	05/09/22 10:30	05/09/22 16:36	TMT	CETAC3	1.008	B139199	EPA 7471A

DCN = Data Continuation Number

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Organochlorine Pesticides (EPA Method 8081A)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B139062						
Aldrin	B139062-BLK1	ND	mg/kg	0.00050	0.000018	
alpha-BHC	B139062-BLK1	ND	mg/kg	0.00050	0.000038	
beta-BHC	B139062-BLK1	ND	mg/kg	0.00050	0.000048	
delta-BHC	B139062-BLK1	ND	mg/kg	0.00050	0.000037	
gamma-BHC (Lindane)	B139062-BLK1	ND	mg/kg	0.00050	0.000018	
Chlordane (Technical)	B139062-BLK1	ND	mg/kg	0.050	0.0010	
4,4'-DDD	B139062-BLK1	ND	mg/kg	0.00050	0.000064	
4,4'-DDE	B139062-BLK1	ND	mg/kg	0.00050	0.000095	
4,4'-DDT	B139062-BLK1	ND	mg/kg	0.00050	0.000040	
Dieldrin	B139062-BLK1	ND	mg/kg	0.00050	0.000036	
Endosulfan I	B139062-BLK1	ND	mg/kg	0.00050	0.000020	
Endosulfan II	B139062-BLK1	ND	mg/kg	0.00050	0.000034	
Endosulfan sulfate	B139062-BLK1	ND	mg/kg	0.00050	0.000026	
Endrin	B139062-BLK1	ND	mg/kg	0.00050	0.000065	
Endrin aldehyde	B139062-BLK1	ND	mg/kg	0.00050	0.000018	
Heptachlor	B139062-BLK1	ND	mg/kg	0.00050	0.000086	
Heptachlor epoxide	B139062-BLK1	ND	mg/kg	0.00050	0.000017	
Methoxychlor	B139062-BLK1	ND	mg/kg	0.00050	0.000094	
Toxaphene	B139062-BLK1	ND	mg/kg	0.050	0.0014	
TCMX (Surrogate)	**B139062-BLK1**	**98.7**	%	**20 - 130 (LCL - UCL)**		
Decachlorobiphenyl (Surrogate)	**B139062-BLK1**	**110**	%	**40 - 130 (LCL - UCL)**		

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Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Organochlorine Pesticides (EPA Method 8081A)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B139062										
Aldrin	B139062-BS1	LCS	0.0052152	0.0049505	mg/kg	105		70 - 130		
gamma-BHC (Lindane)	B139062-BS1	LCS	0.0051343	0.0049505	mg/kg	104		60 - 140		
4,4'-DDT	B139062-BS1	LCS	0.0050686	0.0049505	mg/kg	102		60 - 140		
Dieldrin	B139062-BS1	LCS	0.0053604	0.0049505	mg/kg	108		70 - 130		
Endrin	B139062-BS1	LCS	0.0048739	0.0049505	mg/kg	98.5		60 - 140		
Heptachlor	B139062-BS1	LCS	0.0052759	0.0049505	mg/kg	107		60 - 140		
TCMX (Surrogate)	B139062-BS1	LCS	0.0097307	0.0099010	mg/kg	98.3		20 - 130		
Decachlorobiphenyl (Surrogate)	B139062-BS1	LCS	0.021727	0.019802	mg/kg	110		40 - 130		

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Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Organochlorine Pesticides (EPA Method 8081A)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B139062	Used client sample: Y - Description: HA-1, 04/26/2022 11:05										
Aldrin	MS	2209966-01	ND	0.0042725	0.0050336	mg/kg		84.9		50 - 140	
	MSD	2209966-01	ND	0.0043145	0.0050505	mg/kg	1.0	85.4	30	50 - 140	
gamma-BHC (Lindane)	MS	2209966-01	ND	0.0043030	0.0050336	mg/kg		85.5		50 - 140	
	MSD	2209966-01	ND	0.0040754	0.0050505	mg/kg	5.4	80.7	30	50 - 140	
4,4'-DDT	MS	2209966-01	0.00043514	0.0046775	0.0050336	mg/kg		84.3		50 - 140	
	MSD	2209966-01	0.00043514	0.0050320	0.0050505	mg/kg	7.3	91.0	30	50 - 140	
Dieldrin	MS	2209966-01	ND	0.0048470	0.0050336	mg/kg		96.3		40 - 140	
	MSD	2209966-01	ND	0.0051599	0.0050505	mg/kg	6.3	102	30	40 - 140	
Endrin	MS	2209966-01	ND	0.0048913	0.0050336	mg/kg		97.2		50 - 150	
	MSD	2209966-01	ND	0.0049017	0.0050505	mg/kg	0.2	97.1	30	50 - 150	
Heptachlor	MS	2209966-01	ND	0.0043483	0.0050336	mg/kg		86.4		60 - 140	
	MSD	2209966-01	ND	0.0041135	0.0050505	mg/kg	5.6	81.4	30	60 - 140	
TCMX (Surrogate)	MS	2209966-01	ND	0.0083262	0.010067	mg/kg		82.7		20 - 130	
	MSD	2209966-01	ND	0.0089626	0.010101	mg/kg	7.4	88.7		20 - 130	
Decachlorobiphenyl (Surrogate)	MS	2209966-01	ND	0.017544	0.020134	mg/kg		87.1		40 - 130	
	MSD	2209966-01	ND	0.017600	0.020202	mg/kg	0.3	87.1		40 - 130	

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1850 Gateway Blvd, Suite 1000
Concord, CA 94520

Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B138648						
Benzene	B138648-BLK1	ND	mg/kg	0.0050	0.00067	
Bromobenzene	B138648-BLK1	ND	mg/kg	0.0050	0.00087	
Bromochloromethane	B138648-BLK1	ND	mg/kg	0.0050	0.00081	
Bromodichloromethane	B138648-BLK1	ND	mg/kg	0.0050	0.00078	
Bromoform	B138648-BLK1	ND	mg/kg	0.0050	0.00070	
Bromomethane	B138648-BLK1	ND	mg/kg	0.0050	0.0017	
n-Butylbenzene	B138648-BLK1	ND	mg/kg	0.0050	0.00076	
sec-Butylbenzene	B138648-BLK1	ND	mg/kg	0.0050	0.00071	
tert-Butylbenzene	B138648-BLK1	ND	mg/kg	0.0050	0.00085	
Carbon tetrachloride	B138648-BLK1	ND	mg/kg	0.0050	0.00078	
Chlorobenzene	B138648-BLK1	ND	mg/kg	0.0050	0.00077	
Chloroethane	B138648-BLK1	ND	mg/kg	0.0050	0.0011	
Chloroform	B138648-BLK1	ND	mg/kg	0.0050	0.00090	
Chloromethane	B138648-BLK1	ND	mg/kg	0.0050	0.0011	
2-Chlorotoluene	B138648-BLK1	ND	mg/kg	0.0050	0.00087	
4-Chlorotoluene	B138648-BLK1	ND	mg/kg	0.0050	0.00070	
Dibromochloromethane	B138648-BLK1	ND	mg/kg	0.0050	0.00080	
1,2-Dibromo-3-chloropropane	B138648-BLK1	ND	mg/kg	0.0050	0.00096	
1,2-Dibromoethane	B138648-BLK1	ND	mg/kg	0.0050	0.00082	
Dibromomethane	B138648-BLK1	ND	mg/kg	0.0050	0.0014	
1,2-Dichlorobenzene	B138648-BLK1	ND	mg/kg	0.0050	0.00079	
1,3-Dichlorobenzene	B138648-BLK1	ND	mg/kg	0.0050	0.00073	
1,4-Dichlorobenzene	B138648-BLK1	ND	mg/kg	0.0050	0.00073	
Dichlorodifluoromethane	B138648-BLK1	ND	mg/kg	0.0050	0.00079	
1,1-Dichloroethane	B138648-BLK1	ND	mg/kg	0.0050	0.00064	
1,2-Dichloroethane	B138648-BLK1	ND	mg/kg	0.0050	0.00073	
1,1-Dichloroethene	B138648-BLK1	ND	mg/kg	0.0050	0.0011	
cis-1,2-Dichloroethene	B138648-BLK1	ND	mg/kg	0.0050	0.00054	
trans-1,2-Dichloroethene	B138648-BLK1	ND	mg/kg	0.0050	0.0037	
Total 1,2-Dichloroethene	B138648-BLK1	ND	mg/kg	0.010	0.0043	
1,2-Dichloropropane	B138648-BLK1	ND	mg/kg	0.0050	0.00080	
1,3-Dichloropropane	B138648-BLK1	ND	mg/kg	0.0050	0.00067	
2,2-Dichloropropane	B138648-BLK1	ND	mg/kg	0.0050	0.00067	
1,1-Dichloropropene	B138648-BLK1	ND	mg/kg	0.0050	0.00067	

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QC Batch ID: B138648						
cis-1,3-Dichloropropene	B138648-BLK1	ND	mg/kg	0.0050	0.00058	
trans-1,3-Dichloropropene	B138648-BLK1	ND	mg/kg	0.0050	0.00066	
Total 1,3-Dichloropropene	B138648-BLK1	ND	mg/kg	0.010	0.0013	
Ethylbenzene	B138648-BLK1	ND	mg/kg	0.0050	0.00069	
Hexachlorobutadiene	B138648-BLK1	ND	mg/kg	0.0050	0.00067	
Isopropylbenzene	B138648-BLK1	ND	mg/kg	0.0050	0.00080	
p-Isopropyltoluene	B138648-BLK1	ND	mg/kg	0.0050	0.00059	
Methylene chloride	B138648-BLK1	ND	mg/kg	0.010	0.0011	
Methyl t-butyl ether	B138648-BLK1	ND	mg/kg	0.0050	0.00056	
Naphthalene	B138648-BLK1	ND	mg/kg	0.0050	0.00099	
n-Propylbenzene	B138648-BLK1	ND	mg/kg	0.0050	0.00071	
Styrene	B138648-BLK1	ND	mg/kg	0.0050	0.00062	
1,1,1,2-Tetrachloroethane	B138648-BLK1	ND	mg/kg	0.0050	0.00095	
1,1,2,2-Tetrachloroethane	B138648-BLK1	ND	mg/kg	0.0050	0.00084	
Tetrachloroethene	B138648-BLK1	ND	mg/kg	0.0050	0.00097	
Toluene	B138648-BLK1	ND	mg/kg	0.0050	0.00069	
1,2,3-Trichlorobenzene	B138648-BLK1	ND	mg/kg	0.0050	0.0015	
1,2,4-Trichlorobenzene	B138648-BLK1	ND	mg/kg	0.0050	0.0014	
1,1,1-Trichloroethane	B138648-BLK1	ND	mg/kg	0.0050	0.00067	
1,1,2-Trichloroethane	B138648-BLK1	ND	mg/kg	0.0050	0.00094	
Trichloroethene	B138648-BLK1	ND	mg/kg	0.0050	0.00074	
Trichlorofluoromethane	B138648-BLK1	ND	mg/kg	0.0050	0.0015	
1,2,3-Trichloropropane	B138648-BLK1	ND	mg/kg	0.0050	0.0019	
1,1,2-Trichloro-1,2,2-trifluoroethane	B138648-BLK1	ND	mg/kg	0.0050	0.0010	
1,2,4-Trimethylbenzene	B138648-BLK1	ND	mg/kg	0.0050	0.00080	
1,3,5-Trimethylbenzene	B138648-BLK1	ND	mg/kg	0.0050	0.00066	
Vinyl chloride	B138648-BLK1	ND	mg/kg	0.0050	0.00059	
Total Xylenes	B138648-BLK1	ND	mg/kg	0.010	0.0025	
Total Purgeable Petroleum Hydrocarbons	B138648-BLK1	ND	mg/kg	0.20	0.058	
1,2-Dichloroethane-d4 (Surrogate)	**B138648-BLK1**	**104**	%	**70 - 121 (LCL - UCL)**		
Toluene-d8 (Surrogate)	**B138648-BLK1**	**101**	%	**81 - 117 (LCL - UCL)**		
4-Bromofluorobenzene (Surrogate)	**B138648-BLK1**	**91.9**	%	**74 - 121 (LCL - UCL)**		

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Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B138648										
Benzene	B138648-BS1	LCS	0.12070	0.12500	mg/kg	96.6		70 - 130		
Bromodichloromethane	B138648-BS1	LCS	0.11700	0.12500	mg/kg	93.6		70 - 130		
Chlorobenzene	B138648-BS1	LCS	0.12720	0.12500	mg/kg	102		70 - 130		
Chloroethane	B138648-BS1	LCS	0.15498	0.12500	mg/kg	124		70 - 130		
1,4-Dichlorobenzene	B138648-BS1	LCS	0.13816	0.12500	mg/kg	111		70 - 130		
1,1-Dichloroethane	B138648-BS1	LCS	0.11191	0.12500	mg/kg	89.5		70 - 130		
1,1-Dichloroethene	B138648-BS1	LCS	0.12336	0.12500	mg/kg	98.7		70 - 130		
Toluene	B138648-BS1	LCS	0.12738	0.12500	mg/kg	102		70 - 130		
Trichloroethene	B138648-BS1	LCS	0.12686	0.12500	mg/kg	101		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	B138648-BS1	LCS	0.050390	0.050000	mg/kg	101		70 - 121		
Toluene-d8 (Surrogate)	B138648-BS1	LCS	0.051670	0.050000	mg/kg	103		81 - 117		
4-Bromofluorobenzene (Surrogate)	B138648-BS1	LCS	0.051390	0.050000	mg/kg	103		74 - 121		

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Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B138648	Used client sample: N										
Benzene	MS	2207542-99	ND	0.13146	0.12500	mg/kg		105		70 - 130	
	MSD	2207542-99	ND	0.13412	0.12500	mg/kg	2.0	107	20	70 - 130	
Bromodichloromethane	MS	2207542-99	ND	0.12902	0.12500	mg/kg		103		70 - 130	
	MSD	2207542-99	ND	0.12946	0.12500	mg/kg	0.3	104	20	70 - 130	
Chlorobenzene	MS	2207542-99	ND	0.13566	0.12500	mg/kg		109		70 - 130	
	MSD	2207542-99	ND	0.13855	0.12500	mg/kg	2.1	111	20	70 - 130	
Chloroethane	MS	2207542-99	ND	0.15954	0.12500	mg/kg		128		70 - 130	
	MSD	2207542-99	ND	0.16074	0.12500	mg/kg	0.7	129	20	70 - 130	
1,4-Dichlorobenzene	MS	2207542-99	ND	0.14921	0.12500	mg/kg		119		70 - 130	
	MSD	2207542-99	ND	0.14897	0.12500	mg/kg	0.2	119	20	70 - 130	
1,1-Dichloroethane	MS	2207542-99	ND	0.12453	0.12500	mg/kg		99.6		70 - 130	
	MSD	2207542-99	ND	0.12596	0.12500	mg/kg	1.1	101	20	70 - 130	
1,1-Dichloroethene	MS	2207542-99	ND	0.13528	0.12500	mg/kg		108		70 - 130	
	MSD	2207542-99	ND	0.13704	0.12500	mg/kg	1.3	110	20	70 - 130	
Toluene	MS	2207542-99	ND	0.13938	0.12500	mg/kg		112		70 - 130	
	MSD	2207542-99	ND	0.14055	0.12500	mg/kg	0.8	112	20	70 - 130	
Trichloroethene	MS	2207542-99	ND	0.13600	0.12500	mg/kg		109		70 - 130	
	MSD	2207542-99	ND	0.13973	0.12500	mg/kg	2.7	112	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	2207542-99	ND	0.051470	0.050000	mg/kg		103		70 - 121	
	MSD	2207542-99	ND	0.049810	0.050000	mg/kg	3.3	99.6		70 - 121	
Toluene-d8 (Surrogate)	MS	2207542-99	ND	0.051570	0.050000	mg/kg		103		81 - 117	
	MSD	2207542-99	ND	0.051590	0.050000	mg/kg	0.0	103		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	2207542-99	ND	0.050000	0.050000	mg/kg		100		74 - 121	
	MSD	2207542-99	ND	0.049500	0.050000	mg/kg	1.0	99.0		74 - 121	

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Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B139071						
TPH - Diesel (FFP)	B139071-BLK1	ND	mg/kg	2.0	0.77	
TPH - Motor Oil	B139071-BLK1	ND	mg/kg	4.0	1.8	
Tetracosane (Surrogate)	**B139071-BLK1**	**114**	%	**20 - 145 (LCL - UCL)**		

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Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B139071										
TPH - Diesel (FFP)	B139071-BS1	LCS	16.390	16.611	mg/kg	98.7		64 - 124		
Tetracosane (Surrogate)	B139071-BS1	LCS	0.71413	0.66445	mg/kg	107		20 - 145		

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Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B139071	Used client sample: N										
TPH - Diesel (FFP)	MS	2210042-01	6.2922	16.947	16.779	mg/kg		63.5		52 - 131	A10
	MSD	2210042-01	6.2922	16.807	16.502	mg/kg	0.8	63.7	30	52 - 131	A10
Tetracosane (Surrogate)	MS	2210042-01	ND	0.54000	0.67114	mg/kg		80.5		20 - 145	A10
	MSD	2210042-01	ND	0.53240	0.66007	mg/kg	1.4	80.7		20 - 145	A10

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Total Concentrations (TTLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B138706						
Antimony	B138706-BLK1	ND	mg/kg	5.0	0.33	
Arsenic	B138706-BLK1	ND	mg/kg	1.0	0.40	
Barium	B138706-BLK1	ND	mg/kg	0.50	0.18	
Beryllium	B138706-BLK1	ND	mg/kg	0.50	0.047	
Cadmium	B138706-BLK1	ND	mg/kg	0.50	0.052	
Chromium	**B138706-BLK1**	**0.50955**	**mg/kg**	**0.50**	**0.050**	**M01**
Cobalt	B138706-BLK1	ND	mg/kg	2.5	0.098	
Copper	**B138706-BLK1**	**0.061957**	**mg/kg**	**1.0**	**0.050**	**J**
Lead	B138706-BLK1	ND	mg/kg	2.5	0.41	
Molybdenum	**B138706-BLK1**	**0.085159**	**mg/kg**	**2.5**	**0.050**	**J**
Nickel	B138706-BLK1	ND	mg/kg	0.50	0.15	
Selenium	B138706-BLK1	ND	mg/kg	1.0	0.98	
Silver	B138706-BLK1	ND	mg/kg	0.50	0.067	
Thallium	B138706-BLK1	ND	mg/kg	5.0	0.64	
Vanadium	B138706-BLK1	ND	mg/kg	0.50	0.11	
Zinc	**B138706-BLK1**	**0.20635**	**mg/kg**	**2.5**	**0.087**	**J**
QC Batch ID: B139199						
Mercury	B139199-BLK1	ND	mg/kg	0.16	0.016	

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Total Concentrations (TTLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B138706										
Antimony	B138706-BS1	LCS	91.532	100.00	mg/kg	91.5		75 - 125		
	B138706-BSD1	LCSD	91.066	100.00	mg/kg	91.1	0.5	75 - 125	20	
Arsenic	B138706-BS1	LCS	16.663	20.000	mg/kg	83.3		75 - 125		
	B138706-BSD1	LCSD	16.506	20.000	mg/kg	82.5	0.9	75 - 125	20	
Barium	B138706-BS1	LCS	92.994	100.00	mg/kg	93.0		75 - 125		
	B138706-BSD1	LCSD	93.301	100.00	mg/kg	93.3	0.3	75 - 125	20	
Beryllium	B138706-BS1	LCS	8.8588	10.000	mg/kg	88.6		75 - 125		
	B138706-BSD1	LCSD	8.8701	10.000	mg/kg	88.7	0.1	75 - 125	20	
Cadmium	B138706-BS1	LCS	9.2062	10.000	mg/kg	92.1		75 - 125		
	B138706-BSD1	LCSD	9.0977	10.000	mg/kg	91.0	1.2	75 - 125	20	
Chromium	B138706-BS1	LCS	92.057	100.00	mg/kg	92.1		75 - 125		
	B138706-BSD1	LCSD	92.740	100.00	mg/kg	92.7	0.7	75 - 125	20	
Cobalt	B138706-BS1	LCS	92.631	100.00	mg/kg	92.6		75 - 125		
	B138706-BSD1	LCSD	93.101	100.00	mg/kg	93.1	0.5	75 - 125	20	
Copper	B138706-BS1	LCS	89.750	100.00	mg/kg	89.8		75 - 125		
	B138706-BSD1	LCSD	89.983	100.00	mg/kg	90.0	0.3	75 - 125	20	
Lead	B138706-BS1	LCS	96.765	100.00	mg/kg	96.8		75 - 125		
	B138706-BSD1	LCSD	97.277	100.00	mg/kg	97.3	0.5	75 - 125	20	
Molybdenum	B138706-BS1	LCS	91.033	100.00	mg/kg	91.0		75 - 125		
	B138706-BSD1	LCSD	91.220	100.00	mg/kg	91.2	0.2	75 - 125	20	
Nickel	B138706-BS1	LCS	92.113	100.00	mg/kg	92.1		75 - 125		
	B138706-BSD1	LCSD	92.312	100.00	mg/kg	92.3	0.2	75 - 125	20	
Selenium	B138706-BS1	LCS	16.961	20.000	mg/kg	84.8		75 - 125		
	B138706-BSD1	LCSD	16.756	20.000	mg/kg	83.8	1.2	75 - 125	20	
Silver	B138706-BS1	LCS	9.1482	10.000	mg/kg	91.5		75 - 125		
	B138706-BSD1	LCSD	9.1726	10.000	mg/kg	91.7	0.3	75 - 125	20	
Thallium	B138706-BS1	LCS	106.46	100.00	mg/kg	106		75 - 125		
	B138706-BSD1	LCSD	106.22	100.00	mg/kg	106	0.2	75 - 125	20	
Vanadium	B138706-BS1	LCS	89.904	100.00	mg/kg	89.9		75 - 125		
	B138706-BSD1	LCSD	90.471	100.00	mg/kg	90.5	0.6	75 - 125	20	
Zinc	B138706-BS1	LCS	89.516	100.00	mg/kg	89.5		75 - 125		
	B138706-BSD1	LCSD	90.306	100.00	mg/kg	90.3	0.9	75 - 125	20	
QC Batch ID: B139199										
Mercury	B139199-BS1	LCS	0.68960	0.80000	mg/kg	86.2		80 - 120		
	B139199-BSD1	LCSD	0.68960	0.80000	mg/kg	86.2	0	80 - 120	20	

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Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B138706	Used client sample: N										
Antimony	DUP	2210023-01	ND	1.1509		mg/kg			20		J
	MS	2210023-01	ND	27.182	100.00	mg/kg		27.2		16 - 119	
	MSD	2210023-01	ND	30.554	100.00	mg/kg	11.7	30.6	20	16 - 119	
Arsenic	DUP	**2210023-01**	**1.5972**	**2.5959**		**mg/kg**	**47.6**		**20**		**A02**
	MS	**2210023-01**	**1.5972**	**16.950**	**20.000**	**mg/kg**		**76.8**		**75 - 125**	
	MSD	**2210023-01**	**1.5972**	**18.000**	**20.000**	**mg/kg**	**6.0**	**82.0**	**20**	**75 - 125**	
Barium	DUP	2210023-01	38.583	39.484		mg/kg	2.3		20		
	MS	2210023-01	38.583	127.49	100.00	mg/kg		88.9		75 - 125	
	MSD	2210023-01	38.583	124.96	100.00	mg/kg	2.0	86.4	20	75 - 125	
Beryllium	DUP	2210023-01	0.15133	0.14796		mg/kg	2.3		20		J
	MS	2210023-01	0.15133	8.2146	10.000	mg/kg		80.6		75 - 125	
	MSD	2210023-01	0.15133	8.3042	10.000	mg/kg	1.1	81.5	20	75 - 125	
Cadmium	DUP	2210023-01	0.21313	0.20953		mg/kg	1.7		20		J
	MS	2210023-01	0.21313	8.4448	10.000	mg/kg		82.3		75 - 125	
	MSD	2210023-01	0.21313	8.7214	10.000	mg/kg	3.2	85.1	20	75 - 125	
Chromium	DUP	2210023-01	20.082	20.177		mg/kg	0.5		20		
	MS	2210023-01	20.082	100.76	100.00	mg/kg		80.7		75 - 125	
	MSD	2210023-01	20.082	101.39	100.00	mg/kg	0.6	81.3	20	75 - 125	
Cobalt	DUP	2210023-01	4.2659	4.2970		mg/kg	0.7		20		J
	MS	2210023-01	4.2659	86.719	100.00	mg/kg		82.5		75 - 125	
	MSD	2210023-01	4.2659	87.775	100.00	mg/kg	1.2	83.5	20	75 - 125	
Copper	DUP	2210023-01	10.472	10.216		mg/kg	2.5		20		
	MS	2210023-01	10.472	95.304	100.00	mg/kg		84.8		75 - 125	
	MSD	2210023-01	10.472	95.828	100.00	mg/kg	0.5	85.4	20	75 - 125	
Lead	DUP	2210023-01	2.9235	3.3008		mg/kg	12.1		20		J
	MS	2210023-01	2.9235	87.680	100.00	mg/kg		84.8		75 - 125	
	MSD	2210023-01	2.9235	90.181	100.00	mg/kg	2.8	87.3	20	75 - 125	
Molybdenum	DUP	**2210023-01**	**0.52194**	**0.28969**		**mg/kg**	**57.2**		**20**		**J,A02**
	MS	**2210023-01**	**0.52194**	**80.554**	**100.00**	**mg/kg**		**80.0**		**75 - 125**	
	MSD	**2210023-01**	**0.52194**	**83.786**	**100.00**	**mg/kg**	**3.9**	**83.3**	**20**	**75 - 125**	
Nickel	DUP	2210023-01	15.668	15.823		mg/kg	1.0		20		
	MS	2210023-01	15.668	97.508	100.00	mg/kg		81.8		75 - 125	
	MSD	2210023-01	15.668	97.931	100.00	mg/kg	0.4	82.3	20	75 - 125	
Selenium	DUP	2210023-01	ND	ND		mg/kg			20		
	MS	2210023-01	ND	16.188	20.000	mg/kg		80.9		75 - 125	
	MSD	2210023-01	ND	16.231	20.000	mg/kg	0.3	81.2	20	75 - 125	
Silver	DUP	2210023-01	0.13509	ND		mg/kg			20		
	MS	2210023-01	0.13509	8.5006	10.000	mg/kg		83.7		75 - 125	
	MSD	2210023-01	0.13509	8.5353	10.000	mg/kg	0.4	84.0	20	75 - 125	

TRC
1850 Gateway Blvd, Suite 1000
Concord, CA 94520

Reported: 05/10/2022 9:23
Project: Rix Park
Project Number: 491274.000001
Project Manager: Gary Lieberman

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B138706	Used client sample: N										
Thallium	DUP	2210023-01	ND	ND		mg/kg			20		
	MS	2210023-01	ND	90.887	100.00	mg/kg		90.9		75 - 125	
	MSD	2210023-01	ND	91.739	100.00	mg/kg	0.9	91.7	20	75 - 125	
Vanadium	DUP	2210023-01	20.481	20.481		mg/kg	0.0		20		
	MS	2210023-01	20.481	101.06	100.00	mg/kg		80.6		75 - 125	
	MSD	2210023-01	20.481	102.95	100.00	mg/kg	1.8	82.5	20	75 - 125	
Zinc	DUP	2210023-01	26.204	26.320		mg/kg	0.4		20		
	MS	2210023-01	26.204	110.65	100.00	mg/kg		84.4		75 - 125	
	MSD	2210023-01	26.204	110.79	100.00	mg/kg	0.1	84.6	20	75 - 125	
QC Batch ID: B139199	Used client sample: N										
Mercury	DUP	2210744-05	ND	ND		mg/kg			20		
	MS	2210744-05	ND	0.65538	0.76923	mg/kg		85.2		80 - 120	
	MSD	2210744-05	ND	0.64923	0.76923	mg/kg	0.9	84.4	20	80 - 120	

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Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A02	The difference between duplicate readings is less than the quantitation limit.
A10	Detection and quantitation limits were raised due to matrix interference.
A52	Chromatogram not typical of diesel.
A57	Chromatogram not typical of motor oil.
M01	Analyte detected in the Method Blank at or above the PQL.
S09	The surrogate recovery for this compound was not within the control limits.
S11	The analyte in the Method Blank is greater than the laboratory PQL but the sample result is greater than 10 times the Method Blank.