CITY OF LA HABRA
PUBLIC WORKS AGREEMENT FOR
VISTA GRANDE PARK IMPROVEMENT PROJECT NO. 2-P-22

THIS AGREEMENT (herein "Agreement"), is made and entered into this 18th day of October, 2023 and between the **CITY OF LA HABRA**, a municipal corporation (herein "City") and Legion Contractors, Inc. (herein "Contractor"). The parties hereto agree as follows:

W I T N E S S E T H :

A. WHEREAS, City requires the construction of various park improvements as set forth more fully in this Agreement.

B. WHEREAS, Contractor represents to City that Contractor is qualified to perform said work and has submitted a proposal to City for the same.

C. WHEREAS, City desires to have Contractor perform said services on the terms and conditions set forth herein.

D. WHEREAS, no official or employee of City has a financial interest, within the provisions of Sections 1090-1092 of the California Government Code, in the subject matter of this Agreement.

NOW, THEREFORE, for and in consideration of the mutual covenants and conditions contained herein and for good and valuable consideration, the receipt and sufficiency of which is acknowledged by both parties, City and Contractor hereby agree as follows:

1.0 DEFINITIONS

1.1 Definitions. As used in this Agreement, the following definitions shall be applicable:

(a) Contractor. Contractor shall mean Legion Contractors, Inc., a California corporation located at 18008 Sky Park Cir., Suite 290, Irvine, CA 90631.

(b) City. City shall mean the City of La Habra, a Municipal Corporation and General Law City, located at 110 E. La Habra Blvd, La Habra, California 90631.

(c) City Council. City Council shall mean the City Council of the City of La Habra.

(d) Contract Officer shall mean the person designated by the City Manager or City Engineer of City and shall have the duties set forth in Section 5.2.

(e) Services. Services shall mean the services to be performed by the Contractor pursuant to this Agreement.

(f) Satisfactory. Satisfactory shall mean satisfactory to the City Manager or his/her designee.

2.0 SERVICES OF CONTRACTOR

2.1 Scope of Services. In compliance with all terms and conditions of this Agreement, the Contractor shall provide those services specified in the Contract Specifications and Project Plans attached hereto as Exhibit "A" and incorporated herein by this reference, which services may be referred to herein as the "services" or "work" hereunder. As a material inducement to the City entering into this Agreement, Contractor represents and warrants that Contractor is a provider of first class work and services and Contractor is experienced in performing the work and services contemplated herein and, in light of such status and experience, Contractor covenants that it shall follow the highest professional standards in performing the work and services required hereunder and that all materials will be of good quality, fit for the purpose intended.

2.2 Documents Included in Contract. This contract consists of this Agreement and any Exhibits, which are incorporated herein by this reference. In the event of an inconsistency, the terms of this Agreement shall govern.

2.3 Compliance with Law. All services rendered hereunder shall be provided in accordance with all ordinances, resolutions, statutes, rules, and regulations of the City and any Federal, State or local governmental agency having jurisdiction in effect at the time service is rendered, including but not limited to, the claims procedure set forth in Public Contract Code Section 9204, a summary of which is attached to this agreement as Exhibit "D."

2.4 Licenses, Permits, Fees and Assessments. Contractor shall obtain at its sole cost and expense such licenses, permits and approvals as may be required by law for the performance of the services required by this Agreement, including registration with the Department of Industrial Relations of the State of California as required by Labor Code Section 1725.5 before commencing performance under this Agreement. Contractor shall have the sole obligation to pay for any fees, assessments and taxes, plus applicable penalties and interest, which may be imposed by law and arise from or are necessary for the Contractor's performance of the services required by this Agreement, and shall indemnify, defend and hold harmless City against any such fees, assessments, taxes penalties or interest levied, assessed or imposed against City hereunder. Contractor shall be responsible for all subcontractors' compliance with this Section 2.4.

2.5 Familiarity with Work. By executing this Contract, Contractor warrants that Contractor (a) has thoroughly investigated and considered the scope of services to be performed, (b) has carefully considered how the services should be performed, and (c) fully understands the facilities, difficulties and restrictions attending performance of the services under this Agreement. If the services involve work upon any site, Contractor warrants that Contractor has or will investigate the site and is or will be fully acquainted with the conditions there existing, prior to commencement of services hereunder. Should Contractor discover any latent or unknown conditions, which will materially affect the performance of the services hereunder, Contractor shall immediately inform the City of such fact and shall not proceed except at Contractor's risk until written instructions are received from the Contract Officer.

2.6 Standard of Performance. Contractor, its subcontractors and their employees, in the performance of Contractor's work under this Agreement shall be responsible for exercising the degree of skill and care required by customarily accepted good professional practices and procedures used in the Contractor's field.

Any costs for failure to meet the foregoing standard or to correct otherwise defective work that requires re-performance of the work, shall be borne in total by the Contractor and not by the City. The failure of a project to achieve the performance goals and objectives stated in this Agreement is not a basis for requesting

re-performance unless the work conducted by Contractor and/or its subcontractors is deemed by the City to have failed the foregoing standard of performance.

In the event Contractor fails to perform in accordance with the above standard:

1. Contractor will re-perform, at its own expense, any task which was not performed to the reasonable satisfaction of City. Any work re-performed pursuant to this paragraph shall be completed within the time limitations originally set forth for the specific task involved. Contractor shall work any overtime required to meet the deadline for the task at no additional cost to the City;

2. The City shall provide a new schedule for the re-performance of any task pursuant to this paragraph in the event that re-performance of a task within the original time limitations is not feasible; and

3. The City shall have the option to direct Contractor not to re-perform any task which was not performed to the reasonable satisfaction of the City Project Manager pursuant to application of (1) and (2) above. In the event the City directs Contractor not to re-perform a task, the City shall negotiate a reasonable settlement for satisfactory work performed. No previous payment shall be considered a waiver of the City's right to reimbursement.

Nothing contained in this section is intended to limit any of the rights or remedies which the City may have under law.

2.7 Care of Work. The Contractor shall adopt reasonable methods during the life of the Agreement to furnish continuous protection to the work, and the equipment, materials, papers, documents, plans, studies and/or other components thereof to prevent losses or damages, and shall be responsible for all such damages, to persons or property, until acceptance of the work by City, except such losses or damages as may be caused by City's own negligence.

2.8 Further Responsibilities of Parties. Both parties agree to use reasonable care and diligence to perform their respective obligations under this Agreement. Both parties agree to act in good faith to execute all instruments, prepare all documents and take all actions as may be reasonably necessary to carry out the purposes of this Agreement. Unless hereafter specified, neither party shall be responsible for the service of the other. Contractor shall require all subcontractors to comply with the provisions of this agreement.

2.9 Additional Services. City shall have the right at any time during the performance of the services, without invalidating this Agreement, to order extra work beyond that specified in the Scope of Services or make changes by altering, adding to or deducting from said work. No such extra work may be undertaken unless a written change order is first given by the Contract Officer to the Contractor, incorporating therein any adjustment in (i) the Contract Sum as set forth in Section 3.1, and/or (ii) the time to perform this Agreement, which said adjustments are subject to the written approval of the Contractor. Any increase in compensation of twenty five percent (25%) or less of the Contract Sum, or in the time to perform of one hundred eighty (180) days or less may be approved by the Contract Officer. Any increases, taken either separately or cumulatively, that result in the Contract Sum exceeding $25,000 must be approved by the City Council. It is expressly understood by Contractor that the provisions of this Section shall not apply to services specifically set forth in the Scope of Services or reasonably contemplated therein. Contractor hereby acknowledges that it accepts the risk that the services to be provided pursuant to the Scope of Services may be more costly or time consuming than Contractor anticipates and that Contractor shall not be entitled to additional compensation therefore.

2.10 Prevailing Wage Laws. Contractor represents and warrants that it is registered with the Department of Industrial Relations pursuant to SB 854 and Labor Code 1725.5. Contractor shall ensure that its subcontractors comply with said requirements. In accordance with Labor Code Section 1770 et seq., the Director of the Department of Industrial Relations of the State of California has ascertained a general prevailing rate of wages, which is the minimum amount, which shall be paid to all workers employed to perform the work pursuant to this Agreement. A copy of the general prevailing wage rate determination is on file in the Office of the City Clerk and is hereby incorporated by reference into this Agreement. In accordance with the provisions of Labor Code Section 1810 et seq., eight (8) hours is the legal working day. Contractor must forfeit to the City Twenty Five Dollars ($25.00) a day for each worker who works in excess of the minimum working hours when Contractor does not pay overtime. Contractor is required to post a copy of such wage rates at all times at the contract site. The statutory penalties for failure to pay prevailing wage or to comply with State wage and hour laws will be enforced. Contractor also shall comply with State law requirements to maintain payroll records and shall provide for certified records and inspection of records as required by California Labor Code Section 1770 et. seq., including Section 1776. Contractor shall comply with all statutory requirements relating to the employment of apprentices.

3.0 COMPENSATION

3.1 Contract Sum. For the services rendered pursuant to this Agreement, the Contractor shall be compensated as specified herein, but not exceeding the maximum contract amount of Nine Million Nine Hundred Nighty Eight Thousand and Forty Fours Dollars ($9,998,044) (herein "Contract Sum"), except as provided in Section 2.9. The Contract Sum shall include the attendance of Contractor at all project meetings reasonably deemed necessary by the City; Contractor shall not be entitled to any additional compensation for attending said meetings.

3.2 Progress Payments. Prior to the first day of the month, during the progress of the work, commencing on the day and month specified in the Agreement, Contractor shall submit to the Contract Officer a complete itemized statement of all labor and materials incorporated into the work during the preceding month and the portion of the contract sum applicable thereto. Upon approval in writing by the Contract Officer, payment shall be made in thirty (30) days. City shall pay Contractor a sum based upon ninety-five percent (95%) of the contract price apportionment of the labor and materials incorporated into the work under the contract during the month covered by said statement. The remaining five percent (5%) thereof shall be retained as performance security. Refer to Section 8.4 of this Agreement for retention of funds.

4.0 PERFORMANCE SCHEDULE

4.1 Time of Essence. Time is of the essence in the performance of this Agreement. The Contractor shall have Two Hundred and Forty (240) working days from the date specified in the Notice to Proceed to complete the Project.

4.2 Schedule of Performance. Contractor shall commence the services pursuant to this Agreement upon receipt of a written notice to proceed and shall perform all services within the time period(s) established in Exhibit "A", and incorporated herein by this reference. When requested by the Contractor, extensions to the time period(s) specified in the Scope of Services may be approved in writing by the Contract Officer.

4.3 Force Majeure. The time period(s) specified in the Scope of Services for performance of the services rendered pursuant to this Agreement shall be extended because of any delays due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God or of the public enemy, unusually severe weather, fires, earthquakes, floods, epidemics, quarantine

restrictions, riots, strikes, freight embargoes, wars, litigation, and/or acts of any governmental agency, including the City, if the Contractor shall within ten (10) days of the commencement of such delay notify the Contract Officer in writing of the causes for the delay. The Contract Officer shall ascertain the facts and the extent of delay, and extend the time for performing the services for the period of the enforced delay when and if in the judgment of the Contract Officer such delay is justified. The Contract Officer's determination shall be final and conclusive upon the parties to this Agreement.

4.4 Term. Unless earlier terminated in accordance with Section 8.9 of this Agreement, this Agreement shall continue in full force and effect until final approval and acceptance of the project by the Contract Officer. Notwithstanding the foregoing, this Agreement shall terminate no later than October 16th, 2025, unless the parties mutually agree in writing to extend the term.

5.0 COORDINATION OF WORK

5.1 Representative of Contractor. The following principals of Contractor are hereby designated as being the principals and representatives of Contractor authorized to act in its behalf with respect to the work specified herein and make all decisions in connection therewith:

Amir Movafegh, President
Legion Contractors, Inc.
18008 Sky Park Cir., Suite 290,
Irvine, CA 90631

It is expressly understood that the experience, knowledge, capability and reputation of the foregoing principals were a substantial inducement for City to enter into this Agreement. Therefore, the foregoing principals shall be responsible during the term of this Agreement for directing all activities of Contractor and devoting sufficient time to personally supervise the services hereunder. For purposes of this Agreement, the foregoing principals may not be replaced nor may their responsibilities be substantially reduced by Contractor without the express written approval of City.

5.2 Contract Officer. The Contract Officer shall be such person as may be designated by the City Administrator or City Engineer of City. It shall be the Contractor's responsibility to assure that the Contract Officer is kept informed of the progress of the performance of the services and the Contractor shall refer any decisions that must be made by City to the Contract Officer. Unless otherwise specified herein, any approval of City required hereunder shall mean the approval of the Contract Officer. The Contract Officer shall have authority to sign all documents on behalf of the City required hereunder to carry out the terms of this Agreement.

5.3 Prohibition Against Assignment. The experience, knowledge, capability and reputation of Contractor, its principals and employees were a substantial inducement for the City to enter into this Agreement. Neither this Agreement nor any interest herein may be transferred, assigned, conveyed, hypothecated or encumbered voluntarily or by operation of law, whether for the benefit of creditors or otherwise, without the prior written approval of City. Transfers restricted hereunder shall include the transfer to any person or group of persons acting in concert of more than twenty five percent (25%) of the present ownership and/or control of Contractor, taking all transfers into account on a cumulative basis. In the event of any such unapproved transfer, including any bankruptcy proceeding, this Agreement shall be void. No approved transfer shall release the Contractor or any surety of Contractor of any liability hereunder without the express consent of City.

5.4 Independent Contractor. Neither the City nor any of its employees shall have any control over the manner, mode or means by which Contractor, its subcontractors, agents or employees, performs the services required herein, except as otherwise set forth herein. City shall have no voice in the selection, discharge, supervision or control of Contractor's employees, subcontractors, servants, representatives or agents, or in fixing their number, compensation or hours of service. Contractor shall perform all services required herein as an independent contractor of City and shall remain at all times as to City a wholly independent contractor with only such obligations as are consistent with that role. Contractor shall not at any time or in any manner represent that it or any of its subcontractors, agents or employees are agents or employees of City. City shall not in any way or for any purpose become or be deemed to be a partner of Contractor in its business or otherwise or a joint venture or a member of any joint enterprise with Contractor.

5.5 Identity of Persons Performing Work. Contractor represents that it employs or will employ at its own expense all personnel required for the satisfactory performance of any and all tasks and services set forth herein. Contractor represents that the tasks and services required herein will be performed by Contractor or under its direct supervision, and that all personnel engaged in such work shall be fully qualified and shall be authorized and permitted under applicable State and local law to perform such tasks and services.

5.6 Utility Relocation. City is responsible for removal, relocation, or protection of existing main or trunkline utilities to the extent such utilities were not identified in the invitation for bids or specifications. City shall reimburse contractor for any costs incurred in locating, repairing damage not caused by contractor and removing or relocating such unidentified utility facilities, including equipment idled during such work. Contractor shall not be assessed liquidated damages for delay arising from the removal or relocation of such unidentified utility facilities.

5.7 Trenches or Excavations. Pursuant to California Public Contract Code Section 7104, in the event the work included in this Agreement requires excavations more than four (4) feet in depth, the following shall apply.

(a) Contractor shall promptly, and before the following conditions are disturbed, notify City, in writing, of any: (1) material that Contractor believes may be material that is 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 provisions of existing law; (2) Subsurface or latent physical conditions at the site different from those indicated; or (3) Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.

(b) City shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do 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 shall issue a change order per Section 2.9 of this Agreement.

(c) That, in the event that a dispute arises between City and Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in Contractor’s cost of, or time required for, performance of any part of the work, Contractor shall not be excused from any scheduled completion date provided for by the contract, but shall proceed with all work to be performed under the contract. Contractor shall retain any and all rights provided either by contract or by law, which pertain to the resolution of disputes and protests between the contracting parties.

6.0 INSURANCE, INDEMNIFICATION AND BONDS

6.1 Insurance. The Contractor and all subcontractors, if any, shall procure and maintain, at its sole cost and expense, in a form and content satisfactory to City, during the entire term of this Agreement including any extension thereof, insurance as set forth in Exhibit "B" attached hereto and incorporated herein by this reference.

Conditions:

In accordance with Public Contract Code Section 20170, the insurance of surety companies who provide or issue the policy shall have been admitted to do business in the State of California with a credit rating of A- or better.

This insurance shall not be canceled, limited in scope or coverage or non-renewed until after thirty (30) days prior written notice has been given to the Public Works Director, City of La Habra, 110 E. La Habra Blvd., La Habra, California 90631.

Any insurance maintained by the City of La Habra shall apply in excess of and not combined with insurance provided by this policy.

The City of La Habra, its officers, employees, representatives, attorneys, and volunteers shall be named as additional named insureds.

Prior to commencement of any work under this contract, Contractor shall deliver to the City insurance endorsements confirming the existence of the insurance required by this contract, and including the applicable clauses referenced above.

Such endorsements shall be signed by an authorized representative of the insurance company and shall include the signator's company affiliation and title. Should it be deemed necessary by the City, it shall be Contractor's responsibility to see that the City receives documentation, acceptable to the City, which sustains that the individual signing said endorsements is indeed authorized to do so by the insurance company.

If the Contractor fails to maintain the aforementioned insurance, or secure and maintain the aforementioned endorsement, the City may obtain such insurance, and deduct and retain the amount of the premiums for such insurance from any sums due under the agreement. However, procuring of said insurance by the City is an alternative to other remedies the City may have, and is not the exclusive remedy for failure of Contractor to maintain said insurance or secure said endorsement. In addition to any other remedies the City may have upon Contractor's failure to provide and maintain any insurance or policy endorsements to the extent and within the time herein required, the City shall have the right to order Contractor to stop work hereunder, and/or withhold any payment(s) which became due to Contractor hereunder until Contractor demonstrates compliance with the requirements hereof.

Nothing herein contained shall be construed as limiting in any way the extent to which Contractor may be held responsible for payments of damages to persons or property resulting from Contractor's or its subcontractor's performance of the work covered under this agreement.

Each contract between the Contractor and any subcontractor shall require the subcontractor to maintain the same policies of insurance that the Contractor is required to maintain pursuant to this Section 6.1.

6.2 Certificates of Insurance. Contractor shall provide to City certificates of insurance showing the insurance coverages and required endorsements described above, in a form and content approved by City, prior to performing any services under this Agreement. The certificates of insurance and endorsements shall be attached to this Agreement as Exhibit "C", and are incorporated herein by this reference.

6.3 Indemnification. Contractor shall defend, indemnify, hold free and harmless the City of La Habra, its elected and appointed officials, officers, agents and employees, at Contractor's sole expense, from and against any and all actions, suits, claims, damages to persons or property, losses, costs, penalties, obligations, errors, omissions or liabilities, (herein "claims or liabilities") that may be asserted or claimed by any person, firm or entity arising or alleged to arise out of or in connection with the performance of the work, operations or activities of Contractor, its agents, employees, subcontractors, or invitees, provided for herein, or arising or alleged to arise from the negligent acts or omissions of Contractor hereunder, or arising or alleged to arise from Contractor's performance of or failure to perform any term, provision, covenant or condition of this Agreement.

(a) Contractor will defend any action or actions filed in connection with any of said claims or liabilities and will pay all costs and expenses, including legal costs and attorneys' fees incurred in connection therewith.

(b) Contractor will promptly pay any judgment rendered against the City, its officers, agents or employees for any such claims or liabilities arising or alleged to arise out of or in connection with Contractor's (or its agents', employees', subcontractors' or invitees') negligent performance of or failure to perform such work, operations or activities hereunder; and Contractor agrees to save and hold the City, its officers, agents, and employees harmless therefrom.

(c) In the event the City, its officers, agents or employees is made a party to any action or proceeding filed or prosecuted against Contractor for such damages or other claims arising or alleged to arise out of or in connection with the performance of or failure to perform the work, operation or activities of Contractor hereunder, Contractor shall pay to the City, its officers, agents or employees, any and all costs and expenses incurred by the City, its officers, agents or employees in such action or proceeding, including but not limited to, legal costs and attorneys' fees for counsel selected by City.

(d) Contractor's duty to defend and indemnify as set out in this Section 6.3 shall include any claims, liabilities, obligations, losses, demands, actions, penalties, suits, costs, expenses or damages or injury to persons or property arising or alleged to arise from, in connection with, as a consequence of or pursuant to any state or federal law or regulation regarding hazardous substances, including but not limited to the Federal Insecticide, Fungicide and Rodenticide Act ("FIFRA"), Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"), Resource Conservation and Recovery Act of 1976 ("RCRA"), the Hazardous and Solid Waste Amendments of 1984, the Hazardous Material Transportation Act, the Toxic Substances control Act, the Clean Air Act, the Clean Water Act, the California Hazardous Substance Account Act, the California Hazardous Waste Control Law or the Porter-Cologne Water Quality Control Act, as any of those statutes may be amended from time to time.

Notwithstanding the foregoing, Contractor shall not be liable for the defense or indemnification of the City for claims, actions, complaints or suits arising out of the sole active negligence or willful misconduct of the City.

The Contractor's indemnification obligations pursuant to this Section 6.3 shall survive the termination of this Agreement. Contractor shall require the same indemnification from all subcontractors.

6.4 Labor and Materials and Performance Bonds. Concurrently with execution of this Agreement, Contractor shall deliver to City a labor and materials bond and a performance bond each in the sum of the amount of this Agreement, in the forms provided by the City Clerk, which secures the faithful performance of this Agreement. The bonds shall contain the original notarized signature of an authorized officer of the surety and affixed thereto shall be a certified and current copy of his power of attorney. The bonds shall be unconditional and remain in force during the entire term of the Agreement and shall be null and void only if the Contractor promptly and faithfully performs all terms and conditions of this Agreement.

6.5 Sufficiency of Insurer or Surety. Insurance required by this Agreement shall be satisfactory only if issued by companies qualified to do business in California, rated "A" or better in the most recent edition of Best Rating Guide, The Key Rating Guide or in the Federal Register, and only if they are of a financial category Class VII or better, unless such requirements are waived by the Risk Manager of the City due to unique circumstances. In the event the Senior Management Analyst of City ("Senior Management Analyst") determines that the work or services to be performed under this Agreement creates an increased risk of loss to the City, the Contractor agrees that the minimum limits of the insurance policies required by this Section 6 may be changed accordingly upon receipt of written notice from the Senior Management Analyst; provided that the Contractor shall have the right to appeal a determination of increased coverage by the Senior Management Analyst to the City Council of City within ten (10) days of receipt of notice from the Senior Management Analyst.

6.6 Substitution of Securities. Pursuant to California Public Contract Code Section 22300, substitution of eligible equivalent securities for any monies withheld to ensure performance under the contract for the work to be performed will be permitted at the request and expense of the successful bidder.

7.0 RECORDS AND REPORTS

7.1 Reports. Contractor shall periodically prepare and submit to the Contract Officer such reports concerning the performance of the services required by this Agreement as the Contract Officer shall require. Contractor hereby acknowledges that the City is greatly concerned about the cost of work and services to be performed pursuant to this Agreement. For this reason, Contractor agrees that if Contractor becomes aware of any facts, circumstances, techniques, or events that may or will materially increase or decrease the cost of the work or services contemplated herein or, if Contractor is providing design services, the cost of the project being designed, Contractor shall promptly notify the Contract Officer of said fact, circumstance, technique or event and the estimated increased or decreased cost related thereto and, if Contractor is providing design services, the estimated increased or decreased cost estimate for the project being designed.

7.2 Records. Contractor shall keep, and require subcontractors to keep, such books and records (including but not limited to payroll records as required herein) as shall be necessary to perform the services required by this Agreement and enable the Contract Officer to evaluate the performance of such services. The Contract Officer shall have full and free access to such books and records at all times during normal business hours of City, including the right to inspect, copy, audit and make records and transcripts from such records. Such records shall be maintained for a period of three (3) years following completion of the services hereunder, and the City shall have access to such records in the event any audit is required.

7.3 Ownership of Documents. All drawings, specifications, reports, records, documents and other materials prepared by Contractor, its employees, subcontractors and agents in the performance of

this Agreement shall be the property of City and shall be delivered to City upon request of the Contract Officer or upon the termination of this Agreement, and Contractor shall have no claim for further employment or additional compensation as a result of the exercise by City of its full rights of ownership of the documents and materials hereunder. Contractor may retain copies of such documents for its own use. Contractor shall have an unrestricted right to use the concepts embodied therein. All subcontractors shall provide for assignment to City of any documents or materials prepared by them, and in the event Contractor fails to secure such assignment, Contractor shall indemnify City for all damages resulting therefrom.

7.4 Public Records Act Disclosure. Contractor has been advised and is aware that this Agreement and all reports, documents, information and data, including, but not limited to, computer tapes, discs or files furnished or prepared by Contractor, or any of its subcontractors, pursuant to this Agreement and provided to City may be subject to public disclosure as required by the California Public Records Act (California Government Code Section 6250 *et seq*.). Exceptions to public disclosure may be those documents or information that qualify as trade secrets, as that term is defined in the California Government Code Section 6254.7, and of which Contractor informs City of such trade secret. The City will endeavor to maintain as confidential all information obtained by it that is designated as a trade secret. The City shall not, in any way, be liable or responsible for the disclosure of any trade secret including, without limitation, those records so marked if disclosure is deemed to be required by law or by order of the Court.

8.0 GENERAL PROVISIONS

8.1 Governing Law. This Agreement shall be construed and interpreted both as to validity and to performance of the parties in accordance with the laws of the State of California. Legal actions concerning any dispute, claim or matter arising out of or in relation to this Agreement shall be instituted in the Superior Court of the County of Orange, State of California, or any other appropriate court in such county, and Contractor covenants and agrees to submit to the personal jurisdiction of such court in the event of such action.

8.2 Representatives. The City Administrator or his or her designee shall be the representative of City for purposes of this Agreement and may issue all consents, approvals, directives and agreements on behalf of the City, called for by this Agreement, except as otherwise expressly provided in this Agreement.

The Principal set forth in Section 5.1 above shall be the representative for Contractor for purposes of this Agreement, and shall be authorized to issue all consents, approvals, directives and agreements on behalf of Contractor called for by this Agreement, except as otherwise expressly provided in this Agreement.

8.3 Disputes. In the event either party fails to perform its obligations hereunder, the nondefaulting party shall provide the defaulting party written notice of such default. The defaulting party shall have ten (10) days to cure the default; provided that, if the default is not reasonably susceptible to being cured within said ten (10) day period, the defaulting party shall have a reasonable time to cure the default, not to exceed a maximum of thirty (30) days, so long as the defaulting party commences to cure such default within ten (10) days of service of such notice and diligently prosecutes the cure to completion; provided further that if the default is an immediate danger to the health, safety and general welfare, the defaulting party shall take such immediate action as may be necessary. Notwithstanding the foregoing, the nondefaulting party may, in its sole and absolute discretion, grant a longer cure period. Should the defaulting party fail to cure the default within the time period provided in this Section, the nondefaulting party shall have the right, in addition to any other rights the nondefaulting party may have at law or in equity, to terminate this Agreement. Compliance with the provisions of this Section 8.3 shall be a condition

precedent to bringing any legal action, and such compliance shall not be a waiver of any party's right to take legal action in the event that the dispute is not cured.

8.4 Retention of Funds. Progress payments shall be made in accordance with the provisions of Section 3.2 of this Agreement. In accordance with said section, City shall pay Contractor a sum based upon ninety-five percent (95%) of the contract price apportionment of the labor and materials incorporated into the work under the contract during the month covered by said statement. The remaining five percent (5%) thereof shall be retained as performance security to be paid to the Contractor within sixty (60) days after final acceptance of the work by the City Council, after Contractor shall have furnished City with a release of all undisputed contract amounts if required by City. In the event there are any claims specifically excluded by Contractor from the operation of the release, the City may retain proceeds (per Public Contract Code 7107) of up to 150% of the amount in dispute. City's failure to deduct or withhold shall not affect Contractor's obligations hereunder.

8.5 Waiver. No delay or omission in the exercise of any right or remedy by a nondefaulting party on any default shall impair such right or remedy or be construed as a waiver. A party's consent to or approval of any act by the other party requiring the party's consent or approval shall not be deemed to waive or render unnecessary the other party's consent to or approval of any subsequent act. Any waiver by either party of any default must be in writing and shall not be a waiver of any other default concerning the same or any other provision of this Agreement.

8.6 Rights and Remedies. Rights and Remedies are cumulative except with respect to rights and remedies expressly declared to be exclusive in this Agreement, the rights and remedies of the parties are cumulative and the exercise by either party of one or more of such rights or remedies shall not preclude the exercise by it, at the same or different times, of any other rights or remedies for the same default or any other default by the other party.

8.7 Legal Action. In addition to any other rights or remedies, either party may take legal action, in law or in equity, to cure, correct or remedy any default, to recover damages for any default, to compel specific performance of this Agreement, to obtain declaratory or injunctive relief, or to obtain any other remedy consistent with the purposes of this Agreement.

8.8 Liquidated Damages. Since the determination of actual damages for any delay in performance of this Agreement would be extremely difficult or impractical to determine in the event of a breach of this Agreement, the Contractor and its sureties shall be liable for and shall pay to the City Five Thousand Four Hundred Dollars ($5,400.00) as liquidated damages for each calendar day of delay in the performance of any service required hereunder, as specified in the Scope of Services (Exhibit A). The City may withhold from any monies payable on account of services performed by the Contractor any accrued liquidated damages.

8.9 Termination for Default of Contractor. If termination is due to the failure of the Contractor to fulfill its obligations under this Agreement, Contractor shall vacate any City owned property which Contractor is permitted to occupy hereunder and City may, after compliance with the provisions of Section 8.3, take over the work and prosecute the same to completion by contract or otherwise, and the Contractor shall be liable to the extent that the total cost for completion of the services required hereunder exceeds the compensation herein stipulated (provided that the City shall use reasonable efforts to mitigate such damages), and City may withhold any payments to the Contractor for the purpose of setoff or partial payment of the amounts owed the City as previously stated.

8.10 Notice. Any notice, demand, request, document, consent, approval, or communication either party desires or is required to give to the other party or any other person shall be in

writing and shall be deemed to be given when served personally or deposited in the US Mail, prepaid, first-class mail, return receipt requested, addressed as follows:

To City: City of La Habra
110 E. La Habra Blvd
La Habra, California 90631
Attn.: Albert Mendoza

To Contractor:

Amir Movafegh, President
Legion Contractors, Inc.
18008 Sky Park Cir., Suite 290,
Irvine, CA 90631

8.11 Non-liability of City Officers and Employees. No officer or employee of the City shall be personally liable to the Contractor, or any successor in interest, in the event of any default or breach by the City or for any amount which may become due to the Contractor or to its successor, or for breach of any obligation of the terms of this Agreement.

8.12 Conflict of Interest. The Contractor warrants that it has not paid or given and will not pay or give any third party any money or other consideration for obtaining this Agreement.

Contractor and its officers, employees, associates and subcontractors, if any, will comply with all conflict of interest statutes of the State of California applicable to Contractor's services under this agreement, including, but not limited to, the Political Reform Act (Government Code Sections 81000, *et seq*.) and Government Code Section 1090. During the term of this Agreement, Contractor and its officers, employees, associates and subcontractor shall not, without the prior written approval of the City Representative, perform work for another person or entity for whom Contractor is not currently performing work that would require Contractor or one of its officers, employees, associates or subcontractors to abstain from a decision under this Agreement pursuant to a conflict of interest statute.

8.13 Covenant Against Discrimination. Contractor covenants that, by and for itself, its heirs, executors, assigns, and all persons claiming under or through them, that there shall be no discrimination against or segregation of, any person or group of persons on account of race, color, creed, religion, sex, marital status, national origin, or ancestry in the performance of this Agreement. To the extent required by law, contractor shall take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to their race, color, creed, religion, sex, marital status, national origin, or ancestry.

8.14 Interpretation. The terms of this Agreement shall be construed in accordance with the meaning of the language used and shall not be construed for or against either party by reason of the authorship of this Agreement or any other rule of construction which might otherwise apply.

8.15 Severability. In the event that any one or more of the phrases, sentences, clauses, paragraphs, or sections contained in this Agreement shall be declared invalid or unenforceable by a valid judgment or decree of a court of competent jurisdiction, such invalidity or unenforceability shall not affect any of the remaining phrases, sentences, clauses, paragraphs, or sections of this Agreement which are hereby declared as severable and shall be interpreted to carry out the intent of the parties hereunder unless the invalid

provision is so material that its invalidity deprives either party of the basic benefit of their bargain or renders this Agreement meaningless.

8.16 [reserved]

8.17 Unfair Business Practices Claims. In entering into a public works contract or a subcontract to supply goods, services or materials pursuant to a public works contract, the contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2, (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body renders final payment to the contractor without further acknowledgment by the parties. (Sec. 7103.5, California Public Contract Code).

8.18 Corporate Authority. The persons executing this Agreement on behalf of the parties hereto warrant that (i) such party is duly organized and existing, (ii) they are duly authorized to execute and deliver this Agreement on behalf of said party, (iii) by so executing this Agreement, such party is formally bound to the provisions of this Agreement, and (iv) the entering into this Agreement does not violate any provision of any other Agreement to which said party is bound.

8.19 PERS Eligibility Indemnification. In the event that Contractor or any employee, agent, or subcontractor of Contractor providing services under this Agreement claims or is determined by a court of competent jurisdiction or the California Public Employees Retirement System (PERS) to be eligible for enrollment in PERS as an employee of the City, Contractor shall indemnify, defend, and hold harmless City for the payment of any employee and/or employer contributions for PERS benefits on behalf of Contractor or its employees, agents, or subcontractors, as well as for the payment of any penalties and interest on such contributions, which would otherwise be the responsibility of City.

Notwithstanding any other agency, state or federal policy, rule, regulation, law or ordinance to the contrary, Contractor and any of its employees, agents, and subcontractors providing service under this Agreement shall not qualify for or become entitled to, and hereby agree to waive any claims to, any compensation, benefit, or any incident of employment by City, including but not limited to eligibility to enroll in PERS as an employee of City and entitlement to any contribution to be paid by City for employer contribution and/or employee contributions for PERS benefits.

8.20 Cooperation. In the event any claim or action is brought against City relating to Contractor's performance or services rendered under this Agreement, Contractor shall render any reasonable assistance and cooperation which City might require.

8.21 Legal Responsibilities. The Contractor shall keep itself informed of City, State, and Federal laws, ordinances and regulations, which may in any manner affect the performance of its services pursuant to this Agreement. The Contractor shall at all times observe and comply with all such laws, ordinances and regulations. Neither the City, nor its officers, agents, or employees shall be liable at law or in equity as a result of the Contractor's failure to comply with this section.

8.22 Termination for Convenience. The City may terminate this Agreement without cause for convenience of the City upon giving contractor 30 days prior written notice of termination of the Agreement. Upon receipt of the notice of termination the Contractor shall cease all further work pursuant to the Agreement. Upon such termination by the City the Contractor shall not be entitled to any other remedies, claims, actions,

profits, or damages except as provided in this paragraph. Upon the receipt of such notice of termination Contractor shall be entitled to the following compensation:

1. The contract value of the work completed to and including the date of receipt of the notice of termination, less the amount of progress payments received by contractor.

2. Actual move-off costs including labor, rental fees, equipment transportation costs, the costs of maintaining on-site construction office for supervising the mover-off.

3. The cost of materials custom made for this Agreement which cannot be used by the Contractor in the normal course of his business, and which have not been paid for by City in progress payments.

4. All costs shall not include any markups as might otherwise be allowed by any plans or specifications which were a part of the Agreement.

The provisions of this paragraph shall supersede any other provision of the Agreement or any provision of any plans, specification, addendums or other documents which are or may become a part of this Agreement. City and Contractor agree that the provisions of this paragraph are a substantive part of the consideration for this Agreement.

8.23 Responsibility for Errors. Contractor shall be responsible for its work and results under this Agreement. Contractor, when requested, shall furnish clarification and/or explanation as may be required by the City's representative, regarding any services rendered under this Agreement at no additional cost to City. In the event that an error or omission attributable to Contractor occurs, then Contractor shall, at no cost to City, provide all necessary design drawings, estimates and other Contractor professional services necessary to rectify and correct the matter to the sole satisfaction of City and to participate in any meeting required with regard to the correction.

8.24 Order of Precedence. In the event of an inconsistency in this Agreement and any of the attached Exhibits, the terms set forth in this Agreement shall prevail. If, and to the extent this Agreement incorporates by reference any provision of any document, such provision shall be deemed a part of this Agreement. Nevertheless, if there is any conflict among the terms and conditions of this Agreement and those of any such provision or provisions so incorporated by reference, this Agreement shall govern over the document referenced.

8.25 Costs. Each party shall bear its own costs and fees incurred in the preparation and negotiation of this Agreement and in the performance of its obligations hereunder except as expressly provided herein.

8.26 No Third Party Beneficiary Rights. This Agreement is entered into for the sole benefit of City and Contractor and no other parties are intended to be direct or incidental beneficiaries of this Agreement and no third party shall have any right in, under or to this Agreement.

8.27 Headings. Paragraphs and subparagraph headings contained in this Agreement are included solely for convenience and are not intended to modify, explain or to be a full or accurate description of the content thereof and shall not in any way affect the meaning or interpretation of this Agreement.

8.28 Construction. The parties have participated jointly in the negotiation and drafting of this Agreement. In the event an ambiguity or question of intent or interpretation arises with respect to this Agreement, this Agreement shall be construed as if drafted jointly by the parties and in accordance with its fair meaning. There shall be no presumption or burden of proof favoring or disfavoring any party by virtue of the authorship of any of the provisions of this Agreement.

8.29 Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original. All counterparts shall be construed together and shall constitute one agreement.

8.30 Funding Source Conditions – Contractor's Obligation. Contractor acknowledges that the City may be paying for the Project by using funds it receives or will receive from various funding sources in the form of grants and/or subsidies, and the like under certain terms and conditions. Contractor acknowledges and agrees that any failure of the Contractor and/or its subcontractors to perform its obligations under the Contract, including, but not limited to, timely submitting accurate reports and records, that in any way results in the City not meeting the terms and conditions placed on the funds by the funding source, or forfeiting its entitlement to or, otherwise, not receiving, the funds, then the Contractor shall be liable to pay the City for the funds not granted to the City on the Project.

8.31 Entire Agreement. This Agreement constitutes the entire agreement between the parties with respect to any matter referenced herein and supersedes any and all other prior writings and oral negotiations. This Agreement may be modified only in writing, and signed by the parties in interest at the time of such modification. The terms of this Agreement shall prevail over any inconsistent provision in any other contract document appurtenant hereto, including exhibits to this Agreement.

IN WITNESS WHEREOF, the parties have executed and entered into this Agreement as of the date first written above.

CITY OF LA HABRA,
A municipal corporation

_____ Date: _____
Jim Sadro, City Manager

CONTRACTOR

_____ Date: _____
Signature

_____
Name and Title

_____
Social Security or Taxpayer ID Number

ATTEST:

_____ Date: _____
Rhonda J. Barone, City Clerk

APPROVED AS TO FORM:

_____ Date: _____
Richard D. Jones, City Attorney

(Use of City Bond Form is Required)

LABOR AND MATERIAL PAYMENT BOND
PUBLIC WORK (CALIFORNIA)

KNOW ALL MEN BY THESE PRESENT:

WHEREAS, _____, as Principal, has entered into a contract dated _____, with the City of La Habra (Obligee) referred to and made a part hereof to perform the following work, to wit: _____ and all appurtenant work in accordance with PROJECT NO. _____, which requires Principal to file this bond to secure claims made in relation to the project.

NOW THEREFORE, we, _____, as Principal, and _____, a corporation organized under the laws of _____ and duly authorized to transact business in the State of California, as Surety, are held firmly bound unto the City of La Habra, as Obligee, and all sub-contractors, laborers, material persons and other persons employed in the performance of the referenced agreement, in the sum of _____ Dollars ($ .00), lawful money of the United States of America, for the payment whereof well and truly to be made the Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

If the above bounden PRINCIPAL, his or its heirs, executors, administrators, successors, assigns, or any of his or its sub-contractors, fails to pay for any materials, provisions, provender, or other supplies, or teams, implements or machinery, used in, upon, for or about the performance of the work contracted to be done, or for any work or labor to persons named in Section 9100 or the Civil Code, thereon of any kind, or for amounts due under the Unemployment Insurance Code with respect to such work or labor deducted, withheld and paid over to the Employment Development Department from the wages of employees of the contractor and sub-contractors pursuant to Section 13020 of the Unemployment Insurance Code, that the SURETY on this bond will pay the same, in an amount not exceeding the sum specified in this bond, AND ALSO, in case suit is brought upon this bond, a reasonable attorney's fee, which shall be awarded by the court to the prevailing party in said suit, said attorney's fee to be taxed as costs in said suit and to be included in the judgment herein rendered.

As part of the obligation secured hereby, the SURETY shall not be exonerated or released from the obligation of the bond by any change, alteration, or modification in or of any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement or pertaining or relating to the furnishing of labor, materials, or equipment therefor, nor by any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any scheme of work of improvement, nor by any rescission or attempted rescission of the contract, agreement or bond, nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under

any such contract or agreement, or under the bond, nor, where the bond is given for the benefit of claimants, by any fraud practiced by any person other than the claimant seeking to recover on the bond.

This bond shall inure to the benefit of any and all persons, companies and corporations entitled to file claims under the Civil Code so as to give them a right of action in a suit on this bond.

This bond is executed for the purpose of complying with the laws of the State of California and shall inure to the benefit of any of the persons named in Section 9100 of the Civil Code of the State of California.

IN WITNESS THEREOF, we have hereunto set our hands and seals this _____ day of _____, 20__.

(Corporate Seal)

_____
Principal

By_____

Title_____

(Corporate Seal)

_____
Principal

By_____

Title_____

APPROVED AS TO FORM:
/s/ Richard D. Jones
City Attorney

FAITHFUL PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That we,_____

_____hereinafter referred to as

"Contractor", as principal, and_____

_____as surety, are held and firmly

bound unto City of La Habra in the sum of _____

_____

Lawful money of the United States of America for the payment of which sum well and truly to be made we bind ourselves jointly and severally, firmly by these presents.

The condition of the foregoing obligation is such that WHEREAS, said Contract has been awarded and is about to enter into the annexed contract with City of La Habra for construction of Street Improvements as specifically set forth in the documents entitled:

VISTA GRANDE PARK IMPROVEMENT PROJECT
CITY PROJECT NO. 2-P-22

and is required under the terms of the Contract to give this bond in connection with the execution of said contract.

NOW, THEREFORE, if the said Contractor shall well and truly do and perform all of the covenants and obligations of said contract on his part to be done and performed at the times and in the manner specified herein, then this obligation shall be null and void, otherwise it shall be and remain in full force and effect.

PROVIDED, that any alterations in the work to be done or the materials to be furnished which may be made pursuant to the terms of said Contract shall not in any way release either the Contractor or the surety thereunder nor shall any extensions of time granted under the provisions of said Contract release either the Contractor or the surety, and notice of such alterations or extensions of the Contract is hereby waived by the surety.

WITNESS our hands this_____day of_____, 2023.

_____
Contractor

BY: _____

(Seal)

_____
Title

APPROVED:

_____
Surety

_____ BY: _____
(Seal)

Mailing Address of Surety:

_____

_____

_____

_____
Telephone Number of Surety

Project No 2-P-22

(Use of City form is required)

SUPPLEMENTAL INFORMATION TO BE COMPLETED BY PRINCIPAL

If an individual, so state. If a firm or co-partnership, state the firm and give the names of all individual co-partners composing the partnership. If a Corporation, state legal name of corporation; state also the names of the president, secretary, treasurer and manager thereof.

_____
_____
_____

Business Address: _____
_____
_____

Telephone Number: _____

Date: _____

Print Name: _____
Principal

Signature: _____
Title

Project No 2-P-22

(Use of City form
is required)

TAX IDENTIFICATION NUMBER

The Tax Equity and Fiscal Responsibility Act of 1982 requires the payer (City of La Habra) to report to the Internal Revenue Service taxable payments to payees.

You (as a payee) are required by law to provide us with your Taxpayer Identification Number (if an individual or partnership, your Social Security Number). If you do not provide us with your correct identification number, you may be subject to a penalty imposed by the Internal Revenue Service. The payments subject to withholdings may include, but are not limited to, interest, dividends, or other payments the City of La Habra made to you. Other payments may include rents, royalties, commissions and fees for service of non-employees.

If you are exempt from income tax, we are still required, by law, to maintain a Tax Identification Number on file. **PLEASE PROVIDE YOUR TAX IDENTIFICATION NUMBER next to the appropriate listing below, sign, date and return to:**

CITY OF LA HABRA FINANCE DEPARTMENT
110 E. La Habra Blvd
La Habra, CA 90631

Exempt: Yes___ No___ Telephone ( ) _____

CORPORATION:_____

U.S.A. OR ANY AGENCIES THEREOF:_____

IRS CODE #501 TAX-EXEMPT ORGANIZATION:_____

A NON-COMMISSIONED CITY OF LA HABRA EMPLOYEE:_____

SOLE PROPRIETOR:_____

A PARTNERSHIP:_____

OTHER: _____(Explain)

Signature/Title: _____ Date:_____

BID GUARANTEE

TO THE CITY OF LA HABRA
PROJECT NO. 2-P-22

As a material inducement to the City to award the contract for Project No. _____to _____, the undersigned ("Guarantor") has agreed to enter into this guarantee. The Guarantor hereby unconditionally guarantees to the fullest extent allowed by law the following work included in this project: _____("the work").

Guarantor guarantees that the materials and equipment used by itself and its subcontractors will be free from defects and that the work will conform to the plans and specifications. Should any of the materials or equipment prove defective or should the work as a whole, or any part thereof, prove defective for any reason whatsoever (except due to intentional torts by the City), or should the work as a whole or any part thereof fail to operate properly or fail to comply with the plans and specifications, Guarantor will, at the City's sole election: 1) reimburse the City, upon written demand, for all of the City's expenses incurred replacing or restoring any such equipment or materials, including the cost of any work necessary to make such replacement or repairs; or 2) replace any such defective material or equipment and repair said work completely, all without any cost to the City. Guarantor further guarantees that any such repair work will conform to the plans and specifications for the project. This guarantee will remain in effect for five years from the date on which the contracted for work is accepted for use by the City.

Guarantor understands and agrees that the City shall have the unqualified option to make any replacements or repairs itself or to have such replacement, repair, performed by the undersigned. The City shall have no obligation to consult with Guarantor before the City proceeds to perform any repair, replacement, or work itself. If the City elects to have Guarantor perform said repair, replacement, or work, Guarantor agrees that the repair, replacement, or work shall be performed within 15 days after receipt of a written demand from the City.

If the City elects to perform the replacement, repairs itself, Guarantor agrees to make reimbursement payment within 15 days after receipt of a written demand for payment from the City.

If the Guarantor fails or refuses to comply with this guarantee, the City shall be entitled to all costs and expenses, including attorneys and expert fees, reasonably incurred by reason of Guarantor's failure or refusal.

Guarantor Date:_____

Contractor:_____ By:_____

Title:_____

Project No 2-P-22

STATEMENT OF NON COLLUSION BY CONTRACTOR

The undersigned who submits herewith to the City of La Habra a bid or proposal does hereby certify:

a. That all statements of fact in such bid or proposal are true;
b. That such bid or proposal was not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization or corporation;
c. That such bid or proposal is genuine and not collusive or sham;
d. That said bidder has not, directly or indirectly by agreement, communication or conference with anyone, attempted to induce action prejudicial to the interest of the City of La Habra or of any other bidder or anyone else interested in the proposed procurement;
e. Did not, directly or indirectly, collude, conspire, connive or agree with anyone else that said bidder or anyone else would submit a false or sham bid or proposal, or that anyone should refrain from bidding or withdraw his bid or proposal;
f. Did not in any manner, directly or indirectly seek by agreement, communication or conference with anyone to raise or fix the bid or proposal price of said bidder or of anyone else, or to raise or fix any overhead, profit or cost element of his bid or proposal price, or that of anyone else;
g. Did not, directly or indirectly, submit his bid or proposal price or any breakdown thereof, or the contents thereof, or divulge information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member agent thereof, or to any individual or group of individuals, except to the City of La Habra, or to any person or persons who have a partnership or their financial interest with said bidder in his business.
h. Did not provide, directly or indirectly to any officer or employee of the City of La Habra any gratuity, entertainment, meals, or anything of value, whatsoever, which could be objectively construed as intending to invoke any form of reciprocation or favorable treatment.
i. That no officer or principal of the undersigned firm is related to any officer or employee of the city by blood or marriage within the third degree or is employed, either full or part time, by the City of La Habra either currently or within the last two (2) years.
j. That no officer or principal of the undersigned firm nor any subcontractor to be engaged by the principal has been convicted by a court of competent jurisdiction of any charge of fraud, bribery, collusion, conspiracy or any other act in violation of any state or federal antitrust law in connection with the bidding upon award of, or performance of, any public work contract, with any public entity, within the last three years.

I certify, under penalty of perjury under the laws of the State of California, that the foregoing is true and correct and that this certification was executed:

On_____at_____California.

Firm_____ _____
(Signature)

Street_____ _____
(Print Name & Title)

City_____State_____Zip_____

CERTIFICATION OF COMPLIANCE

AFFIRMATIVE ACTION REQUIREMENTS

EQUAL EMPLOYMENT OPPORTUNITY

For
VISTA GRANDE PARK IMPROVEMENT
CITY PROJECT NO. 2-P-22

_____Certifies that:
(Contractor)

It has adopted and approved affirmative action plan in compliance with Title VII of the Civil Rights Act and the Equal Employment Opportunity Act of 1972 and agrees to submit a copy of that plan to the Assistant to the City Manager/Personnel of the City of La Habra for inspection prior to the award of contract.

Signed: _____

By: _____

Title: _____

Date: _____

EXHIBIT A

SCOPE OF SERVICES

BID PROPOSAL

City of La Habra
Civic Center
110 E. La Habra Blvd.
La Habra, California 90631

Dear Prospective Bidder:

The undersigned hereby proposes to perform all work for which a contract may be awarded him and to furnish any and all plant, labor, services, materials, tools, equipment, supplies, transportation, utilities, and all other items and facilities necessary therefor as provided in the Contract Documents, and to do everything required therein for the project specifically set forth in documents entitled:

"VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22"

together with appurtenances thereto, all as set forth on the drawing and in the specifications and other Contract Documents; and, he further proposes and agrees that if this Proposal is accepted he will contract in the form and manner stipulated to perform all the work called for by drawings, specifications and other Contract Documents and to complete all such work in strict conformity therewith within the time limits set forth therein, and that he will accept as full payment therefor the prices set forth in the Bid Schedule forming a part hereof.
A *~~(Cashier's Check)~~ *~~(Certified Check)~~ *(Bid Bond) properly made payable to City of La Habra hereinafter designated as the Owner for the sum of _____ Ten Percent of Total Bid Price _____ dollars ($ 10% of Total Bid), which amount is not less than ten percent (10%) of the total amount of this bid, is attached hereto and is given as a guarantee that the undersigned will execute the Agreement and furnish the required bonds if awarded the Contract; and, in case of failure to do so within the time provided the proceeds of said check shall be forfeited to the *Owner/Sureties Liability to the Owner for forfeiture of the face amount of the Bond shall be considered as established.

(*) Delete inapplicable word or phrase.

It is understood and agreed that:

1. The undersigned has carefully examined all the Contract Documents which will form a part of the Contract;
2. The undersigned has, by investigation of the site of the work and otherwise, satisfied himself as to the nature and location of the work and has fully informed himself as to all conditions and matters which can in any way affect the work or the cost thereof;

3. The undersigned fully understands the scope of the work and has checked carefully all words and figures inserted in this proposal and he further understands that the Owner will in no way be responsible for any errors or omissions in the preparation of this proposal;
4. The undersigned will execute the Agreement and furnish the required Performance and Payment Bonds and proof of insurance coverage, within ten (10) days (not including Saturdays, Sundays and holidays) after notice to him of acceptance of his bid by the Owner; and further, that this bid may not be withdrawn for a period of sixty (60) days after the date set for the opening thereof, unless otherwise required by law. If any bidder shall withdraw his bid within said period, the Contractor shall be liable under the provisions of the Bid Security or the Contract and his surety shall be liable under the Bid Bond, as the case may be;
5. The undersigned hereby certifies that this proposal is genuine and not sham or collusive or made in the interest or in behalf of any person not herein named and the undersigned has not directly or indirectly induced or solicited any other bidder to put in a sham bid or any other person, firm or corporation to refrain from bidding; the undersigned has not in any manner sought by collusion to secure for himself an advantage over any other bidder;
6. In conformance with current statutory requirements of Section 1860, et seq., of the Labor Code of the State of California, the undersigned confirms the following as his certification:

> I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability of worker's compensation or to undertake self-insurance in accordance with the provisions before commencing the performance of the work of this contract.

NOW, in compliance with the Notice Inviting Bids and all the provisions hereinbefore stipulated, the undersigned, with full cognizance thereof, hereby proposes to perform the entire work for the prices set forth in the attached Bid Schedule upon which award of the Contract is made.

Date: August 30, 2023

Bidder Legion Contractors, Inc.

By _____

Amir Movafegh, President

Title President

Bidder's Post Office Address:
18008 Sky Park Cir., Suite 290

Irvine, CA 92614

Corporation organized under
the laws of the State of California

Names and addresses of all owners
of the firm or names and titles of
all officers of the corporation:

Amir Movafegh: Chief Executive Officer, Secretary, Chief Financial Officer

Address: 18008 Sky Park Cir., Suite 290, Irvine, CA 92614



(corporate seal)

BIDDER'S INFORMATION

Contractor's License No. 1061257 Expiration Date 12/31/2023

Classification of Contractor's License No. A, B, C15, C36, C61/D12, C61/D34

Contractor Legion Contractors, Inc.
(name of firm)

By  Amir Movafegh President
(signature) (title)

Business Address: 18808 Sky Park Cir., Suite 290, Irvine, CA 92614

Phone (415) 655-3535

I/We certify that the information provided above is complete and true to the best of my/our knowledge.

Legion Contractors, Inc. August 30, 2023
Contractor Date

Contractor's DIR Public Works Registration No. PW-LR-1000543172

BID SCHEDULE

VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22

ITEM No.	DESCRIPTION OF WORK	QTY	UNIT	UNIT PRICE	AMOUNT
1	Mobilization	1	LS	499,500	499,500
2	General and Supplemental Conditions	1	LS	200,000	200,000
3	Survey	1	LS	65,000	65,000
4	Record Drawings	1	LS	5,000	5,000
5	Clearing, Grubbing, Demolition and Removals	1	LS	290,000	290,000
Civil Landfill Improvements					
6	Unclassified Excavation	1,407	CY	270	379,890
7	Excavation to Unclassified Fill	17,495	CY	40	699,800
8	Curb (A1-6) Per SPPWC Plan 120-3	3,025	LF	45	136,125
9	Curb and Gutter (A2-6) Per SPPWC Plan 120-4	1,390	LF	110	152,900
10	Longitudinal Gutter Per SPPWC Plan 122-3	1,155	LF	150	173,250
11	Driveway Per SSPWC Plan 110-2	2	EA	30,000	60,000
12	Curb Ramp (Type 3) Per SSPWC Plan 111-5 and 4/C-501	13	EA	5,000	65,000
13	Curb Ramp (Type 4) Per SSPWC Plan 111-5 and 5/C-501	3	EA	5,000	15,000
14	3-inch AC over 5.5-inch CAB & Structural Subgrade (Case 2) Per 8/C-501	9,650	SF	10	96,500
15	3.5-inch AC over 9-inch CAB & Structural Subgrade (Case 1) Per 1/C-501	17,000	SF	12	204,000
16	3-inch AC over 5.5-inch CAB & Structural Subgrade (Case 1) Per 1/C-501	5,600	SF	11	61,600

17	3.5-inch AC over 9-inch CAB & Structural Subgrade (Case 2) Per 8/C-501	31,300	SF	13	406,900
18	Striping, Pavement Markings, and Signage	1	LS	45,000	45,000
19	Cross Gutter Per 1/C-502	1	LS	25,000	25,000
20	Cross Gutter Per 3/C-502	1	LS	30,000	30,000
21	Cross Gutter Per 5/C-502	1	LS	33,000	33,000
22	4-inch Thick Concrete Sidewalk	20,170	SF	18	363,060
23	Bioretention Basin A Per 1/C-503	1	EA	120,000	120,000
24	Bioretention Basin B Per 1/C-503	1	EA	120,000	120,000
25	Bioretention Basin C Per 1/C-503	1	EA	120,000	120,000
26	Stairs and Walkway Per 1/C-505	21	LF	350	7,350
27	6" to 0" Curb Transition	2	EA	3,500	7,000
28	Settlement Monument Per 2/C-502	3	EA	7,500	22,500
29	18" ID PVC Pipe Per 6/C-501	475	LF	350	166,250
30	Cleanout Per 3/C-503	10	EA	5,000	50,000
31	Overflow Structure Per 1/C-504	3	EA	10,000	30,000
32	Parkway Drain Per SPPWC Plan 151-3 and Per 4/C-503	1	LS	15,000	15,000
33	Manhole Per 4/C-505	1	EA	12,000	12,000
34	2-Inch Schedule 40 PVC Water Line Per 6/C-501	1,935	LF	60	116,100
35	Hose Bibb Per 7/C-501 (Case 1)	1	EA	5,000	5,000
36	Hose Bibb Per 7/C-502 (Case 2)	4	EA	6,000	24,000

37	6-Inch Sewer Lateral Per 3/C-504	62	LF	800	49,600
38	Handrails Per 9/C-501	210	LF	125	26,250
~~39~~	~~Building Protection System (Methane Protection Systems)~~	~~1~~	~~LS~~		
40	Hydroseed Native Mix Per Sheet C-100	90,600	SF	0.40	36,240
Well Modifications					
41	Trenching in Soil	160	LF	80	12,800
42	Trenching in Rock	40	LF	900	36,000
43	3-Inch HDPE Pipe	200	LF	150	30,000
44	Replacement Well	3	EA	25,000	75,000
45	Tracer Wire	200	LF	200	40,000
46	Concrete Vaults	9	EA	15,000	135,000
Split Large / Small Dog Park					
46A	6'-0" High ClearVu Fence and Gate	820	LF	280	229,600
Walking / Running Trail					
47	10'-0" Wide ~~D.G. Trail~~ Concrete	1,364	LF	75	102,300
48	Headers-Aluminum	2,728	LF	18	49,104
Sport Courts					
49	Volleyball Court w/ 30' X 60' Court w/ Sand, Posts and Net	1	LS	75,000	75,000
50	Basketball Court w/ Pole, Backstop and Stripping (Assume Concrete)	1	LS	145,000	145,000
Tot Lot Play Area					
51	Concrete Curb	361	LF	55	19,855
52	Perimeter Fence - ClearVu Invisible Wall Fence, 4' High and Gate	361	LF	300	108,300
53	Gametime Custom Playground Equipment (Labor and Materials)	1	LS	400,000	400,000
53A	Playground Surfacing	9200	SF	20	184,000

Amphitheater					
54	Stage Area w/ Concrete, Including Walls, Complete	1,256	SF	100	125,600
55	Electrical - Allowance (Assume POC is less than 400' away)	1	LS	90,000	90,000
Community Art Wall					
56	Art Wall	1	LS	50,000	50,000
Restroom/Storage Building					
57	Concrete Plaza Area	6,900	SF	30	207,000
57A	Temporary 4" Concrete Slab for Restroom footprint	1,015	SF	20	20,300
Trash Enclosure					
58	11' X 20' Building	1	LS	75,000	75,000
~~59~~	~~Driveway~~	~~131~~	~~SF~~		
Picnic Area					
60	Table and Benches w/ Concrete Pads	16	EA	7,500	120,000
61	BBQ'S	16	EA	5,000	80,000
62	Trash Receptacles	26	EA	2,500	65,000
63	Drinking Fountains	6	EA	7,500	45,000
64	Bike Racks	4	EA	4,000	16,000
Exercise Stations					
65	Exercise Equipment	10	EA	7,000	70,000
66	D.G., Concrete Pads - 10' X 10' w/ Perimeter Curbs	10	EA	6,500	65,000
Trees					
67	72" Box Tree	1	EA	8,000	8,000
68	48" Box Tree w/ Root Barrier	9	EA	4,000	36,000
69	24" Box Tree w/ Root Barrier	200	EA	400	80,000
Planting and Irrigation					

70	Hydroseed - Turf Areas	169,947	SF	0.50	84,973.50
71	Native Garden D.G. Walkways	1,010	SF	25	25,250
72	California Native Plants	8,200	SF	8	65,600
73	Metal Wood Plaques Signage With Plant Names	150	EA	100	15,000
74	Mulch - 3"	104,800	SF	0.80	83,840
75	Shrubs & Groundcover Areas	96,600	SF	0.60	57,960
76	Slope Planting Under Existing Trees Including Mulch	134,000	SF	2	268,000
77	Soil Amends	276,777	SF	0.65	179,905.05
78	Mulch Around New Trees. Other Mulch Taken Above	115	EA	40	4,600
79	Maintenance - 90 Days	1	LS	25,000	25,000
80	Benches	8	EA	5,000	40,000
81	Gazebo	1	LS	55,000	55,000
82	Irrigation For Turf Areas	169,947	SF	3	509,841
83	Irrigation For Native Garden Areas	8,200	SF	5	41,000
84	Irrigation For Shrubs & Groundcover Areas	96,600	SF	4	386,400
85	Irrigation Controller	1	EA	30,000	30,000
86	Irrigation Backflow Preventer	1	EA	17,000	17,000
Lighting and Security					
87	Safety/Security-Solar, LED	1	LS	340,000	340,000
88	Gates-Rhino Gates-Metal Pipes-4' High X 30' Wide	2	EA	20,000	40,000

TOTAL BID PRICE IN FIGURES: $ 9,998,043.55

TOTAL BID PRICE IN WORDS:

Nine Million Nine Hundred Ninety Eight Thousand Forty Three Dollars and Fifty Five Cents

Legion Contractors, Inc.

CONTRACTOR

BY

President

TITLE

August 30, 2023

DATE

ACKNOWLEDGEMENT OF ADDENDA RECEIVED

The Bidder shall acknowledge the receipt of addenda by placing an "X" by each addendum received.

Addendum No. 1 _X_
Addendum No. 2 _X_
Addendum No. 3 _X_
Addendum No. 4 _X_
Addendum No. 5 _____
Addendum No. 6 _____
Addendum No. 7 _____
Addendum No. 8 _____

If an addendum or addenda have been issued by the CITY and is not noted above as being received by the Bidder, the Bid Proposal may be rejected.



REFERENCES

[Work similar in scope magnitude and degree of difficulty completed by Contractor within the past three (3) years.]

1. Name (Firm/Agency): City of Huntington Beach

   Address: 200 Main St., Huntington Beach, CA 92648

   Contact Person: David Fait Telephone No. 714-375-5062

   Title of Project: 17th Street Park Renovation

   Project Location: 1706 Orange Ave, Huntington Beach, CA 92648

   Date of Completion: 12/03/2022 Contract Amount: $ 3,886,000

2. Name (Firm/Agency): City of Long Beach & Camp Fire Angeles

   Address: 411 W Ocean Blvd., Long Beach, CA 90802

   Contact Person: Danny Kaye Telephone No. 818-986-9870

   Title of Project: DeForest Park Discovery Trail

   Project Location: 6255 DeForest Ave., Long Beach, CA 90805

   Date of Completion: 1/25/2023 Contract Amount: $ 2,850,000

3. Name (Firm/Agency): San Jose Unified School District

   Address: 2222 Unified Way, San Jose, CA 95125

   Contact Person: Mohammed Mhanna Telephone No. 650-440-8861

   Title of Project: San Jose Schools Site & Playground Renovation

   Project Location: Multiple Schools in San Jose, CA

   Date of Completion: 2/14/2022 Contract Amount: $ 3,128,000

4. Name (Firm/Agency): City of Placentia

   Address: 401 E Chapman Ave., Placentia, CA 92870

   Contact Person: Ziad Abu Telephone No. (415) 636-1168

   Title of Project: Parque Del Arroyo Verde Renovation

   Project Location: 1001 E. Palm Dr., Placentia, CA 92870

   Date of Completion: September 2023 Contract Amount: $ 2,286,000

If Contractor has not performed work for the City of La Habra within the last five (5) years, list all work done within said five years (attach additional sheets if necessary). Note if work was done as subcontractor (include only subcontract amount):

Work Description & Contract Amount	Agency	Date Completed
Earthwork & Site Renovation - $5,234,000	Edwards Air Force Base	2020
College Renovation -$1,120,000	Glendale Community College	2020
School Exterior Renovation - $3,148,000	San Jose Unified School District	2020
Park & Playground Renovation - $1,218,000	City of Palo Alto	2022
Site Renovation & Playground - $750,000	Buena Park School District	2023

Contractor's License No.: 1061257 Class: A, B, C15, C36, C61/D12, C61/D34

a. Date first obtained: 12/11/2019 Expiration: 12/31/2023

b. Has License ever been suspended or revoked? No.

If yes, described when and why:

c. Any current claims against License or Bond? No.

If yes, describe claims:

Principals in Company (List all – attach additional sheets if necessary):

NAME	TITLE	LICENSE NO. (If Applicable)
Amir Movafegh	President, Secretary, CEO	1061257

DBE BIDDER'S LIST

All bidders/proposers are requested to provide the following information for all DBE and non-DBE contractors or consultants who provided a proposal, bid, quote, or were contacted by the proposed prime. This information is also requested from the proposed prime contractor/ consultant and should be submitted with their bid/proposal. The City of La Habra will use this information to maintain and update a "Bidders" List to assist in the overall annual DBE goal-setting process.

Firm Name: Legion Contractors, Inc. **Phone:** 415-655-3535

Address: 18008 Sky Park Cir., Suite 290, Irvine, CA 92614 **Fax:** 415-655-3535

Contact Person: Amir Movafegh **No. of years in business:** 5

Is the firm currently certified as a DBE under 49 CFR Part 26: YES: ___ **NO:** x

Type of work/services/materials provided by firm? General Contractor

What was your firm's Gross Annual receipts for last year?

Less than $1 Million
Less than $5 Million
x **Less than $10 Million**
Less than $15 Million
More than $15 Million

This form can be duplicated if necessary to report all bidders (DBEs and non-DBEs) information.

DBE BIDDER'S LIST

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Firm Name: Alcorn Fence Company **Phone:** 951-685-5871

Address: 6445 Pedley Rd., Riverside, CA 92509 **Fax:** 951-685-1641

Contact Person: Jesse Madrigal **No. of years in business:** ____

Is the firm currently certified as a DBE under 49 CFR Part 26: YES: X **NO:** ___

DBE No. 50904

Type of work/services/materials provided by firm?

Handrail, Fence, and Gates

What was your firm's Gross Annual receipts for last year?

Less than $1 Million
Less than $5 Million
Less than $10 Million
Less than $15 Million
More than $15 Million

This form can be duplicated if necessary to report all bidders (DBEs and non-DBEs) information.

DBE BIDDER'S LIST

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Firm Name: American Hydroseed **Phone:** 951-677-4018

Address: 41856 Ivy St, Ste 109, Murrieta, CA 92562 **Fax:** 951-234-7518

Contact Person: Jacob Whall **No. of years in business:** _____

Is the firm currently certified as a DBE under 49 CFR Part 26: YES: ___ **NO:** X

Type of work/services/materials provided by firm? Hydroseed

What was your firm's Gross Annual receipts for last year?

Less than $1 Million
Less than $5 Million
Less than $10 Million
Less than $15 Million
More than $15 Million

This form can be duplicated if necessary to report all bidders (DBEs and non-DBEs) information.

DBE BIDDER'S LIST

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Firm Name: Raygoza Landscaping **Phone:** 909-917-4478

Address: 2373 Los Flores St., Pomona, CA 91767 **Fax:** _____

Contact Person: Cesar Raygoza **No. of years in business:** _____

Is the firm currently certified as a DBE under 49 CFR Part 26: YES: ___ **NO:** X

Type of work/services/materials provided by firm? Landscaping

_____

What was your firm's Gross Annual receipts for last year?

Less than $1 Million
Less than $5 Million
Less than $10 Million
Less than $15 Million
More than $15 Million

This form can be duplicated if necessary to report all bidders (DBEs and non-DBEs) information.

DBE BIDDER'S LIST

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Firm Name: Onyx Paving Company **Phone:** 714-632-6699

Address: 2890 E. La Cresta Ave., Anaheim, CA 92806 **Fax:** _____

Contact Person: Joseph Nickolas **No. of years in business:** _____

Is the firm currently certified as a DBE under 49 CFR Part 26: YES: ___ **NO:** X

Type of work/services/materials provided by firm? Asphalt

What was your firm's Gross Annual receipts for last year?

Less than $1 Million
Less than $5 Million
Less than $10 Million
Less than $15 Million
More than $15 Million

This form can be duplicated if necessary to report all bidders (DBEs and non-DBEs) information.

DBE BIDDER'S LIST

All bidders/proposers are requested to provide the following information for all DBE and non-DBE contractors or consultants who provided a proposal, bid, quote, or were contacted by the proposed prime. This information is also requested from the proposed prime contractor/ consultant and should be submitted with their bid/proposal. The City of La Habra will use this information to maintain and update a "Bidders" List to assist in the overall annual DBE goal-setting process.

Firm Name: Dotz, Inc. **Phone:** (818) 271-1799

Address: 15500 Erwin St., #1011 Van Nuys, CA 91411 **Fax:** _____

Contact Person: Amin Parvin **No. of years in business:** _____

Is the firm currently certified as a DBE under 49 CFR Part 26: YES: ___ **NO:** X

Type of work/services/materials provided by firm? Grading, Electrical

What was your firm's Gross Annual receipts for last year?

Less than $1 Million
Less than $5 Million
Less than $10 Million
Less than $15 Million
More than $15 Million

This form can be duplicated if necessary to report all bidders (DBEs and non-DBEs) information.

DBE BIDDER'S LIST

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Firm Name: Robertson Industries, Inc. **Phone:** 714-904-8219

Address: 2140 E. Cedar St., Tempe, AZ 85281 **Fax:** 602-340-0402

Contact Person: Vince Brantley **No. of years in business:** _____

Is the firm currently certified as a DBE under 49 CFR Part 26: YES: ___ **NO:** X

Type of work/services/materials provided by firm? Safety Surfacing

What was your firm's Gross Annual receipts for last year?

Less than $1 Million
Less than $5 Million
Less than $10 Million
Less than $15 Million
More than $15 Million

This form can be duplicated if necessary to report all bidders (DBEs and non-DBEs) information.

VIOLATIONS OF FEDERAL, STATE, OR LOCAL LAWS

1. Has your firm or its officers been assessed any penalties by an agency for noncompliance or violations of Federal, State, or Local labor laws and/or business or licensing regulations within the past five (5) years relating to your construction projects?

Yes/No: No. Federal/State: _____

If "yes", identify and describe, (including agency and status):

_____

_____

_____

_____

_____

_____

_____

Have the penalties been paid? ~~Yes~~/No:

_____

2. Does your firm or its officers have any ongoing investigations by any public agency regarding violations of the State Labor Code, California Business and Professions Code or State Licensing Laws?

Yes/No: No. Code/Laws: _____ Section/Article: _____

If "yes", identify and describe, (including agency and status):

_____

_____

_____

_____

_____

_____

DISQUALIFICATION OR DEBARMENT

Has your firm, any officer of your firm, or any employee who has a proprietary interest in your firm ever been disqualified, removed, or otherwise prevented from bidding on, performing work on, or completing a federal, state, or local project because of a violation of law or a safety regulation?

Yes/No: No.

If yes, provide the following information (if more than once, use separate sheets):

Date: _____ Entity: _____

Location: _____

Reason: _____

_____

_____

_____

Provide Status and any Supplemental Statement:

_____

_____

_____

_____

Has your firm been reinstated by this entity?

Yes/No: _____

DEBARMENT AND SUSPENSION CERTIFICATION

TITLE 49, CODE OF FEDERAL REGULATIONS, PART 29

The bidder, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, manager:

- is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency;
- has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal agency within the past 3 years;
- does not have a proposed debarment pending; and
- has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions. The above certification is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Certification.

LIST OF SUBCONTRACTORS

VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22

The bidder shall list below the name and the location of the place of business of each Subcontractor who will perform work or render services to the prime contractor in or about the construction of the work or improvement in excess of one-half of one percent (1/2%) of the prime contractor's total bid or ten thousand dollars ($10,000.00) whichever is greater in accordance with the requirements of Section 4100 to 4133 inclusive of the public contracts code.

Work to be Performed	License & DIR No.	Subcontractor and Address of Office, Mill or Shop	% of Total Contract
Fencing & Gates	122954 - 1000001986	Alcorn Fence Company. 6445 Pedley Rd.. Riverside. CA92509	3%
Safety Surfacing	667261 - 1000002700	Robertson Industries Inc., 2140 E. Cedar St., Tempe, AZ 85281	2%
Electrical	1033830 - 1000709093	Dotz Inc. 15500 Erwin St., #1011 Van Nuys, CA 91411	3%
AC Paving	630360 - 1000004798	Onyx Paving Company, 2890 E. La Cresta Ave., Anaheim, CA 92806	1.5%
Landscape Hydroseed	888164 - 1000397799	American Hydroseed, 41856 Ivy St, Ste 109, Murrieta, CA 92562	1%
Landscaping	1017008 - 1000046245	Raygoza Landscaping - 2373 Los Flores St., Pomona, CA 91767	7%
Partial Grading	1033830 - 1000709093	Dotz Inc. 15500 Erwin St., #1011 Van Nuys, CA 91411	3%

Note: Do not list alternative subcontractors for the same work.

Contractor Legion Contractors, Inc.

BID SECURITY FORM

(Check to Accompany Bid)

NOT Applicable

(Note: The following form shall be used in case check accompanies bid.)

Accompanying this proposal is a *(Certified) *(Cashiers) check payable to the order of the City of La Habra, California, hereinafter referred to as "Owner", for

VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22

In the amount of $_____
Dollars,
this amount being ten percent (10%) of the total amount of the bid. The proceeds of this check shall become the property of said Owner provided this proposal shall be accepted by the said Owner through action if its legally constituted contracting authorities and the undersigned shall fail to execute a contract and furnish the required Performance and Payment Bonds and proof of insurance coverage within the stipulated time; otherwise, the check shall be returned to the undersigned. The proceeds of this check shall also become the property of the Owner if the undersigned shall withdraw his bid within the period of forty-five (45) days after the date set for the opening thereof unless otherwise required by law and notwithstanding the award of the Contract to another bidder.

_____

_____
Bidder

*Delete the inapplicable word.

NOTE: If the bidder desires to use a bond instead of a check, the Bid Bond form on the following pages shall be executed. The sum of this bond shall be not less than ten percent (10%) of the total amount of the bid.

Bond No.: LEGCO-167

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That we Legion Contractors, Inc. as principal and Great Midwest Insurance Company as surety, are held and firmly bound unto the City of La Habra, California hereinafter referred to as "Owner", in the sum of Ten Percent of the Total Amount Bid Dollars ($ 10% of Bid) to be paid to the said Owner, its successors and assigns for which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the certain proposal of the above bounden for the construction of Park Improvements as specifically set forth in documents entitled:

VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22

all in accordance with the specifications and drawings on file at the offices of the City Clerk of the City of La Habra, California and is not withdrawn within the period of sixty (60) days after the date set for the opening of bids unless otherwise required by law and notwithstanding the award of the Contract to another bidder and that if said proposal is accepted by the Owner through action of its legally constituted contracting authorities and if the above bounden his heirs, executors, administrators, successors and assigns shall duly enter into and execute a contract for such construction and shall execute and deliver the required Performance and Payment Bonds and proof of insurance coverage within ten (10) days (not including Saturdays, Sundays and Holidays) after the date of notification by and from the said Owner that the said contract is ready for execution, then this obligation shall become null and void; otherwise, it shall be and remain in full force and virtue.

IN WITNESS WHEREOF, we hereunto set hands and seal this 30th day of August, 2023.

Legion Contractors, Inc. "Principal"		Great Midwest Insurance Company "Surety"
By:		By:
Name:	Amir Movafegh	Name: Randy Spohn
Title:	President	Title: Attorney-in-Fact

NOTE: The standard printed bond form of any bonding company acceptable to the Owner may be used in lieu of the foregoing approved sample bond form provided the security stipulations protecting the Owner are not in any way reduced by use of the Surety Company's printed standard form.

POWER OF ATTORNEY

Great Midwest Insurance Company

KNOW ALL MEN BY THESE PRESENTS, that **GREAT MIDWEST INSURANCE COMPANY**, a Texas Corporation, with its principal office in Houston, TX, does hereby constitute and appoint:

Randy Spohn, Matthew R. Dobyns, Hamilton Kenney, Ashley M. Spohn

its true and lawful Attorney(s)-In-Fact to make, execute, seal and deliver for, and on its behalf as surety, any and all bonds, undertakings or other writings obligatory in nature of a bond.

This authority is made under and by the authority of a resolution which was passed by the Board of Directors of **GREAT MIDWEST INSURANCE COMPANY**, on the 1st day of October, 2018 as follows:

Resolved, that the President, or any officer, be and hereby is, authorized to appoint and empower any representative of the Company or other person or persons as Attorney-In-Fact to execute on behalf of the Company any bonds, undertakings, policies, contracts of indemnity or other writings obligatory in nature of a bond not to exceed Ten Million dollars ($10,000,000.00), which the Company might execute through its duly elected officers, and affix the seal of the Company thereto. Any said execution of such documents by an Attorney-In-Fact shall be as binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company. Any Attorney-In-Fact, so appointed, may be removed in the Company's sole discretion and the authority so granted may be revoked as specified in the Power of Attorney.

Resolved, that the signature of the President and the seal of the Company may be affixed by facsimile on any power of attorney granted, and the signature of the Secretary, and the seal of the Company may be affixed by facsimile to any certificate of any such power and any such power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certificate so executed and sealed shall, with respect to any bond of undertaking to which it is attached, continue to be valid and binding on the Company.

IN WITNESS THEREOF, **GREAT MIDWEST INSURANCE COMPANY**, has caused this instrument to be signed by its President, and its Corporate Seal to be affixed this 11th day of February, 2021.

GREAT MIDWEST INSURANCE COMPANY

GREAT MIDWEST INSURANCE COMPANY CORPORATE SEAL TEXAS CORPORATION

BY Mark W. Haushill

Mark W. Haushill
President

ACKNOWLEDGEMENT

On this 11th day of February, 2021, before me, personally came Mark W. Haushill to me known, who being duly sworn, did depose and say that he is the President of **GREAT MIDWEST INSURANCE COMPANY**, the corporation described in and which executed the above instrument; that he executed said instrument on behalf of the corporation by authority of his office under the By-laws of said corporation.

CHRISTINA BISHOP
Notary Public, State of Texas
Comm. Expires 04-14-2025
Notary ID 131090488

BY

Christina Bishop
Notary Public

CERTIFICATE

I, the undersigned, Secretary of **GREAT MIDWEST INSURANCE COMPANY**, A Texas Insurance Company, DO HEREBY CERTIFY that the original Power of Attorney of which the foregoing is a true and correct copy, is in full force and effect and has not been revoked and the resolutions as set forth are now in force.

Signed and Sealed at Houston, TX this 30th Day of August, 2023.

GREAT MIDWEST INSURANCE COMPANY CORPORATE SEAL TEXAS CORPORATION

BY

Leslie K. Shaunty
Secretary

"WARNING: Any person who knowingly and with intent to defraud any insurance company or other person, files and application for insurance of claim containing any materially false information, or conceals for the purpose of misleading, information concerning any fact material thereto, commits a fraudulent insurance act, which is a crime and subjects such person to criminal and civil penalties.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of CALIFORNIA

County of ORANGE

On 8/30/2023 **before me,** ERIKA G. MORGAN, NOTARY PUBLIC,

personally appeared RANDY SPOHN,

☒ who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he~~/she/they~~ executed the same in his~~/her/their~~ authorized capacity ~~(ies)~~, and that by his~~/her/their~~ signature~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

ERIKA G. MORGAN
COMM. #2354018
NOTARY PUBLIC • CALIFORNIA
ORANGE COUNTY
Comm. Expires May 5, 2025

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Erika G. Morgan

Signature of Notary

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

☐ INDIVIDUAL
☐ CORPORATE OFFICER
____
☐ PARTNER(S) ☐ LIMITED
☒ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER: ____

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)

____
____

DESCRIPTION OF ATTACHED DOCUMENT

____
____
____
____

NON-COLLUSION AFFIDAVIT

FOR

VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22

(TO BE EXECUTED BY EACH AWARDEE OF A PRINCIPAL CONTRACT)

STATE OF CALIFORNIA)
) SS.
)

Amir Movafegh, being first duly sworn,

deposes and says that he is President
(sole owner, partner, president, secretary, etc.)

of Legion Contractors, Inc.

The party making the foregoing bid; that such bid is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization or corporation; that such bid is genuine and not collusive or sham: that said bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, nor that anyone shall refrain from bidding; that said bidder has not in any manner directly or indirectly sought by agreement, communication or conference with anyone to fix the bid price of said bidder or of any other bidder, nor to fix any overhead, profit cost element of such bid price nor of that of any other bidder nor to secure any advantage against the public body awarding the contract or anyone interested in the proposed contract; that all statements contained in such bid are true; and, further, that said bidder has not directly or indirectly, submitted his bid price or any breakdown thereof, nor the contents thereof, nor divulged information or data relative thereto, nor paid and will not pay any fee in connection therewith to any corporation, partnership, company, association, organization, bid depository, nor to any member of agent thereof nor to any other individual except to such person or persons as have a partnership or other financial interest with said bidder in his general business.

Signed: _____

Title: President

Subscribed and sworn to before me

This _____day of_____, 2023.

See Attached

SEAL OF NOTARY PUBLIC

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of CALIFORNIA

County of ORANGE

On August 30th, 2023 **before me,** HAMILTON KENNEY, NOTARY PUBLIC,

personally appeared AMIR MOVAFEGH,

☒ who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his~~/her/their~~ authorized capacity ~~(ies)~~, and that by his~~/her/their~~ signature~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

ETC1 HAMILTON KENNEY ETC1
COMM. #2362677
NOTARY PUBLIC- CALIFORNIA
ORANGE COUNTY
MY COMM. Expires June 25, 2025

Hamilton Kenney
Signature of Notary

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

☐ INDIVIDUAL
☒ CORPORATE OFFICER
PRESIDENT
☐ PARTNER(S) ☐ LIMITED
☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER: ____

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)
LEGION CONTRACTORS, INC.
____

DESCRIPTION OF ATTACHED DOCUMENT

NON-COLLUSION AFFIDAVIT

____

____

WORKER'S COMPENSATION CERTIFICATE

(AS REQUIRED BY SECTION 1861
OF THE CALIFORNIA LABOR CODE)

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

Contractor Legion Contractors, Inc.

By Amir Mavaleghi

Title President

Public Contract Code Section 10285.1 Statement

In conformance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder **has ___, has not** _X_ been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Note: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Public Contract Code Section 10162 Questionnaire

In conformance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes _____ No _X_

If the answer is yes, explain the circumstances in the following space.

Public Contract Code Section 10232 Statement

In conformance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

Note: The above Statement and Questionnaire are part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Statement and Questionnaire.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

City of La Habra
"A Caring Community"

CITY HALL – ENGINEERING DIVISION

110 E. La Habra Boulevard
Post Office Box 337
La Habra, CA 90633-0785
Office: (562) 383-4151

August 10, 2023

ADDENDUM NO. 1

VISTA GRANDE PARK IMPROVEMENTS PROJECT
CITY PROJECT NO. 2-P-22

To all prospective bidders and plan holders for **VISTA GRANDE PARK IMPROVEMENTS PROJECT, CITY PROJECT NO. 2-P-22.**

The intent of this Addendum No. 1 is to make revisions, additions and/or deletions, and answer and/or clarify questions for the Vista Grande Park Improvements Project, Project No. 2-P-22; and are therefore hereby made a part of the contract bid documents.

A. **Bid Opening has been changed to: Wednesday, August 30, 2023 @ 2:00 pm.**
B. **Questions and Answers:**

1) Confirm parking lot striping is to be thermoplastic. This is not typical for parking lot striping. Lines will not be able to be striped all the way to new curb as detailed on C-501 detail 3 due to machinery required for thermoplastic.
Response: Striping and pavement markings shall be two coat paint and shall conform per Section 214-Paint for Striping and Marking of the 2021 Greenbook. Contractor to apply the second coat within one week after the first coat.

2) Could you please confirm whether this project is subject to a PLA (Project Labor Agreement), a PSA (Project Stabilization Agreement), a CBA (Collective Bargaining Agreement), a CWA (Community Workforce Agreement), or anything of that nature?
Response. This Project is not subject to PLA, PSA, CBA or CWA.

3) Which contractor constructed the original methane mitigation system?
Response. Value Engineering, Inc. of Oceanside, Ca.

4) Please confirm if this project is subject to "Buy America."
Response: This Project is not subject to "Buy America" however strongly encourage.

5) We would appreciate having CAD files for this bid. Can they be made available to bidders?
Response: CAD files will be made available to the awarded bidder.

6) Reference: DBE Bidder's List - Question: Are there DBE or DVBE Goals? If so, what % and what is the breakout by category?
Response: City does not have a specific DBE goals however it does strongly encourage the utilization of DBE subcontractors/vendors, etc.

7) Reference: Article 2.12: Contract Documents - Question: Page C-5 lists documents to be returned to the City. "Certification of Understanding and Authorization" and "Non-Segregated Facilities Certification" seem to be missing. Also, there is both a "Non-Collusion Affidavit" and a "Statement of Non-Collusion by Contractor" included. There is

also a "List of Subcontractors" and a matching form, along with a reference to a "Contractor List of Proposed Subcontractors", which is not provided. Please provide any missing documents, and clarify which forms are to be submitted with the bid.
Response:
Response: Pages D1 D25 of the Contract Documents shall be submitted with the Bid.

8) Reference: Bid Guarantee- Question: Please confirm that there is a five year guarantee on this project, and please confirm if the full contract value needs to remain fully bonded for that period.
Response: The Bid Guarantee shall remain in effect for the entire duration of the Project.

9) Reference: Exhibit B-Question: Would the City consider accepting a Builder's Risk policy for the full value of the project, coupled with lower limits on the General Liability/Umbrella, instead of the $5M/$10M Levels listed in Exhibit B? Guarantee-Question: Please confirm that there is a five year guarantee on this project, and please confirm if the full contract value needs to remain fully bonded for that period.
Response: No. Same response as Question 8 regarding the bid guarantee. Full contract value needs to remain fully bonded for that period.

10) Reference: Exhibit B - Question: The first paragraph of this page says the contractor 'shall require all of its subcontractors, consultants and other agents to maintain the insurance listed below', which includes GL limits of $5M/$10M, Auto of $5M and Pollution of $5M/$10M. These limits are inordinately high for subcontractors and consultants to meet, especially DBEs. We feel this will discourage—if not prevent—a significant percent of smaller providers from bidding this work. In juxtaposition, the City has requested a DBE Bidder's List (Page D-14) which states that the City has DBE goals. In our experience, DBE participation will be significantly hindered by these insurance levels. Please advise if reduced coverage levels can apply to subcontractors or consultants.
Response: Coverage for all subcontractors, consultants and other agents shall be per Exhibit B.

11) Reference: Bid Bond (D20)- Question: The bid bond form appears to be missing the second page, since there is nowhere for the surety to sign. Please provide. See attached
Response: Replace Bid Bond, Page D-20 of the Contract Documents with the attached revised Bid Bond, Page D-20A.

12) Reference: Instructions to Bidders & Special Provisions, 01 20 00 – Measurement & Payment 4.1-Question: Instructions to bidders says that no more than 5% of the bid should be allocated to Mobilization/Demobilization, but Special Provisions, 4.1.b. states that mobilization shall not exceed 10% of the total bid. Please clarify.
Response: Amount for Mobilization/Demobilization shall be no more than 5% of the total bid amount.

13) Reference: Section 6.01.6-Question: What is the deadline for bid protests?
Response: Bidder can protest until the contract is awarded.

14) Please provide as-built/historic drawings for the existing restroom.
Response: No records found.

15) Please provide historic/as-built drawings for the existing park and methane mitigation system.

Response: No records found.

16) Spectra Turf would like to submit our SpectraPour poured-in-place rubberized safety surfacing to be an approved equal product. Please see attached submittal for review.
Response: Please see ARTICLE 5.04 SUBSTITUTION OF EQUIVALENTS, page C-14- C-16, of the Contract Documents.

17) Please clarify the liquidated damages for the project. Under Article 7.02/C-25 of the special provisions a table is shown with values of LD's per project value, however, below it states, "If the total amount of working days have expired and the work is not complete, liquidated damages are one thousand five hundred dollars ($9,720) per calendar day,"—the written value and the number value are inconsistent.
Response: Liquidated Damages for this Project is $5,400 per calendar day.

18) Please confirm confirm/provide the engineer's estimate as it is relevant to the cost of the liquidated damages (Article 7.02/C-25, .pdf page 33/443).
Response: Engineer's Estimate: $9.4 Million.

19) What is the city's expected start date for this project after award?
Response: Plan is to start right away….as soon as Fall 2023.

20) We're a Southern California-based office that offers USA Commercial grade playground equipment and in reviewing the bid documents and specifications for Vista Grande Park Improvements, City Project No. 2-P-22, we wanted to know if there was a date on which you will accept reviews for design equal substitutions of the playground design.
Response: Please see ARTICLE 5.04 SUBSTITUTION OF EQUIVALENTS, page C-14-C-16, of the Contract Documents.

21) Is this project subject to State Prevailing Wage Rates OR Federal Davis-Bacon Wage Rates?
Response: This Project is subject to the State Prevailing Wage Rates.

An acknowledgment of receipt of this Addendum No. 1 shall be submitted with the Bid Proposal. Failure to provide such acknowledgment shall render the bid as non-responsive and subject to rejection.

BY ORDER OF THE CITY OF LA HABRA

BY: _____

Albert Mendoza, P E.
Deputy Director of Public Works /
City Engineer

Legion Contractors, Inc.

_____
Contractor (Signature)

Amir Movafegh, President
Name

August 30, 2023
Date

Enclosure(s)

City of La Habra
"A Caring Community"

CITY HALL – ENGINEERING DIVISION

110 E. La Habra Boulevard
Post Office Box 337
La Habra, CA 90633-0785
Office: (562) 383-4151

August 14, 2023

ADDENDUM NO. 2

VISTA GRANDE PARK IMPROVEMENTS PROJECT
CITY PROJECT NO. 2-P-22

To all prospective bidders and plan holders for **VISTA GRANDE PARK IMPROVEMENTS PROJECT, CITY PROJECT NO. 2-P-22.**

The intent of this Addendum No. 2 is to make revisions, additions and/or deletions, and answer and/or clarify questions for the Vista Grande Park Improvements Project, Project No. 2-P-22; and are therefore hereby made a part of the contract bid documents.

A. Questions and Answers:

1. Are nitrogen stabilized fir shavings an approved equal to Gro Mulch Amendment? I believe Gro Mulch is only sold bagged and therefore will be a lot more expensive than conventional compost or Shavings.
   Response: Submit nitrogen stabilized fir shavings product information and sample for approval during the product submittal process of the construction project.

2. Can Orange Fence be used in lieu of 8' Height Chain-link fence for tree protection?
   Response: No, Orange fence is not acceptable.

3. Can tree protection fencing be set with T Stands in lieu of footings as described on specs to be able to move fencing easier if needed?
   Response: Bidders shall base their bid on what is shown in the plans. Using t-posts may be acceptable if the City approves this as a substitution. If allowed, the Contractor will provide a credit for the cost savings.

4. Is filter fabric required for DG areas shown on detail 8/L-406? It is shown on detail 4/L-401 only.
   Response: Filter fabric shall be installed in all DG areas.

5. Can the turf alternative be bid in base bid as it is a lot more inexpensive than Kikuyu Grass. And is also available in large roll form.
   Response: Bidders shall base their bid on what is shown in the plans. Any alternatives may be considered and be found if the City approves the substitution. If any alternative is accepted, the Contractor will provide a credit for any cost savings.

6. Will the irrigation system be fusion welded?
   Response: Irrigation system installed per irrigation plans.

7. Construction note #19 (community art wall) on L-101 is pointing to the middle of the field. Please clarify if this is accurate. If it is, please specify the wall's size (height, length, and width) and materials as none are listed in the plans and specs for this structure.
   Response: It is a typo. The art wall is located next to the food track circle. Refer to Detail #7 Sheet S1.2. 39.5' length 8' high CMU wall.

8. Construction note #40 states "hydroseed native mix per sheet C-100" but Sheet C-100 does not specify a hydroseed mix. Please clarify.
   Response: The seed mix shall be as follows: Bromus carinatus (California Brome) – 8 lbs/acre, Eschscholzia californica (California Poppy) – 0.5 lbs/acre, Lasthenua californica (Dwarf Goldfields) – 0.5 lbs/acre, Plantago erecta (California Plantain) – 4 lbs/acre. Submittal of seed mix will be required for approval during construction.

9. On sheet L-401, detail number 3, shows precast pavers – what is the thickness of the aggregate base underneath the concrete slab. Please specify. Also, what is the thickness of the sand bedding under the pre-cast pavers?
   Response: Precast pavers omitted from the project.

10. The details for structural sections mention geogrid extending 5' beyond. This would be impossible if geogrid is bounded by concrete curbs. See details 1 & 8 on C-501. Please clarify.
    Response: Proposed pavement section is above structural subgrade sections shown, i.e., top of subgrade section is the foundation for concrete and AC road sections. Curb may extend into upper layer of geogrid base as necessary but shouldn't interfere with the geogrid itself.

11. Per C-106 Utility Plan, construction note #34 shows to install 6" sewer lateral. Please specify the type of pipe, i.e. PVC, clay, or HDPE, etc.
    Response: Contractor shall use HDPE pipe.

12. Per C-106 Utility Plan, please clarify the existing sewer line type, pipe, and depth for connection and protecting.
    Response: There was no information available on the existing sewer. The existing utility lines need to be determined in the field.

13. Please specify the make, model, and quantities of futsal / basketball equipment to be installed.
    Response: Gooseneck Outdoor Basketball System model '00176-820' by Porter Athletic (www.porterathletic.com), or equal. Install per manufacture instructions.

14. Please specify the fill material for the futsal / basketball court area and the depth of concrete paving for the court.
    Response: Refer to Detail #1 &2 on Sheet L-401.

15. Please specify the make, model, and quantities of volleyball court equipment to be installed. Please specify what materials will be required to enclose the volleyball sand area.

Response: Volleyball court is not enclosed. Gooseneck Outdoor Volleyball System by Porter Athletic (www.porterathletic.com), or equal. Install per manufacture instructions.

16. Will the existing palm tree near the center of the park need to be removed or protect in place?

Response: The entire project area is to be clear and grubbed in accordance with the Specifications. Sheet D-101 (Attached) has been revised to clarify the limits of the clear and grubbing. Specific removal notes are included on sheet D-101 to provide the contractor additional information but bidders shall assume all existing materials and structures within the project area shall be removed and included in the contractors bid price.

17. Per sheet C-402, per construction note 25, please specify the type of pipe to be installed for the drain pipe.

Response: Please refer to sheet C-402 for pipe type and diameter.

18. On sheet L-200, calling for a new 4" irrigation water meter, will the water department install the water meter? On the irrigation plans it states "new 4 inch separate irrigation water meter location is approximate at the present time. Final location shall be determined in the field by the owner representative." Typically, the water department installs the water meter and the contractor connects to existing from the water meter. Is this the case on this project? Also, is the water meter installation fee paid for by the owner or the contractor? If the contractor is paying for the install fee, what is the fee cost from the water department?

Response: Contractor to provide water meter and City to install. No installation fees are required

19. Regarding demolition, will all existing gravel, wood logs, asphalt paving, and swing gates within the grading limit need to removed and disposed of at the contractor's expense?

Response: Please review Section 31 10 00 of the Specifications. In accordance with this section, the Contractor is responsible for removing and disposing all objectionable material within the project area and this effort shall be paid for under the clear and grub pay item. Additionally, Sheet D-101 has been revised to clarify the limits of the clear and grubbing and is included with this addendum.

20. We refer to Sheet L-102, #PV-02, which is showing the amphitheater as PIP Rubber Surface. Please confirm.

Response: It is a typo. The amphitheater surface to be cast-in-place concrete "PV-01".

21. Please provide more information regarding the community Art Wall.

Response: Refer to Detail #7 Sheet S1.2. 39.5' length 8' high CMU wall for the art wall details.

22. We refer to sheet L-101, item #13. Please provide a location where the unit pavers are used (detail 3/L-401).

Response: Precast pavers omitted from project.

23. We refer to Sheet L-102, the Native Garden DG Walkway around the Gazebo. The hatching indicates normal Stabilized DG, however, it's called out with #PV-04 Ballfield Mx – Stabilized DG. Please confirm.
Response: It is typo. The Native Garden DG walkway to be stabilized DG.

24. Sheets L-101, #PV-01, & Sheet C-101, #22, shows the 10' path to be concrete. According to line item #47 on the bid form, it's a DG Trail. Please confirm.
Response: Line item #47 shall be a 10' wide concrete trail per the plan set. The label for the bid item has been revised in the updated bid schedule included with the plans.

25. We refer to Sheet C-105, "Construction Notes" #5, #10, #20, and #26 regarding depth of CAB to be used. Details 1/C-501 (case1) and 8/C-501 (case2) both show conflicting depths as previously mentioned in the "Construction Notes." Please confirm the depth of CAB.
Response: Structural subgrade (case 1 and 2) creates the subgrade for the road section (i.e., AC and CAB) which will be constructed above the subgrade.

26. Please confirm if each picnic table will have concrete pad, trash can, and BBQ grill with DG area. (landscape sheets show picnic pads without tables, want to confirm if that's a mistake).
Response: No. Some picnic tables will have concrete pad and trash can only. Some picnic tables will have concrete pad, trash can and BBQ grill, per plan. Refer to L-101 & L-102.

27. Please provide locations where the sandbags will be used for erosion control.
Response: The location of sandbags is often dictated by the contractors' activities and will change throughout the project construction. Therefore, BMP locations shall be per the contractor prepared SWPPP.

28. Please provide model #s for sports equipment at volleyball court and basketball.
Response: See responses to question 13 and 15 above.

29. Please provide more detail regarding bid item #73 Metal Wood Plagues Signage? ie., how many plaques of each tree, are both common and species, sizes, font, etc.
Response: 150 plaques. 3"x5" plate available from myplantlabel.com or approved equal.

30. Please confirm if Drinking Fountain Sump (detail 9/L-401) has been approved. If so, please provide how long the runs will be from fountain to sump area.
Response: This detail is provided in the event the connection to the sewer is not feasible. Contract shall assume the drain lines connect to sewer line, and that drain line and water supply line can be run in common trench.

31. There is a note for 100'+ electrical service feed for installation to follow size and wiring per utility requirements but no requirements or plans are provided. On the Single Line Diagram on E301 it mentioned a 3" conduit but again references conductor sized by utilities. Is the utility contractor providing conductors? Also, no mention of the end location of how far out we are taking the 3" utility line, 100', 200', 300' etc. foot run.
Response: The Utility Feeds need to be specified and designed by the Electrical Utility Provider. Their design will answer these questions. The client/owner needs to coordinate

with the utility company and apply for a new electrical service to initiate the process. Per bid item 55 assume the electrical service is 400 feet or less.

32. **Please provide more information about the requirements of the surveying As-Builts.**
Response: Information on Survey As builts is included in Section 01 50 00 of Specifications.

33. **Please provide detail of bid Item #88, Rhino Gates.**
Response: Gates shall match the existing entrance gates and be constructed in accordance with Standard Plan for Public Works Construction (Greenbook) detail 602-4, assume total width of 32 feet.

34. **Refer to sheet L-200, the legend of remote control valve indicated that EFB-CP series for size from 1" to 2". However, the size for RCV callout on irrigation plans are 3/4" to 2". Besides, EFB-CP series has no size 3/4" and 1 1/4". Please provide model of RCV 3/4" & 1-1/4".**
Response: All RCV shall be EFB-CP series. USE 1"/100 EFB-CP for 3/4" and 1.5" / 150-EFB-CP for the 1.25".

35. **Please provide detail for trenching of lateral line sleeve.**
Response: Refer to detail #4&5 in Sheet L-407.

36. **The model for the backflow indicated on the legend, sheet L-200 is 880V size 4" while the detail 15 on sheet L-408 require model 825YA. Moreover, the model 825YA size 4" is not available. Please clarify.**
Response: 880V size 4" is the correct size for the valve.

37. **Please provide the percentage of each type of plant shown on Grass mix of the bio-retention legend.**
Response: Carex praegracilis (30%), Chondropetalum tectorum (20%), and Juncus patens 'Elk Blue' (50%).

38. **Please provide application rate for seeding and slurry mix of hydroseed Native Mix as shown on sheet C-100.**
Response: Please see response to Question #8.

39. **Detail 7 and 8 on sheet L-409 show 4-5" organic mulch. However, note #12 on sheet L-301 shows mulch shall be 3" thick. Please clarify the depth of mulch at slope areas.**
Response: 4-5" mulch on slope planting. 3" for flat area.

40. **Drip remote control valve as shown on legend sheet L-200 is 1" Rainbird XCZ-100-PRB-COM. However, plans callout size is 1" and 1.5". Please provide model of drip remote control valve 1.5" size.**
Response: 1.5" Rainbird XCZ-150-PRB-COM

41. **Please provide size of planting pit for shrubs and ground covers at flat areas.**
Response: Refer to Landscape specifications on L-505.

42. Bid schedule item #78 shows Mulch around new trees, quantity 115 EA. Please provide location of these trees.
Response: Refer to sheet L-300 for the locations of the new trees.

43. Refer to a textbox below sleeving chart on sheet L-200, no sleeve shall be smaller than 8" in size. However, irrigation plans have callout for sleeves 2" & 6" in size. Please clarify.
Response: All sleeves shall be two times the diameter of pipe passing through.

44. Please confirm that the symbol of lowercase letter "w" shown on sheet L-201 represents an existing water meter, as this symbol is not shown on legend. Please clarify.
Response: It's a typo. "W" is the new 4" separate irrigation water meter. location is approximate at the present time. The final location shall be determined in the field by the owner representative. (Refer to the legend).

45. Civil plans refer to landscape plans for Art Wall construction although there are no sheet nor detail callouts referring to its construction. Please provide material, finish, and construction specifications for the construction of the Art Wall.
Response: Refer to Detail #7 Sheet S1.2. 39.5' length 8' high CMU wall.

46. To what slab does detail 7 sheet S1.1 and detail 1 sheet S1.2 refer to?
Response: Detail 7/S1.1 Typical Slab on Grade Subgrade Preparation is a Typical Detail used for concrete items indicated on the landscape sheets, such as the basketball court slab) to indicate proper subgrade preparation under the slab on grade. The details states that no reinforcing is required at sidewalks and shows minimum reinforcing and slab thickness unless noted otherwise. Amphitheater Slab Section 5/S5.1 refers to Thickened Slab Edge detail 1/S1.2. Also, detail 1/S5.1 specifically states that it only applies to 5/S5.1.

47. Which wall does detail 7 sheet S1.2 correspond to?
Response: See Response to Question #45.

48. What line item will the removal of the existing restroom be allocated to?
Response: Line Item #5 – Demolition and Removals.

49. Please provide a gate detail with hardware callout for the sheet L-404 detail 1 and 2 fence gates.
Response: Refer to Manufacture/ClearVu. Contractor shall provide a shop drawing for the double swing gate for review and approval by landscape architect.

50. Sheet L-101/L-102 key notes 13 and sheet L404 detail 3 refer to precast pavers but no callout, bid item, nor specification for manufacturer, model, or color can be found within the documents. Are precast pavers part of this scope and if so please provide direction as to their location and manufacturer/model?
Response: Precast pavers omitted.

51. Please provide location of direction to bid item 88 Rhino Gates. Please provide construction detail and footing dimensions for their construction.
Response: See Response to Question #33.

52. Will the 4" playground perimeter fence be mounted on top of the playground surface or poured over the base plate?
Response: Poured over the base plate.

53. Please verify that the basketball/futsol court will be 4" unreinforced concrete per detail 1 and 2 sheet L-401.
Response: Refer to plans.

54. No mention of landfill liner in bid documents. Is there a methane capture liner covering the existing landfill refuse and if so at what depth below existing finish grades is it installed as the drilled pier footings for light fixtures are specified at 72" below finish grade and may puncture it. If the liner does exist above 72" BFG what is the remedy to pier footings penetrating it?
Response: The landfill has a soil cover. Please review to the Geotechnical Report.

55. Please provide footing dimensions for Poligon Gazebo.
Response: Footing to be coordinated and provided by the Vendor/Manufacturer.

56. I could not find the detail of Bid Item 87, please advise.
Response: Bid item 87 is the lighting shown in the electrical plans 9E Sheets.

57. Tot Turf is specified in the details, however there is no 32 18 16 Specification.
Response: The Tot Turf material is the specification for the material it shall be provided and installed in accordance with the manufacture's requirements and recommendations. If a substitute material is submitted it will be compared to the Tot Turf Material to determine if the material is an equal.

58. Please confirm the color(s) of the playground surfacing and any design.
Response: The colors will be submitted and approved by the City. Since this information is not material to the bid it will be decided during the project's construction.

59. Please clarify the color to be bid upon for the top ½" wear course layer on the rubberized safety surfacing?
Response: The final color will be approved by the City during construction.

60. A detail for an 8' ClearVu Fence is shown on page L-404 but is not shown on the bid schedule. A 4' ClearVu Fence is shown on line item #52. Please confirm if there is no 8' fence on the bid schedule.
Response: 6' & 4' fence only. Refer to detail sheet L-404 / Detail 1 & 2.

61. Will the ClearVu fencing be provided by the city? If the fencing is to be furnished and installed by the contractor, there is a 16 week lead time for this product. Please confirm.
Response: ClearVu to be provided by the contractor per plans.

62. Refer to Construction Plans L-101 & L-102- Precast Pavers: Keynotes Legend Item #13 called for "Pre Cast Pavers – Refer to Detail # 3 Sheet L-401". But there is no detail on the Construction Plans. Please advise.
Response: Precast pavers omitted.

63. Is yellow pine the material you're looking for?
Response: There is not enough information in the question to be able to respond.

64. Would you like the non-accessible standard tables to be the extra heavy-duty style or standard as currently called out?
Response: As called out per plans.

65. Would you like the standard tables in 6' or 8' lengths? (The accessible are 8')
Response: Standard 6' and ADA 8'.

66. How many of the 16 benches would you like to be ADA-accessible model P1309?
Response: 50/50.

67. Please provide the specification of the Hydroseed Native Mix. There are many kinds of mixes, please specify.
Response: Please see response to Question #8.

68. I could not find the Concept Design for Art Work, please advise.
Response: Refer to Detail #7 Sheet S1.2. It's 39.5' length 8' high CMU wall.

69. On plans I could not find the Structural plan details of the Amphitheater Building, can you provide the plans and specifications?
Response: Refer to sheet S5.1.

70. Please confirm what is required for Bid Item #39, since the building is no longer included in the bid.
Response: The Building Protection System has been removed from the Project.

71. On the shrub planting plan, page L-310, the plan calls for planting shrubs symbolized by "SS." However, the shrub legend does not have any "SS" symbol. Please clarify.
Response: Salvia Spathacea.

72. Please advise if "P1" event pedestal shall be per panel schedule on sheet E-301 or per detail on sheet E-403. (Photo attached included via email).
Response: Contractor shall base their bid price for the panel on the panel schedule shown on Sheet E-301

73. The methane membrane is missing as part of the plan scope detail 1/C-3 MMS Modification area (M-102) as enlarged on M-104.
Response: The intent of the question isn't clear, however there is no liner on the landfill.

74. In the specs under Section 2 42 00 Building Protection System, no building is specifically mentioned in the scope nor is there a reference to the Liquid Boot barrier.
Response: Please see response to Question #70.

B. Replace Sheet 2 (C-100) and Sheet 3 (D-101) with the attached sheets to the Project Plans.

An acknowledgment of receipt of this Addendum No. 2 shall be submitted with the Bid Proposal. Failure to provide such acknowledgment shall render the bid as non-responsive and subject to rejection.

BY ORDER OF THE CITY OF LA HABRA

BY: _____

Albert Mendoza, P.E.
Deputy Director of Public Works /
City Engineer

Legion Contractors, Inc.

_____
Contractor (Signature)

Amir Movafegh, President
Name

August 30, 2023
Date

Enclosure(s)

City of La Habra

"A Caring Community"

CITY HALL – ENGINEERING DIVISION

110 E. La Habra Boulevard
Post Office Box 337
La Habra, CA 90633-0785
Office: (562) 383-4151

August 16, 2023

ADDENDUM NO. 3

VISTA GRANDE PARK IMPROVEMENTS PROJECT
CITY PROJECT NO. 2-P-22

To all prospective bidders and plan holders for **VISTA GRANDE PARK IMPROVEMENTS PROJECT, CITY PROJECT NO. 2-P-22.**

The intent of this Addendum No. 3 is to make revisions, additions and/or deletions, and answer and/or clarify questions for the Vista Grande Park Improvements Project, Project No. 2-P-22; and are therefore hereby made a part of the contract bid documents.

A. Questions and Answers:

1. We refer to Sheet L-101, item #3 (also PV-03) with the rubber surfacing at the playground. Please provide which bid item this falls under?
   Response: Bid item 53A was added to the updated Bid schedule for this item. See attached revised Bid Schedule.

2. Please verify what kind of paving should be where the prefabricated building was scheduled to be placed.
   Response: Restroom will be done by others in the future. Contractor shall verify the limits of waste around the existing restroom to verify it's not on waste. The contractor shall grade the footprint of the future restroom to concrete subgrade.

3. We refer to bid items #11 & #59. Please provide a location for driveways. We believe that the driveway at the trash enclosure is included twice.
   Response: It has been confirmed the trash enclosure driveway was counted twice. The Bid schedule has been revised and attached. Bid item #59 was removed in the updated bid schedule. See attached revised Bid Schedule.

4. Please provide which bid item number the 6' ClearVu Invisible fence (1/L-404) fence gets paid under?
   Response: The bid schedule has been amended. Bid item #46A has been added and is listed under the "Split Large/Small Dog Park" area. See attached revised Bid Schedule.

5. Please confirm if the paving, curbs, and CAB at park entry, on Los Lomas Drive is to be removed and replaced.
   Response: Contractor is to remove all objectionable items and/or materials within project limits in accordance with specifications (Section 31 10 00).

6. Reference: Greenbook, 2021 - Question: Greenbook states that the bidder is required to self-perform at least 50% of the work. Please advise which specialty items (e.g., amphitheater/gazebo construction, electrical, etc.) would be excluded from the bid total in determining the 50% amount.

Response: Specialty bid items include but no limited to electrical, landscape/irrigation, playground equipment, and landfill gas methane mitigation system.

7. Reference: Section 01 20 00 – Measurement & Payment – Civil Improvements - Question: 4.6 – ii. Civil Improvements (F) lists 'Concrete Walking Path Per Sheets L-101 & L-102 as a square foot (SF) bid item, but it does not seem to be included on the Bid Schedule. Please clarify.
   Response: This bid item was replaced by bid item #47.

8. Reference: Section 01 20 00 – Measurement & Payment – Civil Improvements- Question: 4.6 – v. Civil Improvements (E.) lists 'Stage, Associated Ramps, and Walls per Structural Plans' as a lump sum (LS) item, but Item No. 54 on the Bid Schedule notes the unit of measure as SF. Please clarify.
   Response: The unit for this bid item shall be square feet.

9. Reference: Greenbook, Section 8-1-Question: This section requires a field office for the owner. Please advise if a field office is needed, and if so, Class A, B or C.
   Response: The City is not requiring an office for Construction Administration or Inspection staff, however the contractor's office shall have room for regular construction meetings which will be attended by project staff from the city, the designers, contractor and other stakeholders..

10. Please confirm that no need soil preparation for hydroseed Native Mix as shown on sheet C-100.
    Response: Please see response to Question #8 in Addendum No. 2. In addition, all areas designated to receive seed are to be track walked and pre-dampened to a 2-inch depth.

11. What is the expectations/scope of the Prime Contractor in relation to the prefabricated restroom? Several sheets refer to NIC/By others. Is there any preparatory work, over excavation, etc. or are we to exclude any work related to the structure?
    Response: Please see response to Question #2 above.

12. Has a hazardous material test been done on the existing restroom and if so please provide the testing report for bidding purposes?
    Response: It's our understanding that there is no asbestos and/or lead on the existing restroom.

13. No line/bid item for the 6' Dog Park fence as shown on sheet L-102 keynote 27.
    Response: Please see response to Question #4 above.

14. Key note 27 sheet L-102 refers to detail #2 sheet L-404 for a 96" fence. Is the dog park fence 96" or 72" as called out in the detail? No bid item for this fence and or gates.
    Response: Please see response to Question #4 above.

15. Tot Turf Playground Surfacing is also not listed in the Bid Item Listings.
    Response: Please see response to Question #1 above.

16. Is the contractor responsible for obtaining at its own expense a 1150.1 waste excavation permit from SCAQMD? Or will the city pay for the permit requirement? If not, please confirm the price of obtaining the 1150.1 waste excavation permit.
Response: The Contractor is responsible for obtaining and paying for the permit. Contact SCAQMD for permitting information at 909-396-3385.

17. Please provide line item for playground safety surfacing and subbase installation within the Bid Schedule.
Response: Please see response to Question #1 above.

18. What is the General Contractor's self-performance percentage scope coverage?
Response: Please see response to Question #6 above.

19. Please provide detail of Gates-Rhino Gates-Metal Pipes-4' H x 30' Wide (Item #88).
Response: Please see response to Question #33 in Addendum No. 2.

20. On Sheet C-106 "Restroom (Future by Others, NIC). Bid Item 57 Restroom/Storage Building, Concrete Plaza Area is included in the contract.
Response: Please see response to Question #2 above.

21. Please clarify if Bid Item 57 is only for the concrete floor area, and what about the Storage Building, is that included in the Contract?
Response: Please see response to Question #2 above.

B. Replace Bid Schedule, Pages D-5 through D-9 with the attached revised Bid Schedule, pages D-5A through D-9A.

An acknowledgment of receipt of this Addendum No. 3 shall be submitted with the Bid Proposal. Failure to provide such acknowledgment shall render the bid as non-responsive and subject to rejection.

BY ORDER OF THE CITY OF LA HABRA

BY: _____
Albert Mendoza, P.E.
Deputy Director of Public Works /
City Engineer

Legion Contractors, Inc.

_____
Contractor (Signature)

Amir Movafegh, President
Name

August 30, 2023
Date

Enclosure(s)

City of La Habra
"A Caring Community"

CITY HALL – ENGINEERING DIVISION

110 E. La Habra Boulevard
Post Office Box 337
La Habra, CA 90633-0785
Office: (562) 383-4151

August 23, 2023

ADDENDUM NO. 4

VISTA GRANDE PARK IMPROVEMENTS PROJECT
CITY PROJECT NO. 2-P-22

To all prospective bidders and plan holders for **VISTA GRANDE PARK IMPROVEMENTS PROJECT, CITY PROJECT NO. 2-P-22.**

The intent of this Addendum No. 4 is to make revisions, additions and/or deletions, and answer and/or clarify questions for the Vista Grande Park Improvements Project, Project No. 2-P-22; and are therefore hereby made a part of the contract bid documents.

A. **The City will not be responding to any questions, request for information, etc. regarding this Project after the issuance of this Addendum No. 4., with an effective date of August 23, 2023.**
B. **Questions and Answers:**

1. We refer to bid item # 55. Please provide the allowance that is to be used as well as the scope of work involved. ie it would be completely UG or surface mount, conduit size, wire size and quantity, etc.
   Response: No allowance will be provided; this bid item shall be paid as a lump sum. For wire sizing and costing information see the response to questions 9 and 10 below.

2. Please provide detail for Turf rotor as shown on Irrigation legend sheet L-200.
   Response: The details provided on Rainbird's official website have been reviewed and provide the information requested. Please refer to those details and install per manufacturer's recommendations.

3. Please provide application rate for seeding and slurry mix of Hydrostolized Turf as shown on Turf legend sheet L-309.
   Response: Please see response to Question #6 below

4. Please provide material, depth and limit of mulch at slope planting under existing trees as shown on Bid Schedule item #76.
   Response: In accordance with the plans, for example, see details on Sheet L-409.

5. Please confirm type of material – TPV or EPDM you are wanting along with the type of Binder – Aromatic or Aliphatic.
   Response: Contractor shall submit material and binder type for Landscape Architect to review prior to installation. If there is a cost difference between the materials, the bidder shall assume the more expensive material for the bid. If the less expensive material is selected during construction, the City shall be issued a credit by the contractor for the difference in the cost.

6. Has the city decided on turf alternative #1, as shown on the Shrub Planting Plan, beginning on page L-316?

Response: The City has decided on Turf Alternative #1

TURF LEGEND

Symbol	Genus Species Name	Common Name	Method Installed
	Pennisetum clandestinum	Kikuyu Grass	Contractor to install Hydrostolized Turf

Turf alternative #1 (pending owner approval): In lieu of Kikuyu, provide and install Hybrid Bermuda "Bandera" sod in the ballfield, including the outfield and turf area beyond the outfield up to the nearest mow strip or other paved perimeter of the turf area adjoining the ballfield. At all other remaining turf areas, provide and install West Coaster fescue blend in sod type. Both Hybrid Bermuda "Bandera" sod and "West Coaster" sod are to be purchased/provided from West Coast Turf. No alternatives will be accepted.

If required, the kikuyu is hydrostolenized kikuyu and is to be installed via seeding, correct?

Response: Not required.

7. Please clarify the binder type to be used within the top ½" wear course layer on the rubberized safety surfacing? Aromatic or Aliphatic?

Response: Per the manufacturer's recommendations.

8. Reference Sheet L-402, Detail #2. Please note that the detail referenced is showing the wear course for rubberized safety surfacing to be thickened in a manner that would not be compliant due to not having a full system thickness within fall zones needed for the playground equipment as shown on Sheet L-101.

The fall zones shown for playground equipment are right against the concrete border which in this detail have 2" with no SBR cushion layer and are thickened underneath with an additional 1 ½" wear layer.
This installation is not ASTM or IPEMA certified and will not be compliant. Please see attached standard installation detail for review and approval around the entire perimeter of playground.

Response: Equipment will be relocated during construction within the play area to avoid fall areas conflict with the concrete.

9. Reference BID Plan Sheets: E-000 Work Definitions, and E-102 – E-103 General Note #3.

Sheet E-000 states all unmarked conduit runs are ½" conduit with 2#12 conductors unless noted otherwise. Electrical Site plan sheets Note 3 states all branch circuits to be sized at #10 minimum. Additionally, all branch circuits are unmarked with no listing of conductor sizes or quantities that have taken into account voltage drop calcs etc from the point of connection. There is mention on General Note #9 that ground wire shall be #4/0. What are the accompanying conductor sizes to this calculation per circuit. Please provide a conduit and wire schedule listing all desired branch circuit sizes per the Engineer of Record.

Response: Provide three (3) #10 awg copper conductors for each outdoor 20A-1 pole branch circuit. This requirement is listed on General Note 3 of sheets E-102 and E-103. This sizing will be appropriate for the 20 1-pole branch circuits shown, voltage drop has been considered. For Grounding and specific wire sizing, refer to the diagram on Sheet E-401.

10. **Please clarify whether a SCE Transformer Pad, Pad and Vault, or nothing is required.**
Response: Assume the existing SCE service panel is used for the contract. The location of the existing panel is not shown on the drawings, bidders shall assume the panel is within 400 feet of the proposed service panel.

11. **Addendum 2 and Detail #7 on sheet S1.2 specify 8" blocks on a 39.5' L x 8" H wall. Are the blocks 8"x8"x16" blocks? Please specify the type of block (precision, shot blast, etc.) and the color.**
Response: All CMU blocks are typically f'm=1,800 psi, 8x8x16, medium weight, running bond, solid grout, per general notes S0.1. Cut and half CMU blocks may be required to build walls as dimensioned. All CMU units are precision and grey in color for trash enclosure and site walls.

12. **Please clarify which bid item shall the mainline for Drinking Fountain be applied for.**
Response: Please include with line item #63 "Drinking Fountains".

13. **Please provide detail for the installation of Ballfield mix Stabilized DG as shown on Paving schedule on sheet L-101.**
Response: Per the manufacturer's recommendations and in accordance with the plans.

14. **Please provide detail of the drip connection.**
Response: Please see details on Sheet L-408.

15. **Which bid item will include the raw cut to subgrade elevations (16,893 CY)? Is this a field measured item? Which bid item will include the overexcavation per soils report and specifications requirements (15,311 CY)? Is this a field measured item? Which bid item will include the import needed to balance the site (7,000 CY)? Is this a field measured item? Which bid item will include the rough grade finish (400,497 SF / 9 acres)?**
Response: The bidders should refer to the measurement and payment section for how bid items are measured and paid for. The excavation and fill are paid for in the associated bid items. Soils that are excavated and used as fill are paid for in the fill placement. The fill quantity will be calculated from the pre con topo to the design grades of the subgrade.

Regarding, the math stated in the question we have reviewed the earthwork for the site and the site will balance (to subgrade) and there is no import in the job. The remainder is largely concrete, asphalt concrete, base material, etc.

As discussed at the job walk, there will be settlement during the project, the elevations shown will likely be lowered during construction to accommodate the settlement and avoid additional fill. The contractor will not be required to place fill to make up the difference between the design grades and the elevation difference caused by settlement. The only event that may cause some regrading is if settlement causes a low point and disrupts drainage. In all cases no import will be included in the project.

Since there is likely little extra soil in the project, the contractor shall phase work such that they can overbuild any necessary pads for roads, sidewalks etc. All costs associated with the overbuilding pads, over excavation, and other fine grading required for a particular project feature shall be included in the bid item for that feature. If the contractor's phasing results in additional overhandling of soils, these costs shall be borne by the contractor.

An acknowledgment of receipt of this Addendum No. 4 shall be submitted with the Bid Proposal. Failure to provide such acknowledgment shall render the bid as non-responsive and subject to rejection.

BY ORDER OF THE CITY OF LA HABRA

BY: _____

Albert Mendoza, P.E.
Deputy Director of Public Works /
City Engineer

Legion Contractors, Inc.

_____

Contractor (Signature)

Amir Movafegh, President

Name

August 30, 2023

Date

Enclosure(s)

BA20230461465

STATE OF CALIFORNIA
Office of the Secretary of State
STATEMENT OF INFORMATION
CORPORATION

California Secretary of State
1500 11th Street
Sacramento, California 95814
(916) 653-3516

For Office Use Only

-FILED-

File No.: BA20230461465

Date Filed: 3/17/2023

Entity Details

Corporation Name	LEGION CONTRACTORS, INC
Entity No.	4282259
Formed In	CALIFORNIA

Street Address of Principal Office of Corporation

Principal Address	18008 SKY PARK CIR 290 IRVINE, CA 92614

Mailing Address of Corporation

Mailing Address	18008 SKY PARK CIR 290 IRVINE, CA 92614
Attention	

Street Address of California Office of Corporation

Street Address of California Office	18008 SKY PARK CIR 290 IRVINE, CA 92614

Officers

Officer Name	Officer Address	Position(s)
AMIR MOVAFEGH	18008 SKY PARK CIR 290 IRVINE, CA 92614	Chief Executive Officer, Secretary, Chief Financial Officer

Additional Officers

Officer Name	Officer Address	Position	Stated Position
None Entered			

Directors

Director Name	Director Address
Amir Movafegh	18008 SKY PARK CIR 290 IRVINE, CA 92614

The number of vacancies on Board of Directors is: 0

Agent for Service of Process

Agent Name	AMIR MOVAFEGH
Agent Address	18008 SKY PARK CIR 290 IRVINE, CA 92614

Type of Business

Type of Business	CONSTRUCTION

Email Notifications

Opt-in Email Notifications	Yes, I opt-in to receive entity notifications via email.

Labor Judgment

B1597-2958 03/17/2023 3:01 PM Received by California Secretary of State

No Officer or Director of this Corporation has an outstanding final judgment issued by the Division of Labor Standards Enforcement or a court of law, for which no appeal therefrom is pending, for the violation of any wage order or provision of the Labor Code.

Electronic Signature

☒ By signing, I affirm that the information herein is true and correct and that I am authorized by California law to sign.

Amir Movafegh	*03/17/2023*
Signature	Date

B1597-2959 03/17/2023 3:01 PM Received by California Secretary of State

CITY OF LA HABRA
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

110 E. LA HABRA BOULEVARD
LA HABRA, CA 90631
(562) 383-4151

SPECIFICATIONS FOR
VISTA GRANDE PARK IMPROVEMENTS
CITY PROJECT NO. 2-P-22

CITY MANAGER: JIM SADRO

LA HABRA CITY COUNCIL

MAYOR	JAMES GOMEZ
MAYOR PRO TEM	DAREN NIGSARIAN
COUNCIL MEMBER	STEVE SIMONIAN
COUNCIL MEMBER	ROSE ESPINOZA
COUNCIL MEMBER	JOSE MEDRANO

BID OPENING: Wednesday, August 16, 2023, at 2:00 PM

CITY OF LA HABRA
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

110 E. LA HABRA BOULEVARD
LA HABRA, CA 90631
(562) 383-4151

SPECIFICATIONS FOR

VISTA GRANDE PARK IMPROVEMENTS
CITY PROJECT NO. 2-P-22

PREPARED BY

TETRA TECH

Tetra Tech
21700 Copley Drive, Suite 200
Diamond Bar, California 91765
Phone: (909) 860-7777
www.tetratech.com

JUNE 2023

APPROVED BY:

ALBERT MENDOZA, P.E.
DEPUTY DIRECTOR OF PUBLIC WORKS
CITY ENGINEER

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SECTION 01 20 00	MEASUREMENT AND PAYMENT
SECTION 01 50 00	CONSTRUCTION SUPPORT
SECTION 28 42 00	BUILDING PROTECTION SYSTEM
SECTION 31 00 00	EARTHWORK
SECTION 31 05 19.16	GEOMEMBRANE
SECTION 31 10 00	CLEARING, GRUBBING, AND DEMOLITION
SECTION 32 00 00	MISCELLANEOUS CIVIL IMPROVEMENTS
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SECTION 01 22 00	UNIT PRICES
SECTION 31 23 00	EXCAVATION AND FILL
SECTION 40 15 00	PROGRESS PIPING

LANDSCAPING AND IRRIGATION (SHEETS L-101 THROUGH L-505 OF PROJECT PLANS – SEE APPENDIX "A")

See Sheets L-501 through L-505 for related specifications.

ELECTRICAL (SHEETS E-000 THROUGH E-403 OF PROJECT PLANS – SEE APPENDIX "A")

See Sheets L-501 through L-505 for related specifications.

STRUCTURAL (SHEETS S-01 THROUGH S-5.1 OF PROJECT PLANS – SEE APPENDIX 'A')

See Sheets S0.1 through S0.2 for general notes.

REFERENCES

1. Construction Plans for Vista Grande Park, Tetra Tech, June 2023. See APPENDIX "A".
2. Geotechnical Design Report, Vista Grande Park, City of La Habra, California, dated June 23, 2023 and prepared by Tetra Tech. See APPENDIX "B".
3. Standard Specifications for Public Works Construction (SSPWC), 2021 Edition.
4. Standard Plans for Public Works Construction (SPPWC), 2021 Edition.
5. Caltrans Standard Specifications, 2018 Edition

PROPOSAL

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APPENDIX "A" – VISTA GRANDE PARK IMPROVEMENT PLANS (89 SHEETS TOTAL)

APPENDIX "B" – GEOTECHNICAL DESIGN REPORT, DATED JUNE 23, 2023

APPENDIX "C" – SAMPLE PROJECT CONSTRUCTION SIGN

CITY OF LA HABRA

NOTICE INVITING BIDS

NOTICE IS HEREBY GIVEN that sealed bids will be received by the City Clerk of the City of La Habra, California for furnishing all plant, labor, services, materials, tools, equipment, supplies, transportation, utilities and all other items and facilities necessary therefor as provided in the Contract Documents for the**: VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22** in strict compliance with the specifications, plans and contract documents on file at the Office of the City Clerk of the City of La Habra.

Mandatory Pre-Bid Field Meeting: The City will conduct a mandatory pre-bid field meeting **Wednesday, 8:30 A.M., July 26, 2023** at the Project site, 1100 Lambert Road, La Habra, California 90631. Prospective Bidders shall confirm final date/time on CIPlist.com and must attend this meeting.

DATE OF OPENING BIDS: Bids will be received at the Office of the City Clerk of the City of La Habra until **2:00 P.M. on Wednesday, August 16, 2023,** at which time and place the bids will be publicly opened and read aloud. Bids shall be submitted in sealed envelopes marked on the outside: **"VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22. DO NOT OPEN WITH REGULAR MAIL."**

LOCATION OF WORK: The work to be constructed hereunder for the Vista Grande Park is located on the southeast corner of Lambert Road and Idaho Street in the central portion of the City. The park's legal address is 1100 Lambert Road. within City of La Habra, County of Orange. Typical work to be done is illustrated on plans and these specifications.

DESCRIPTION OF WORK: **The Work comprises furnishing all materials, equipment, tools, labor and incidentals per the Plans, Specifications, and Contract Documents for the project. The general items consist of but not limited to mobilization; Storm Water Best Management Practices (BMPs); Excavation and Disposal; new parking lot, park amenities including; children's playground, amphitheater, basketball courts, volleyball courts, gazebo, work-out trails and equipment, landscaping and irrigation, tree planting all associated work as identified on the Plans, Specification, and Detail Construction Drawings in the City of La Habra.**

CONTRACTOR'S LICENSE: The City has determined that a Class "**A**" General Contractor's License is required for this project.

COMPLETION OF WORK: All work shall be completed within **two hundred and forty (240) working days** from the start date specified in the Notice To Proceed.

AWARD OF CONTRACT: The City reserves the right, after opening the bids, to reject any or all bids, waive any informality or irregularity in such bids, or to award to the lowest responsible bidder and reject all other bids.

PROPOSAL GUARANTEE AND BONDS: Each bid must be accompanied by a certified cashier's check or by a corporate surety bond on the form furnished by the City, as guarantee that the bidder will, if an award is made to him in accordance with the terms of his bid, promptly secure Worker's Compensation Insurance and Liability Insurance, execute the contract in the required form and furnish satisfactory bonds for the faithful performance of the contract and for the payment of claims of materialmen and workers thereunder. Said check or bidder's bond shall be in an amount of not less than ten (10) percent of the amount of the bid. The Faithful Performance Bond shall be not less than one hundred (100) percent of the total amount of the bid price named in the contract. The Payment Bond shall be not less than one hundred (100) percent of the total amount of the bid price named in the contract. The City reserves the right to reject any bond if, in the opinion of the Engineer, the Surety's acknowledgment is not in the form included in the contract documents or in another form substantially as prescribed by law.

PREVAILING RATES OF WAGES: Pursuant to the provisions of Section 1773 of the Labor Code of the State of California, the Director of Industrial Relations has ascertained the general prevailing rate of wages and employer payments for health and welfare, vacation, pension and similar purposes applicable to the work to be done. A copy of said wage rates is available on-line at:

https://www.dir.ca.gov/dlsr/DPreWageDetermination.htm

The Contractor and all subcontractors are responsible to pay the prevailing rates of wages that are specified within ten (10) calendar days before the bid open day and shall post a copy of said wage rates at the project site. The statutory provisions for penalties for failure to pay prevailing wages will be enforced (Labor Code Section 1775) and the statutory provisions for failure to comply with the State's wage and hour laws will be enforced (Labor Code Section 1813).

DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REQUIREMENT: **Under California Labor Code Section 1771.1, in order to be awarded and to perform work on public works projects, prime contractors and subcontractors must possess and maintain registration with the Department of Industrial Relations (DIR) at https://www.dir.ca.gov/public-works/contractor-registration.html. This is a separate requirement from the Contractors State License Board (CSLB) licensing requirement. See the General and Special Provisions for additional details. Payroll documents for the contractor and subcontractors should be submitted and registered on time with the DIR.**

DEBARMENT: No Contractor or Subcontractor may be awarded as a contractor on a bid proposal if they have been Debarred by the Stat pursuant to Labor Code Sections 1777.1 and 1777.7 and Public Contracts Code Section 6109.

FEDERAL NON-DISCRIMINATION PROVISION: Bidders shall comply with the President's Executive Order No. 11246.

FEDERAL INTEREST EXCLUSION: Any contract or contracts awarded under this Notice Inviting Bids are expected to be funded in part by a grant from the United States Government. Neither the United States nor any of its departments, agencies, or employees is or will be a party to this Notice Inviting Bids or any resulting Agreement. This procurement will be subject to regulations contained in 40 CFR Part 33 and 35.

CONFLICT OF INTEREST: In the procurement of supplies, equipment, construction, and services by sub-recipients, the conflict of interest provisions in (State LCA-24 CFR 85.36 and Non-Profit Organizations-24CFR 84.4), OMB Circular A-110, and 24 CFR 570.611, respectively, shall apply. No employee, officer or agent of the sub-recipient shall participate in selection, or in the award or administration of a contract supported by Federal funds if a conflict of interest, real or apparent, would be involved.

APPRENTICE: The Contractor shall comply with all rules, regulations, and all the requirements of the Labor Code including, but not limited to, Sections 1776, 1777.5, and 1777.6 of the California Labor Code.

REQUIRED EMPLOYMENT/VOLUNTEER PROGRAM: This project is being funded by the State of California Department of Parks and Recreation. One of the requirements of the grantor is for the Project to offer employment or volunteer outdoor learning opportunities for its residents. The Contractor, in good faith, shall work with the selected organizations. The City has partnered with the following organizations:

- California Conservation Corps
- Orange County Conservation Group
- La Habra Collaborative (Health Organization)
- St. Jude Children's Hospital
- Our Lady of Guadalupe Church
- Family Resource Center

CONTRACT DOCUMENTS: The contract documents shall consist of the following: Project Plans, Notice Inviting Bids; Instructions to Bidders; Proposal; Bidder's Information; Bid Schedule; Acknowledgement of Addenda Received; References; DBE Bidder's List; Violations of Federal, State or Local Laws; Disqualification or Debarment; List of Subcontractors; Bid Security Form; Bid Bond; Non-Collusion Affidavit; Certification of Understanding and

Authorization; Worker's Compensation Certificate; Public Contract Code Section 10285.1 Statement; Public Contract Code Section 10162 Questionnaire; Public Contract Code Section 10232 Statement; Agreement; Faithful Performance Bond; Payment Bond; Certification of Compliance; and the Standard Specifications for Public Works Construction, latest edition and supplements thereto, made a part by reference, together with all additions, deletions, modifications or interpretations of any of said documents, all of which are hereby made a part of this Notice Inviting Bids.

Specifications are available for inspection, without charge, at the Office of the City Engineer of the City of La Habra.

Plans, specifications and bid documents are available in digital format only. A digital copy of said Contract Documents (saved in PDF format) are posted at http://www.ciplist.com/ and are available for downloading free of charge.

STATE FUNDED PROJECT – CONSTRUCTION SIGN REQUIREMENT: This Project is being partially funded by the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access for All Act of 2018. A sign must be installed prior to construction. See Appendix "C" for sample of the sign. All materials used shall be durable and resistant to the elements and graffiti.

ADDRESS AND MARKING OF PROPOSAL: The envelope enclosing the proposal shall be sealed and addressed to the City Clerk and hand delivered to the City Clerk at the Civic Center, 110 E. La Habra Blvd. (Administration Department), or mailed to City Clerk, Civic Center, 110 E. La Habra Blvd., La Habra, California 90631. The envelope shall be plainly marked in the upper left-hand corner with the name and address of the bidder and shall bear the words "Proposal For" followed by the title of the specifications for the work, and the date and hour of opening bids. The certified or cashier's check, money order, or bidder's bond shall be enclosed in the same envelope with the proposal.

SUBMISSION OF QUESTIONS:

- Questions received less than three (3) days prior to the date for opening of Bids may not be considered.
- Questions or clarifications deemed by the City to be material shall be answered via issuance of an addendum and posted to the City's online bidding service.
- Only questions answered by formal written addenda shall be binding. Oral and other interpretations or clarifications shall be without legal effect. It is the Bidder's responsibility to be informed or any issued addenda and to include all such information in its Bid.
- Any questions regarding this solicitation shall be submitted electronically to: Albert Mendoza, Deputy Director of Public Works / City Engineer at amendoza@lahabraca.gov, by no later than **Friday, July 28 at 2:00 pm.**

CITY OF LA HABRA

INSTRUCTIONS TO BIDDERS

The following instructions and conditions apply to the attached bid and the bidder acknowledges the acceptance thereof by signing and filing said bid.

Each bidder shall state whether he is an individual, firm or corporation; if firm, give name of each member; if a corporation, give name of president, secretary, treasurer and manager.

Proposals shall be submitted to the City on forms prepared and furnished in the bid documents, or as provided by the Engineering Office of the City of La Habra. When presented, they must be completely made out in the manner and form indicated therein, showing the proposed prices clearly and legibly and must be properly signed by the bidder. Proposals presented otherwise may be rejected.

Each proposal so submitted, together with the required proposal guarantee hereinafter prescribed, shall be presented under sealed cover and must be filed prior to the time and place designated in the Notice Inviting Bids. A proposal so presented, however, may be withdrawn by the bidder provided the request therefor is made in writing, is signed by the bidder or his authorized representative and is filed prior to the time fixed for the opening of bids. The withdrawal of a bid proposal does not prejudice the right of the bidder to file a new bid.

All proposals submitted as hereinabove prescribed will be publicly opened and read at the time and place indicated in the Notice Inviting Bids.

Bids are required for the entire work. The amount of the bid for comparison purposes will be the total of all items.

The bidder shall set forth for each item of work, in words and in clearly legible figures, a unit price and an amount for the item in the respective space provided for this purpose. In the case of unit price items, the amount set forth under the “AMOUNT” column shall be the extension of the unit price bid on the basis of the estimated quantity for the item. In the case of discrepancy between the words and figures, the words shall prevail.

In case of discrepancy between the “Unit Price” and the “Amount” set forth for the item, the Unit Price shall prevail. However, if the amount set forth as a Unit Price is ambiguous, unintelligible or uncertain for any cause or is omitted or in the case where the Unit Price is the same amount as the entry in the “AMOUNT” column for the item, the “AMOUNT” price shall prevail in accordance with the following:

(1) As to lump sum items, the amount set forth in the "AMOUNT" column shall be the unit price.
(2) As to unit price items, the amount set forth in the "AMOUNT" column shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price.

In case of discrepancy between the sum of the individual "AMOUNT" prices, and the Total Bid Price, the sum of the individual "AMOUNT" prices will prevail.

In case of discrepancy of the Mobilization and Demobilization "Unit Price" and "Amount" being higher than Five percent (5%) of the total bid amount as stated in the contract document, then the "Unit Price" and "Amount" shall be deemed to be Five percent (5%) of the total bid amount.

In case of discrepancy of the Traffic Control, Public Convenience and Safety "Unit Price" and "Amount" being higher than Five percent (5%) of the total bid amount as stated in the contract document, then the "Unit Price" and "Amount" shall be deemed to be Five percent (5%) of the total bid amount.

Bidders must satisfy themselves by personal examination of the location of the proposed work and by personal examination of the proposed contract documents as to the actual conditions and the requirements of this work and shall not at any time after submission of the bid dispute, complain or assert that there was any misunderstanding in regard to the nature or the amount of work to be done unless a written change in these specifications or contract or written clarification thereof has been issued by the City.

Each bid must be in a sealed envelope which is to be clearly marked so as to identify it as a bid (such as "Sealed Bid - do not open with regular mail"), giving the number and name of the project or specification and the name of the bidder. These instructions are particularly necessary if your bid is transmitted by mail. Failure to identify the project or to address it to the City Clerk, Civic Center, 110 E. La Habra Blvd., La Habra, California 90631, Attention City Clerk, will result in the opening of the envelopes with the regular mail and may thereby void the bid.

The City Council will award the contract to the lowest responsible bidder, however, said Council reserves the right to reject any or all bids, to waive any informality in the bids received and, if necessary, to take said bids under advisement for a period not to exceed sixty (60) days including lead-time.

All proposal requirements and conditions as set forth in the Standard Specifications shall apply hereto.

APPROXIMATE ESTIMATE: The quantities shown in the proposal form and in the estimate included in the bid documents shall be considered as approximate only, being listed therein for the purpose of serving as a general indication of the amount of work or materials to be performed or furnished as a basis for the comparison of bids. The Council does not guarantee nor agree, either expressly or by implication, that the actual amounts required will correspond therewith, but reserves the right to increase or decrease the amount of any item, portion of work to be performed or material to be furnished, or to omit any such item or portion, in accordance with the provisions relative thereto set forth in the bid documents or Standard Specifications under which the work is to be constructed, without in any way invalidating the contract should such increase, decrease or omission be deemed necessary or expedient. The City reserves the right to increase or decrease the amount of any item as necessary due to budgetary requirements.

GENERAL PROVISIONS

SECTION 1. DEFINITION OF TERMS

CITY: The City of La Habra

CITY COUNCIL: The City Council of the City of La Habra.

ENGINEER: Any reference to the "Engineer" in the specifications shall be construed to mean the City Engineer of the City of La Habra or his authorized agents.

BIDDER: Any individual, firm or corporation submitting a bid to furnish the materials and equipment and perform the work herein specified, properly made out on the form furnished by the City Engineer, duly executed by the bidder and enclosed within a sealed envelope directed to the City Clerk, Civic Center, 110 E. La Habra Blvd., La Habra, California 90631.

BID FORMS: The blank forms prepared by the City on which the bidder must submit the bid.

CONTRACTOR: The bidder whose bid is accepted and to whom the contract is awarded.

CONTRACT: The Specifications, General Provisions, Special Provisions, the notice inviting bids, the bid and addenda of the Contract, and the agreement entered into pursuant thereto shall constitute the Contract between the City of La Habra and the Contractor.

LABORATORY: The designated laboratory authorized by the Engineer to test materials and work involved in the contract.

THE WORK: All the work required to be performed under the contract.

GENERAL CONSTRUCTION TERMS: Unless otherwise specifically defined herein or unless the content requires a different meaning, all words, terms and phrases having a well-known or technical meaning shall be so construed.

USE OF PRONOUNS: Words used herein in the masculine gender include the feminine and neuter and vice versa; the singular number includes the plural and the plural the singular. The word "person" includes a corporation, association or partnership.

SECTION: The part into which these General and Special Provisions are divided. Each section is designated by a whole number preceding its title.

ARTICLES: The parts into which sections are divided. Each article is designated by a number preceding its title, the first two figures to the right of the decimal point being the number of the article and the figures or figure to the left of the decimal point being the number of the section of which such article is a part. Thus: Article 11.05 indicates Article 5 of Section 11.

SUBDIVISIONS: The parts into which articles are divided. Each subdivision is designated by a number preceding its title, the figure or figures to the right of the article number being the number of the subdivision. Thus: Subdivision 11.05.2 indicates Subdivision 2 of Article 5 of Section 11.

STANDARD SPECIFICATIONS: The document entitled "Standard Specifications for Public Works Construction", latest edition and supplements thereto, are hereinafter referred to as the Standard Specifications.

Other terms appearing in the Standard Specifications shall have the intent and meaning specified in Section 1, "General", of the Standard Specifications.

In case of conflict between the Standard Specifications and these Special Provisions, these Special Provisions shall take precedence over and be used in lieu of such conflicting portions of the Standard Specifications.

SECTION 2. REQUIREMENTS AND CONDITIONS

ARTICLE 2.01 EXAMINATION OF PLANS, SPECIFICATIONS, GENERAL PROVISIONS, SPECIAL PROVISIONS, AND WORKSITE: Bidders must satisfy themselves by personal examination of the proposed work site and by such other means as they may prefer as to the actual conditions and requirements of the work. Bidders shall not at any time after submission of the bid, dispute, complain or assert that there was any misunderstanding in regard to the nature or amount of work to be done.

The CITY, in accordance with Title VI of the Civil Rights Act of 1964 (78 Station 252) and the Regulations of the Department of Commerce (15 C.F.C., Part 8), issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that the contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination of the grounds of race, color or national origin.

ARTICLE 2.02 BID FORMS: All bids submitted shall be made on the blank forms provided with the bid documents. Bids submitted on forms other than those provided with the bid documents shall be rejected. All bids shall give the price bid both in writing and figures and shall be signed by the bidder with his address. Bids shall be enclosed in a sealed envelope directed to the City Clerk, Civic Center, 110 E. La Habra Blvd., La Habra, California 90631.

ARTICLE 2.03 IRREGULAR BIDS: Bids may be rejected if they show any alterations of form, additions not called for, conditional bids, incomplete bids, erasures or irregularities of any kind.

ARTICLE 2.04 DISQUALIFICATION OF BIDDERS: The CITY COUNCIL may reject any and all bids should it deem this for the public good and the bid of any party who has been delinquent or unfaithful in any former contract with the CITY, and may reject all bids other than the lowest bid of any responsible bidder and may award the contract for said work or improvement to the lowest responsible bidder at the prices named in his bid.

ARTICLE 2.05 MATERIAL GUARANTEE: Before any bid is accepted, the bidder may be required to furnish a complete statement of the origin, composition and manufacture of any or all materials to be used in the construction of the work, together with samples which may be subjected to the tests provided for in these Specifications or in the Special Provisions to determine their quality and fitness for the work.

ARTICLE 2.06 BONDS: In lieu of Section 1-7.2 "Contract Bonds" of the Standard Specifications, the Contractor, simultaneously with the execution of the Agreement, shall furnish a surety bond in an amount equal to one hundred (100) percent of the contract price as security for the faithful performance of the contract and a separate surety bond in an amount equal to one hundred (100) percent of the contract price as security for the payment of all persons performing labor and furnishing materials in connection with the contract. Said bonds shall be secured from a Surety Company satisfactory to the CITY.

ARTICLE 2.07 BID GUARANTEE:

Subdivision 2.07.1: All bids shall be presented under sealed cover and shall be accompanied by cash, cashier's check, certified check or bidder's bond made payable to the City of La Habra for an amount equal to at least ten percent (10%) of the amount of said bid. No bid will be considered unless such cash, cashier's check, certified check or bidder's bond is enclosed therewith.

Subdivision 2.07.2: Return of Bid Guarantee: The bid guarantee of the bidder or bidders who are being considered for the award of Contract shall be held until the execution of said contract, and shall thereupon be returned to the bidder. Bid guarantee of other bidders will be returned to such bidders upon award of the Contract.

ARTICLE 2.08 AWARD OF CONTRACT: The award of contract, if it be awarded, will be within ninety (90) days of the opening of bids.

ARTICLE 2.09 EXECUTION OF CONTRACT: The contract, construction schedule, and bonds shall be executed and filed by the successful bidder with the City Clerk of the City of La Habra not later than ten (10) days after the award of contract.

All bidders may submit with their bids a sworn statement of their financial responsibility, technical ability and experience. Such sworn statement may be required to be furnished before award is made to any particular bidder.

The CITY COUNCIL may, upon the refusal or failure of successful lowest responsible bidder to accept the contract, award it to the second lowest responsible bidder. If the legislative body awards the contract to the second lowest bidder, the amount of the lowest bidder's security shall be applied by the CITY to the difference between the low bid and the second lowest bid; and the surplus, if any, shall be returned to the lowest bidder if cash or a check is used, or to the surety company if bidder's bond is used.

ARTICLE 2.10 BEGINNING OF WORK: The Contractor shall begin work from the start date specified in the Notice To Proceed.

ARTICLE 2.11 PLANS AND SPECIFICATIONS: Plans, specifications and bid documents are available in digital format only. A digital copy of said Contract Documents (saved in PDF format) are posted at http://www.ciplist.com/ and are available for downloading free of charge.

ARTICLE 2.12 CONTRACT DOCUMENTS: The Contract Documents shall consist of the following: Notice Inviting Bids; Instructions to Bidders; Proposal; Bidder's Information; Bid Schedule; Acknowledgement of Addenda Received; References; DBE Bidder's List; Violations of Federal, State or Local Laws; Disqualification or Debarment; List of Subcontractors; Bid Security Form; Bid Bond; Non-Collusion Affidavit; Certification of Understanding and Authorization; Worker's Compensation Certificate; Public Contract Code Section 10285.1 Statement; Public Contract Code Section 10162 Questionnaire; Public Contract Code Section 10232 Statement; Agreement; Faithful Performance Bond; Payment Bond; Certification of Compliance; CDBG Requirements; and the Standard Specifications for Public Works Construction, latest edition and supplements thereto, together with all additions, deletions, modifications, appendices and all addenda as prepared prior to the date of the bid opening setting forth any modifications or interpretations of any said documents are hereby incorporated in and made a part of the Contract Documents.

All Contract Documents are complementary, and what is called for in any one shall be as binding as if called for in all. The intention of the documents is to require a complete and finished piece of work. The Contractor, at his sole cost and expense, shall perform all labor and services and shall furnish all materials, tools, equipment and facilities necessary for the proper execution of the work, with the exception of such items as may be definitely

stipulated in the Specifications or on the Plans to be furnished by the CITY. Anything shown on the Plans and not in the Specifications, or in the Specifications and not in the Plans, shall be performed by the Contractor as though shown on both the Plans and Specifications.

Documents which shall be signed and returned to the CITY with Bid Proposal are:

> Proposal; Bidder's Information; Bid Schedule; Acknowledgement of Addenda Received; References; Violations of Federal, State or Local Laws; Disqualification or Debarment; List of Subcontractors; Bid Security Form; Bid Bond; Non-Collusion Affidavit; Certification of Understanding and Authorization; Worker's Compensation Certificate; Public Contract Code Section 10285.1 Statement; Public Contract Code Section 10162 Questionnaire; Public Contract Code Section 10232 Statement; Non-Segregated Facilities Certification; Contractor List of Proposed Subcontractors; Notice of Equal Employment Opportunity; Debarment and Suspension Certification.

Documents which are to be signed and returned to the CITY by the winning bidder are:

> Agreement; Faithful Performance Bond; Payment Bond; Certification of Compliance; Liability Insurance and Workers Compensation Insurance.

Subdivision 2.12.1 Precedence Of Contract Documents: If there is a conflict between Contract Documents, the order of precedence shall be as follows:

1. Contract/Agreement
2. Special Provisions/Specifications
3. Plans

Within the Specifications, the order of precedence is as follows:

1. Permits issued from other jurisdictional regulatory agencies
2. Change Orders and Supplemental Agreements; whichever occurs last
3. Contract/Agreements
4. Addenda
5. Special Provisions
6. Plans
7. Standard Plans
8. Standard Specifications
9. Referenced Specifications

With reference to Plans, the order of precedence is as follows:

1. Change Order drawings govern over Addenda and Contract drawings.

2. Addenda drawings govern over contract drawings.
3. Contract drawings govern over shop drawings and Standard drawings.
4. Detail drawings govern over general drawings.
5. Figures govern over scaled dimensions.

ARTICLE 2.13 AUTHORITY OF THE ENGINEER: The Engineer shall have the authority to direct as may be necessary to ensure that the work is in strict compliance with the Contract Documents; determine the quantity, quality and soundness of the work; determine if material and equipment being used is satisfactory; interpret the requirements of the contract; and, make decisions regarding the progress and execution of the work. However, neither the Engineer nor any representative of the Engineer shall have the authority to authorize extra work without prior approval by the CITY COUNCIL. Should any discrepancy appear or any misunderstanding arise as to the importance of anything contained in the Specifications or Plans, the matter shall be referred to the Engineer, who shall decide the same in accordance with the true intent and meaning as construed by him. Any difference or conflicts which may arise between the Contractor and any other contractor also under the contract administration of the Engineer shall be arbitrated by the Engineer.

ARTICLE 2.14 ACCESS TO WORK: The Engineer, his agents and duly authorized representatives of the CITY shall at all times and for any purpose, have access to the work and the premises used by the Contractor and the Contractor shall provide safe and proper facilities therefor.

ARTICLE 2.15 LEGAL ADDRESS OF THE CONTRACTOR: The address given in the Proposal is hereby designated as the place to which all notices, letters and other communications to the Contractor shall be mailed or delivered. The mailing or delivering to the above-named place of any notice, letter or other communication to the Contractor, shall be deemed sufficient service thereof upon the Contractor. The date of said service shall be the date of such mailing or delivery. Such address may be changed at any time by a written notice signed by the Contractor and delivered to the Engineer.

ARTICLE 2.16 CONTRACTOR'S RESPONSIBILITIES: The Contractor shall be responsible for the safe, efficient and adequate use of equipment during the progress of the work so as to secure the safety of the workers and others. The Contractor is also responsible for the quality of work required and the stipulated rate of progress. It shall be the Contractor's responsibility to perform the work strictly in accordance with the Specifications and Plans or in accordance with modifications as may be made by the Engineer in the form of addendum or written change orders. The presence of the Public Works Inspector does not relieve the Contractor of his obligation to comply with the requirements of the Plans, Specifications and Contract Documents.

The Contractor shall assume the defense of and indemnify and save harmless the CITY and its officers and agents from all claims of any kind arising from his own negligence or that of his agents in the performance of the Contract.

The Contractor shall be responsible for the custody of any material furnished him for the care of all work until its completion and final acceptance. He shall, at his own expense, replace damaged or lost material and repair damaged parts of the work, regardless of cause, or the same may be done at the Contractor's expense by the CITY.

During the progress of the work the Contractor shall keep the worksite in a neat and clean condition and free from any unsightly accumulation of rubbish. If stockpiling is necessary, the material shall be removed or disposed of weekly. He shall remove from the vicinity of the completed work all plant, building, rubbish, unused materials, concrete forms and equipment belonging to him or used under his direction during construction. In the event of his failure to do so, the same may be removed by the CITY at the Contractor's expense.

All operations of the Contractor shall be conducted in such a manner as to avoid unnecessary dust. To this end, the Contractor shall provide equipment, materials, water, and labor to keep all parts of the work adequately sprinkled and dust free as determined by the Engineer. Full compensation for dust control measures and conforming with the provisions of this Section shall be included in the prices paid for the various contract items of work listed in the Bid Schedules, and no additional compensation will be allowed therefor.

SECTION 3. SCOPE OF WORK

ARTICLE 3.01 WORK TO BE DONE: The Contractor shall for the price bid furnish all the necessary labor, materials, equipment, methods, processes, implements, tools, and machinery except as otherwise specified to perform the required work in a thorough and workmanlike manner in accordance with the plans and specifications, and to the satisfaction of the Engineer. The general items consist of but not limited to mobilization; Storm Water Best Management Practices (BMPs); Excavation and disposal; new parking lot, park amenities including; children's playground, amphitheater, basketball courts, volleyball courts, gazebo, work-out trails and equipment, landscaping and irrigation, tree planting all associated work as identified on the Plans, Specification, and Detail Construction Drawings in the City of La Habra.

ARTICLE 3.02 FINAL CLEANING UP: Before acceptance of the work and final payment therefor, the Contractor shall clean the work and all ground occupied by him in connection with the work, of all rubbish, excess materials, equipment and forms. All parts of the work shall be left in a neat and presentable condition.

ARTICLE 3.03 REPAIRS AND REPLACEMENTS: All damage done to existing facilities and improvements by the Contractor shall be repaired by him to the satisfaction of the Engineer. Where sidewalks, curbs or gutters are to be repaired, the repairs shall be made by removing and replacing the entire section back to the nearest scoring lines and not by refinishing the damaged portion.

SECTION 4. CONTROL OF THE WORK

ARTICLE 4.01 COORDINATION OF PLANS, SPECIFICATIONS AND SPECIAL PROVISIONS: These specifications, drawings, special provisions and all supplementary documents are essential parts of the contract. A requirement occurring in one is as binding as though occurring in all. The drawings and specifications are intended to be cooperative and to describe and provide for the workmanlike completion of proposed improvements. Refer to Subdivision 2.12.1 for precedence of Contract Documents.

ARTICLE 4.02 SPECIFICATIONS AND DRAWINGS: The Contractor shall keep at the work site a copy of the Specifications and Plans at all times and provide the Engineer access thereto.

The Contractor shall check all dimensions and quantities on the drawings or schedules herein contained or given to him by the Engineer, and shall notify the Engineer of errors therein which may be discovered by examining and checking the drawing. He shall not take advantage of any error or omission in these specifications, drawings or schedules, but should such error or omission be discovered, the Contractor shall notify the Engineer and the Contractor shall carry out the Engineer's instructions, as if originally specified.

ARTICLE 4.03 SUPERVISION BY THE CONTRACTOR: The Contractor shall give his personal superintendence to the work, using all his skills and attention in directing the performance of the work or he shall provide a competent, full-time superintendent or foreman with the authority to act on his behalf and whom shall be present to direct the work on the project at all times during its progress. All directions given to the Contractor's superintendent or other authorized supervisory employee shall be as binding as if delivered to the Contractor personally.

ARTICLE 4.04 LABOR: Any overseer, superintendent, laborer or other person employed by the Contractor who shall perform his work in a manner contrary to the specifications shall be discharged immediately and such person shall not again be employed on the project.

ARTICLE 4.05 LINES AND GRADES: The Contractor will set all lines and grades in accordance with the plans and all work done shall conform thereto. The Contractor shall dig all stake holes necessary to give lines and grades. The Contractor shall preserve all stakes set for lines, grades or measurements of the work in their proper places until authorized to remove them by the Engineer. Any expense incurred in replacing stakes which the

Contractor or his subordinates may have failed to preserve shall be borne by the Contractor. Unless otherwise noted, the grade between two grade points shall be a straight line between such two points.

ARTICLE 4.06 INSPECTION: The Contractor shall notify the Engineer at least 48 hours in advance of starting or resuming work so that the Engineer can arrange for an assistant engineer or inspector to be present. Failure to give such notice shall be cause for rejection of such work. The Contractor shall furnish the engineers and inspectors reasonable facilities for obtaining such information as may be necessary to give them full information at all times respecting the progress and manner of doing the work and the character of the materials.

Subdivision 4.06.1 Special Inspection Fees: If the Contractor elects to work under this contract more than 8 hours per day and 40 hours per week; or Saturday, Sunday, overtime, or CITY Holidays, the Contractor shall arrange with the Engineer for the required inspection service and pay the special inspections fees which will be charged at the following rates:

Monday through Friday	$105.00 / hour
Saturday, Sunday, overtime and Holidays	$140.00 / hour

ARTICLE 4.07 DEFECTIVE WORK OR MATERIALS: Inspection of the work shall not relieve the Contractor of his obligation to fulfill his duty as herein prescribed. Defective work shall be made good by the Contractor. Unsuitable work and materials may be rejected notwithstanding that such work and materials were previously inspected by the Engineer and accepted or estimated for payment. If the work, or any part thereof, is determined to be defective at any time before final acceptance of the work, the Contractor shall forthwith make good such defect without additional compensation in a manner satisfactory to the Engineer.

If materials furnished and brought upon the job site by the Contractor for use in the work, or selected for the same by him shall be condemned by the Engineer as unsuitable or not in conformity with the Specifications, the Contractor shall forthwith discard such materials and remove them to a satisfactory distance from the vicinity of the work.

If the Contractor fails or neglects to make ordered repairs to defective work, or to remove rejected materials from the work site within 10 days after notification by the Engineer, the Engineer acting on behalf of the CITY may make the ordered repairs or remove the condemned materials and deduct the cost thereof from monies due to the Contractor.

ARTICLE 4.08 EQUIPMENT AND PLANT: Equipment not suitable to produce the quality of work required will not be permitted to operate on the project.

Plants, tools and equipment shall be designed and constructed in accordance with general practice for such equipment and shall be of sufficient capacity and of such character to insure the production of sufficient material to take the work to completion within the scheduled time frame. The Contractor shall provide adequate and suitable equipment and plants to meet the above requirements and when ordered by the Engineer shall remove unsuitable equipment from the worksite and discontinue receiving materials from unsatisfactory plants.

ARTICLE 4.09 ADDITIONS OR OMISSIONS OF WORK, LABOR OR MATERIALS:

Subdivision 4.09.1: Additions: The Contractor shall make additional excavations, furnish and place additional imported borrow, plant-mixed surfacing, concrete or do other additional work or furnish other additional materials where the necessity for or the extent of such work or materials does not appear and cannot with reasonable diligence, cost and certainty, be determined in advance or will only be disclosed by the doing of the work or in any contingency which reasonable care and consideration could not be foreseen. Such additional work or materials shall be specified in writing by the Engineer, subject to approval of the CITY COUNCIL, and shall be paid for at the unit prices set for in the contract.

Subdivision 4.09.2: Omissions: The Contractor shall omit any portion of the work, labor or materials required to be done or furnished under the plans and the specifications when the necessity for the omission of said work, labor or materials does not appear and cannot with reasonable certainty, diligence and cost be ascertained in advance or will only be disclosed by the doing of the work or in any contingency which reasonable care and consideration could be foreseen; which said omission of work, labor or materials shall be specified and required in writing by the Engineer, subject to the approval of the CITY COUNCIL, and shall be deducted from the contract price at the unit prices therefore set forth in said contract. Where the contract price is a lump sum, then the cost of the amount deducted shall be proportion of said lump sum such as the quantity of work, labor or materials omitted bears to the quantity upon which said lump sum is based. If omission of work exceeds 25% of the Contract Price, the Contractor may be compensated by retaining a maximum 5% of the amount in excess of the 25% of the omitted work at the unit prices set forth in said contract.

Subdivision 4.09.3: Mark-Ups For Extra Work: The Contractor shall use the specified mark ups for all approved extra work:

For General Contractor's work, 15% mark-up for materials and equipment; and 20% mark-up for labor.

For Subcontracted work, 10% mark-up for the first $5,000; and 5% mark-up for costs in excess of $5,000.

Subdivision 4.09.4: Tool and Equipment Rental: The rates to be used in determining equipment rental costs shall be as listed in the Caltrans "Labor Surcharge and Equipment Rental Rates" publication in effect at the time of bid.

ARTICLE 4.10 FINAL INSPECTION: The Engineer will not make the final inspection until the work provided and contemplated by the contract has been completed and the final clean-up performed.

ARTICLE 4.11 CONTRACTOR REPORTING REQUIREMENTS: The following items shall be required as a part of Contractor payment requests. Incomplete submittal or omission of any of the following requirements shall be cause for rejection and return of payment requests to the Contractor for correction. All items shall be complete and current to the satisfaction of the Engineer. The Contractor shall provide all information for his own firm as well as each and every subcontractor. Payment requests shall include at least the following items:

- Breakdown of each pay item showing locations and quantities of work requested for payment.
- Certification that the as-built records are current and documented in writing.
- Certified Payroll Reports.
- Updated work schedule.
- All change order requests complete to date, including all Force Account cost supporting documentation.
- Copies of all SWPPP and other Best Management Practices reports, and certification that BMP's are current and implemented.
- Copies of test results (if testing is required of Contractor).
- Survey records, maps, cut sheets, calculations, and other data.
- Subcontractor Change Requests and subcontractor data.
- Other forms or reports as may be required by contract.

ARTICLE 4.12 PENALTIES: Notwithstanding penalty provisions elsewhere in these specifications, the CITY may impose financial penalties in the case of the Contractor not fulfilling his contractual obligations. These obligations include, but are not limited to, performing work within the time limits of the contract; public notification; implementation of Best Management Practices, SWPPP, and other management plans; maintaining records; notification of the Engineer; traffic control; safety; controlling the work area; maintaining a competent supervisor on site at all times while performing work; surveying; testing; updating of schedules; and other such contractual obligations. The Contractor shall be responsible for all obligations and penalties applied to subcontractors as if he himself were performing the work.

The amount of penalty shall be equal to the daily liquidated damages, prorated for each 15-minute period, or portion of 15 minutes, of contract violation. Each violation shall be additive if multiple violations occur during the same time period.

ARTICLE 4.13 CLEANUP, TRAFFIC CONTROL, SAFETY: The Contractor shall maintain complete liability and responsibility for implementing project site cleanliness, traffic control, and safety at all times. If, in the opinion of the Engineer or his designated representative, there is a condition warranting corrective action by the Contractor, the Contractor will be advised and requested to correct the condition to the satisfaction of the Engineer. This requirement in no way absolves the Contractor of any obligation or duty to provide for the safety of persons and property at all times, nor does it impose any obligation or duty on the Engineer to provide any such services or advisement.

The Contractor's supervisor will not leave the project site until he has personally inspected and verified that all cleanliness, traffic control, and safety conditions are in a suitable condition, and has informed the Engineer that he has performed such an inspection. Likewise, no work may commence at the beginning of the work day until all cleanliness, traffic control, and safety measures and procedures have been reviewed, discussed, and implemented by the supervisor with all of the Contractor's and subcontractor's forces.

In the event that the Contractor does not immediately respond to the Engineer's request for corrective action, and the situation presents a hazard to persons and/or property, the Engineer may cause the work to be corrected by others. Likewise, in the event that the Contractor is not on site, cannot immediately respond, or is otherwise unavailable, the Engineer may cause the work to be corrected by others. If corrective work is performed by others, then the Contractor may be charged for all of the costs, including overhead and indirect costs, required to correct the work. Inspector's costs shall be per Article 4.06 INSPECTION. Engineer's costs shall be 1.5 times the noted Inspector's rate. In addition, the Engineer may impose additional penalties as provided for elsewhere in these specifications.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 4.14 REMOVAL OF PERSONNEL: The Engineer reserves the right to direct the Contractor to remove any specified personnel from the project at any time without reason. If directed, the Contractor shall immediately remove such personnel from the project site, and replace such with another competent person. This requirement shall apply to subcontractor personnel as if they were the Contractor's personnel. Violation shall be subject to penalties as noted elsewhere in these specifications.

SECTION 5. CONTROL OF MATERIAL

ARTICLE 5.01 DRAWINGS AND INFORMATION REQUIRED OF CONTRACTOR: The Contractor shall before proceeding with the fabrication or erection of structures or appurtenances if called for under the contract and required in its erection thereof, furnish the Engineer with the information regarding same and shall submit to the Engineer for approval drawings, specifications, lists and graphs as required under these specifications. Said drawings, specifications, lists and graphs shall become the property of the CITY. In the event that the Engineer shall find that the drawings, specifications, lists and graphs as submitted by the Contractor, are in accordance with acceptable practice and meet the requirements of these specifications, the Engineer will return one (1) set of drawings and lists with his approval within 10 days after their receipt at the Engineer's office; otherwise, said drawings will be returned to the Contractor within the said 10 day period with a statement of the points wherein they have been found unsatisfactory, in which case, the Contractor at his own expense, shall proceed at once to revise said drawings and lists until they shall be found satisfactory by the Engineer and are approved by him. No fabrication shall be done prior to approval of drawings and lists. The Contractor shall have no claim for damages or extension of time on account of any delay due to revision of drawings as found necessary by the Engineer in order to fulfill the requirements of these specifications; but, regardless of such delays, the Contractor shall be liable to the CITY as provided in the specifications for any failure to complete the work as required by the terms of the contract. Revisions shown on shop drawings shall be considered as changes necessary to meet the requirements of specifications and shall not be taken as the basis of claims for extra work.

The approval of all drawings by the Engineer shall apply to general design only and shall in no way relieve the Contractor from responsibility for errors or omissions contained therein; nor shall said approval operate to waive or modify any provisions or requirement contained in these specifications.

ARTICLE 5.02 SAMPLES AND TESTS: All tests of materials furnished by the Contractor shall be made by a laboratory authorized by the Engineer to make the tests and work involved in the contract. The expense of such tests shall be included in the prices bid for the work.

Tests shall be made in accordance with commonly recognized standards of national organizations and such special methods and tests as are described in the Standard Specifications.

No material shall be used until it has been approved by the Engineer. Samples will be secured and tested whenever necessary to determine the quality of materials.

Whenever reference is made in these specifications to standard tests or requirements of the American Society for Testing Materials, the reference shall be construed to mean the standards that are in effect at the date of these specifications.

ARTICLE 5.03 STORAGE OF MATERIALS: Materials shall be so stored as to insure the preservation of their quality and fitness for the work. When considered necessary by the Engineer, they shall be placed on wooden platforms or other hard, clean surfaces and not on the ground. They shall be placed under cover when so directed. Stored materials shall be so located as to facilitate prompt inspection.

ARTICLE 5.04 SUBSTITUTION OF EQUIVALENTS: On demand of the CITY COUNCIL, the Bidder shall, at his own expense, furnish information or data concerning the article, equipment, material or process offered by him as an equivalent to that specified; and, if the CITY COUNCIL shall so require, the Bidder, at his own expense, shall have the article, equipment, materials or process tested to its quality, strength, physical, chemical or other characteristics, its durability, finish, efficiency or service by a reputable testing engineer or laboratory satisfactory to the CITY COUNCIL.

Subdivision 5.04.1: Trade Names or Equals: In accordance with California Public Contract Code §3400(a), and as specified herein this Section, the Contractor shall submit its list of proposed substitutions for "an equal" ("or equal") item within 20 days after award of the contract. If an offered substitution by the Contractor for the trade names specified in the Contract necessitates changes to, or coordination with, other items of the Work, the information submitted shall include details showing such changes. The Contractor shall perform these changes as part of the substitution of material or equipment and at no additional cost to the CITY. The lack of action on the Engineer's side by taking no exceptions to the proposed substitution shall not relieve the Contractor from responsibility for the efficiency, sufficiency, quality, and performance of the substitute material or equipment, in the same manner and degree as the material and equipment specified by name.

Whenever materials or equipment are indicated in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the naming of the item is intended to establish the type, function, and quality required. Unless stated otherwise, materials or equipment of other Suppliers may be accepted if sufficient information is submitted to the Engineer for review to determine whether the material or equipment proposed is equivalent or equal to that named.

Request for approvals of "or equal" items prior to Bid Opening will not be considered. Bidders are responsible to ensure their Bid includes the price required for the item as specified, and assumes all risk in including a price for an "or equal" item that is not approved by the Engineer, and any additional cost associated with furnishing and installing the item as specified in the specifications or plans.

The Contractor may bring forward a substitution proposal for an "or equal" item provided the request and supporting documentation is submitted within 20 days of contract award. The following information shall be included with any substitution request:

Whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents to adopt the design to the proposed substitute.

Whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty.

All variations of the proposed substitute from the items originally specified will be identified.

Certification that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, and be similar and of equal substance to that indicated, and be suited to the same use as that specified.

There is no guaranteed time frame for the Engineer's review of the substitution requests.

The Contractor is responsible to demonstrate that the type, function, and quality of any such substitute product, material or equipment is equivalent to the specified item. The Engineer shall require at the Contractor's expense additional data about the proposed substitution he deems necessary.

If the Engineer takes no exceptions to the proposed substitution, it will not relieve the Contractor from responsibility for the efficiency, sufficiency, quality, and performance of the substitute material or equipment, in the same manner and degree as the material and equipment specified by name.

The lack of any action by the Engineer does not constitute acceptance of the substitution; all approved "or equal" substitutions must be approved in writing by the Engineer.

Acceptance by the Engineer of a substitute item does not relieve the Contractor of the responsibility for full compliance with the Contract Documents.

The Bid submittal must be based on the material and equipment specified by name per the Special Provisions and/or the Project plans for the Vista Grande Park Improvements, Project No. 2-P-22. If the proposal is rejected by the Engineer, you will not be entitled to either an extension in Contract Time, and/or an increase in the Contract Price.

As applicable, no Shop Drawing or Working Drawing submittals will be made for a substitute item nor will any substitute item be ordered, installed, or utilized without the Engineer's prior written approval.

Whether approved or disapproved, the Contractor must reimburse the CITY for the charges of the Engineer for evaluating each proposed substitution.

SECTION 6. LEGAL RELATIONS AND RESPONSIBILITIES

ARTICLE 6.01 LAWS TO BE OBSERVED AND DISPUTE RESOLUTION:

Subdivision 6.01.1 Laws and Regulations: The Contractor shall keep himself fully informed of all Federal and State laws, County and CITY ordinances and regulations which, in any manner, affect those engaged or employed on the work, the materials used in the work or the conduct of the work. If any discrepancy or inconsistency should be discovered in this contract or in the Plans or Specifications herein referred to, in relation to any such law, ordinance or regulation, the Contractor shall forthwith report the same in writing to the Engineer. The Contractor shall, at all times, observe and comply with and shall cause all his agents and employees to observe and comply with all such applicable laws, ordinances and regulations in effect or which may become effective before completion of this contract. He shall protect and indemnify the CITY and its officers and agents against any claim or liability arising from or based on the violations of any such laws, ordinances or regulations whether by himself or by his employees or his subcontractors or their employees.

Except as otherwise explicitly provided in these specifications, all permits and licenses necessary to the prosecution of the work shall be secured by the Contractor at his own expense and he shall pay all taxes properly assessed against his equipment or property used or required in connection with the work.

All state laws, all county and CITY ordinances and regulations now imposed by competent authority and relating to any materials required to be furnished under these specifications and work required to be done hereunder, shall be deemed to be and hereby are made controlling and part of these specifications.

Subdivision 6.01.2 General: The Contractor shall keep himself fully informed of all existing state and national laws and municipal ordinances and regulations which in any manner affect those engaged or employed in the work, or the materials used in the work or which in any way affect the conduct of the work and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same.

Subdivision 6.01.3 Eight-Hour Law: Eight (8) hours labor constitutes a legal day's work. The Contractor shall forfeit as a penalty twenty-five dollars ($25.00) for each workman employed in the execution of the contract by the Contractor or any subcontractor under him for each calendar day during which such workman is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week

in violation of the provisions of the Labor Code and in particular, Section 1810 to Section 1815 thereof inclusive except that work performed by employees of Contractors in excess of eight (8) hours per day and forty (40) hours during any one week, shall be compensated at not less than one and one-half (1 ½) times the basic rate of pay as provided in Section 1815.

Subdivision 6.01.4 Prevailing Rate of Per Diem Wages: Pursuant to the provisions of Section 1773 of the Labor Code of the State of California, the Director of Industrial Relations has ascertained the general prevailing rate of wages and employer payments for health and welfare, vacation, pension and similar purposes applicable to the work to be done.

The Contractor shall comply with Labor Code Section 1775. In accordance with said section, the Contractor shall forfeit as a penalty to the CITY fifty dollars ($50.00) for each calendar day, or portion thereof, for each workman paid less than the stipulated prevailing rates for such work or craft in which such workman is employed for any work done under the contract by him or by any subcontractor under him in violation of the provisions of the Labor Code and in particular Labor Code Sections 1770 to 1780, inclusive. In addition to said penalty and pursuant to said Section 1775, the difference between such stipulated prevailing wage rates and the amount paid to each workman for each calendar day or portion thereof for which each workman was paid less than the stipulated prevailing wage rate shall be paid to each workman by the Contractor.

Subdivision 6.01.5 Certified Payroll: Pursuant to Section 1776 of the Labor Code, the Contractor and/or subcontractors shall submit weekly to the CITY for each week in which any contract work is performed a certified copy of all payroll records. Should the Contractor fail to provide such payroll certificates, the CITY may withhold one thousand dollars ($1,000) for each weekly payroll certificate not received from payment due.

Subdivision 6.01.6 Governing Law, Venue, Dispute Resolution and Attorney's Fees: This Agreement will be governed by and construed in accordance with laws of the State of California. Specifically, Government Code Section 9204 (A summary of which is set forth in Subdivision 6.01.7). If any disputed portion of the claim is not resolved with the procedure set forth in Subdivision 6.01.7 herein, prior to commencing suit in a court of competent jurisdiction, any unresolved portion of any controversy, dispute or claim arising out of the Agreement will first be submitted to an alternative dispute resolution process as set forth in Subdivision 6.01.8 herein. Any action at law or in equity brought by either of the parties hereto for the purpose of enforcing a right or rights provided for by this Agreement will be tried in a court of competent jurisdiction in the County of Orange, State of California. In the event either party hereto will bring suit to enforce any term of the Agreement or to recover any damages for and on account of the breach of any term or condition of the Agreement, it

is mutually agreed that the prevailing party in such action will recover all costs thereof, including reasonable attorney's fees, to be set by the court in such action.

Subdivision 6.01.7 Summary of Government Code Section 9204: A "claim" is a separate demand on the CITY by a Contractor on a public works project and sent by registered mail or certified mail with return receipt requested, for one or more of the following:

- A time extension, including relief from penalties for delay;
- Payment by the CITY of money damages under the terms of the contract;
- Payment of an amount that is disputed by the CITY.

Initial Review. The claim must be supported by appropriate documentation. The CITY has forty-five (45) days within which to review the claim and provide the Contractor with a written statement identifying the disputed and undisputed portions of the claim. If the CITY does not issue a written statement, the claim is deemed rejected in its entirety. The CITY will pay any undisputed portion of the claim within sixty (60) days of issuing the statement.

Meet & Confer. If the Contractor disputes the CITY's written response, or if the City does not issue one, the Contractor may request in writing an informal conference to meet and confer for possible settlement of the claim. The CITY will schedule the meet and confer conference within thirty (30) days of this request and provide a written statement identifying the remaining disputed and undisputed portions of the claim within ten (10) business days of the meet and confer. The CITY will pay the undisputed portion within sixty (60) days of issuing this statement.

Mediation. With respect to any disputed portion remaining after the meet and confer, the CITY and Contractor must submit the matter to nonbinding mediation, agree to a mediator within ten (10) business days after issuing the written statement, and share mediation costs equally. If mediation is unsuccessful, then the terms of the public works agreement and applicable law will govern resolution of the dispute.

Miscellaneous Provisions. Amounts not paid by the CITY in a timely manner bear interest at 7% per annum. Subcontractors may submit claims via this procedure through the general contractor. The CITY and Contractor may waive the requirement to mediate, but cannot otherwise waive these claim procedures.

Subdivision 6.01.8 Alternative Dispute Resolution: In the event that there is any controversy, dispute or claim arising out of or relating to this Agreement, which have not been resolved pursuant to the process summarized in Subdivision 6.01.7 herein, the parties hereto will consult and negotiate with each other and, recognizing their mutual interest, attempt to reach a solution satisfactory to both parties. If they do not reach settlement

within a period of sixty (60) days, the matter will be submitted to nonbinding arbitration ("Process") by written notice from either party to the other. The parties will meet and confer in good faith and select an arbitrator that is agreeable to both sides. The Process will be completed no later than one hundred twenty (120) days ("Process Period") after tender of the aforementioned written notice, unless the Parties mutually agree to an extension of the Process Period. If the matter is not successfully resolved by the Process, within the Process Period, the parties are free to commence litigation in a court of competent jurisdiction as defined in Subdivision 6.01.6 herein. Any litigation commenced without both parties' consent prior to the end of the Process Period, will be subject to a stay until the end of the Process Period. The Parties further agree to equally bear the cost of the Process.

ARTICLE 6.02 PERMITS AND LICENSES: The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notice necessary and incident to the due and lawful prosecution of the work. No fee is charged for an Encroachment Permit issued by the CITY for a Public Works Project. The Contractor shall pay the necessary fees (except the Building Permit fee) to obtain a Building Permit including but not limited to preparing wet–stamped engineering drawings, site plans and structural calculations deem necessary by the Building Division. The Contractor shall submit a Building Permit application within five (5) working days after the award of Contract by the City. The Contractor and his subcontractors shall obtain a CITY Business License.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 6.03 PATENTS: The Contractor shall assume all costs arising from use of patented materials, equipment, devices or processes used on or incorporated in the work and agrees to indemnify and save harmless the CITY, the CITY COUNCIL, the City Engineer and their fully authorized representatives from all suits of law or actions of every nature for, or on account of, the use of any patented materials, equipment, devices or processes.

ARTICLE 6.04 PRESERVATION OF PROPERTY: The Contractor shall conduct the operations in a careful and prudent manner to avoid damage to adjacent property.

The Contractor shall preserve and protect all on-site and roadside trees from injury. All trees useful for shade or other purposes shall be cared for by the Contractor and no trees within the limits of project site shall be cut or removed unless indicated on the plans.

All fences along the line of the improvement shall be protected by the Contractor; if they are injured or destroyed they shall be restored to a condition as good as when he entered upon the work. It is required that the Contractor replace in kind or reimburse the owners thereof

for all fences, shrubs, buildings and other improvements damaged or removed by the construction operations not shown on the plans.

The Contractor shall preserve and protect from damage to all buildings, pole lines, pipe lines and all direction, warning and mileage signs and any other structures which have been placed within the limits of the project site.

Full compensation for conforming to the requirements in this article shall be considered as included in the price bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 6.05 PRESERVATION OF MONUMENTS: The Contractor shall not disturb any monuments, stakes or sign posts found on the line of the improvement until authorized by the Engineer. The Contractor shall bear the expense of resetting any monument, stakes or sign posts which may be disturbed without authorization from the Engineer. After construction and prior to final acceptance, the Contractor's land surveyor or qualified Civil Engineer shall re-survey all field monuments and centerline ties within the construction zone, prepare tie sheets and Corner Record sheets, and file them with the City Engineer for review. After review by the City Engineer, the land surveyor shall file the Corner Records with the Orange County Land Surveyors Office as required by law, and file certified copies of the Corner Records with the City Engineer. Project retention will not be released until all records are recorded with the County Land Surveyor Office.

ARTICLE 6.06 RESPONSIBILITY FOR DAMAGE: During the progress of the work, the CITY will not be answerable or accountable, in any manner, for any loss or damage that may happen to the work or any part thereof; or for injury to any person or persons, either workmen or the public, or for damage to adjoining property from any cause which might have been prevented by the Contractor or his workmen or any one employed by him, against all of which injuries or damages to persons and property the Contractor having control over such work must properly guard. The Contractor shall be responsible for any damage to any person or property resulting from defects or obstructions or from any causes whatsoever during the progress of the work, or at any time before its completion and final acceptance and shall indemnify and save harmless the CITY and/or its officers and/or its employees from all suits or actions of every name and description brought for or on account of any injuries or damages received or sustained by any person or persons by or from the Contractor, his servants or agents in the construction of the work or by or in consequence of any negligence in guarding the same in improper materials used in its construction or by or on account of any act or omission of the Contractor or his agents.

ARTICLE 6.07 COOPERATION BETWEEN CONTRACTORS: Where two or more contractors are employed on related or adjacent work, each shall conduct his operations in such a manner as not to cause any unnecessary delay or hindrance to the other. Each contractor shall be

responsible to the other for all damage to work, person or property or for loss caused by failure to finish the work within the time specified for completion.

ARTICLE 6.08 CONTRACTOR'S RESPONSIBILITY FOR WORK: Except as provided above, until the formal acceptance of the work by the CITY COUNCIL, the Contractor shall have the charge and care thereof and shall bear the risk of injury or damage to any part thereof by the action of the elements or from any other cause whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore and make good all injuries or damages to any portion of the work occasioned by any of the above causes before its completion and acceptance and shall bear the expense thereof except for such injuries or damages as occasioned by acts of the Federal Government and the public enemy. In case of suspension of work from any cause whatever, the Contractor shall be responsible for all materials and shall properly store them, if necessary, and shall provide suitable drainage of the project site and erect temporary structures where necessary.

ARTICLE 6.09 NO PERSONAL LIABILITY: Before the contract is executed on behalf of the CITY, a bidder to whom the contract has been awarded shall furnish to the CITY a policy or certificate of protective liability insurance in which the CITY shall be named as an additional insured with the bidder. The policy shall insure the CITY, his officers, and his employees; the bidder, his employees and his subcontractors and their employees, their heirs, agents and employees; while acting within the scope of their duties against all claims arising out of or in connection with the work to be performed and shall remain in full force and effect until the work is accepted by the CITY. The policy shall provide for the following limits:

Public liability insurance in an amount not less than $5,000,000.00 for injuries including accidental death for any one person and subject to the same limit for each person in an amount not less than $5,000,000.00 on account of any one accident.

Property damage insurance in an amount not less than $5,000,000.00 each occurrence and $5,000,000.00 aggregate.

All insurance issued in compliance with this section shall be insured in the form and by the insurer or insurers satisfactory to and first approved by the CITY in writing. The Contractor shall not allow any subcontractor to commence work on his subcontract until the subcontractor has secured all required bonds and insurance.

ARTICLE 6.10 WORKER'S COMPENSATION INSURANCE: The Contractor shall procure and maintain Worker's Compensation Insurance as required by applicable state or territorial law for all of his employees to be engaged in work at the site of the project under this Contract. In case of any such work sublet, the Contractor shall require the subcontractor similarly to provide Worker's Compensation Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's

Worker's Compensation Insurance. In case any class of employees engaged in hazardous work on the project under this Contract is not protected under the Worker's Compensation Statute, the Contractor shall provide and shall cause each subcontractor to provide adequate employer's liability insurance for the protection of such of his employees as are not otherwise protected.

The Contractor and/or subcontractor shall file a copy of their Certificate of Compensation Insurance with the CITY and no work shall begin until such certificate is filed with the CITY. In the event of cancellation, the insurance company shall give the CITY ten (10) days written notice.

ARTICLE 6.11 SUBCONTRACTING: Attention is directed to the provisions in Section 1-6.2, "Subcontractor Listing", of the Standard Specifications and these Special Provisions.

In accordance with the requirements of Sections 4100 to 4133 inclusive of the Public Contract Code, each bidder shall list in his Proposal the name and business address of each subcontractor to whom the bidder proposes to subcontract all or a portion of work and shall list each subcontractor licensed by the State of California proposed by the bidder to specially fabricate and install all or a portion of the work. Said list shall include a description of the portion of the work which will be done by each subcontractor.

A sheet for listing the subcontractors as required is included in the proposal. The successful responsible bidder shall submit a letter to the CITY requesting approval of all subcontractors. Included in the letter shall be a list of the names and addresses of each Contractor, items to be subcontracted by item number, brief description of the item, and contract bid value. If only a portion of the item is to be subcontracted, that portion and dollar value of work, based on contract item bid value, shall be indicated.

No subcontractor shall be permitted to perform any work under the contract without having first been approved, in writing, by the CITY.

ARTICLE 6.12 TRESPASS: The Contractor shall be responsible for all damage or injury which may be caused on any property by trespass of the Contractor's employees in the course of their employment whether the said trespass was committed with or without the consent or knowledge of the Contractor.

ARTICLE 6.13 SAFETY, SANITARY AND MEDICAL REQUIREMENTS: The Contractor, his employees, his subcontractors and their employees shall promptly and fully carry out the existing safety, sanitary and medical requirements as may from time to time be prescribed by the Industrial Safety Commission and by County or State Health Departments to the end that proper work shall be done and the safety and health of the employees and of the community may be conserved and safeguarded. In case any such regulations and orders

are not observed by the Contractor, they may be enforced by the Engineer at the Contractor's expense.

ARTICLE 6.14 WATER AND POWER: Unless otherwise provided in the Special Provisions, the Contractor shall provide, at his own expense, all necessary water and power required for his operations under the contract.

ARTICLE 6.15 PROTECTION OF UNDERGROUND FACILITIES: Attention is directed to the possible existence of underground facilities not known to the CITY or in a location different from that which is indicated on the plans or in these Special Provisions. The Contractor shall take steps to ascertain the exact location of all underground facilities prior to doing work that may damage such facilities or interfere with their service. If the Contractor discovers underground facilities not indicated on the Plans or in these Special Provisions, he shall immediately give the Engineer written notification of the existence of such facilities. Such facilities shall be protected from damage as directed by the Engineer and the Contractor will be paid for such work as extra work as provided in Section 7-4, "Payment for extra work" of the Standard Specifications.

ARTICLE 6.16 AIR POLLUTION CONTROL: Section 3-12.2, "Air Pollution Control", of the Standard Specifications is supplemented by the following:

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

In the absence of any applicable air pollution control rules, regulations, ordinances or statutes governing solvents, all solvents, including but not limited to the solvent portions of paints, thinners, curing compounds, and liquid asphalt used on the project shall comply with the applicable material requirements of the County Air Pollution Control District. All containers of paint, thinner, curing compound or liquid asphalt shall be labeled to indicate that the contents fully comply with said requirements.

ARTICLE 6.17 PROJECT APPEARANCE: The Contractor shall maintain a neat appearance to the work. In any area visible to the public, the following shall apply:

When practicable, broken concrete and debris developed shall be disposed of concurrently with its removal. If stockpiling is necessary the material shall be removed or disposed of on the next working day, except that stockpiles shall not be left in the public right of way on weekends or holidays.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 6.18 FAIR EMPLOYMENT PRACTICE COMMISSION CERTIFICATION: The Contractor's attention is directed to the requirements in Section 12990 of the Government Code for nondiscrimination and compliance employment programs.

ARTICLE 6.19 SOUND CONTROL REQUIREMENTS: The Contractor shall comply with all local sound control and noise level rules, regulations and ordinances which apply to any work performed pursuant to the Contract.

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

The noise level from the Contractor's operations between the hours of 7:30 a.m. and 4:00 p.m. shall not exceed 86 DBA at a distance of 50 feet. This requirement in no way relieves the Contractor from responsibility for complying with local ordinances regulating noise level.

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

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 6.20 LEGAL RELATIONS AND RESPONSIBILITY: The Contractor's attention is directed to the provisions of Section 5, "Legal Relations and Responsibilities", of the Standard Specifications and these Special Provisions for the requirements and conditions which he must observe in the execution of the work.

SECTION 7. PROSECUTION AND PROGRESS

ARTICLE 7.01 PROSECUTION AND PROGRESS: The Contractor's attention is directed to Section 6, "Prosecution and Progress of the Work", of the Standard Specifications.

ARTICLE 7.02 TIME LIMIT: The work specified herein and shown on the Plans and Specifications shall be completed within **two hundred and forty (240) working days, including lead-time referring to the amount of time that elapses between placing an order**

for an item and its delivery to the project site from the start date specified in the Notice To Proceed. Attention is directed to Section 3-13 and 6-9 of the Standard Specifications for Public Works Construction (The "Greenbook"), "Completion, Acceptance, and Warranty"; and "Liquidated Damages". The CITY shall withhold liquidated damages before the accrual date if the anticipated liquidated damages may exceed the value of the remaining work. Liquidated damages for all work except plant establishment are as shown in the following table:

Liquidated Damages

Total bid		Liquidated damages per day
From over	To	
$0	$50,000	$1,200
$50,000	$120,000	$1,500
$120,000	$1,000,000	$1,900
$1,000,000	$5,000,000	$3,000
$5,000,000	$10,000,000	$5,400
$10,000,00	$20,000,000	$9,720

If the total amount of working days have expired and the work is not complete, liquidated damages are one thousand five hundred dollars (**$9,720)** per calendar day.

SECTION 8. PAYMENTS

Within fifteen (15) workdays after the date of acceptance of the work the Engineer will cause to be filed on behalf of the CITY in the Office of the County Recorder a Notice of Completion of the work herein agreed to be done by the Contractor.

Upon expiration of thirty-five (35) days after the filing of such Notice of Completion of the work, the CITY will pay to the Contractor the amount remaining after deduction from the amount of value stated in the above-mentioned estimate all prior payments to the contract and all amounts to be kept and retained under the provisions of the Contract.

If the Contractor disagrees with the Engineer's final estimate and within said period of thirty-five (35) days files a written statement of his claims, the Engineer will issue as a semi-final estimate the proposed estimate submitted to the Contractor and the CITY will within thirty (30) days pay the sum found due thereon after deducting from the amount of value stated in the first mentioned estimate all prior payments to the Contractor and all amounts to be kept and retained under the provisions of the contract. The Engineer will then consider and investigate the Contractor's claim and will make such revision in the said estimate as he may find to be due and will then certify in writing to the City Clerk the whole amount and

value of the work done by the Contractor under and according to the terms of the contract. The CITY will pay the amount so found due after deducting all previous payments, amounts to be retained under the contract, and amounts which may be retained in accordance with the applicable specifications.

ARTICLE 8.01 PARTIAL PAYMENTS: At the request of the Contractor, partial payments will be made on a monthly basis. The Progress Pay requests shall be submitted on or before the 20th day of each month. The estimate may include only work completed up to and including this date.

Progress pay requests showing work not accomplished by the 20th day of the month shall be rejected.

ARTICLE 8.02 PAY RETENTION: From each progress estimate **five (5)** percent will be deducted and retained in accordance with Section 7-3.2 of the Standard Specifications.

ARTICLE 8.03 FINAL ESTIMATE AND PAYMENT: Whenever in the opinion of the Engineer the Contractor shall have completely performed the contract on his part the Contractor shall submit to the Engineer a written statement to the final quantities of contract items for inclusion in the final estimate.

All prior estimates upon which partial payments have been made shall be subject to correction in the final estimate. The final estimate and payments made thereunder shall be final and conclusive upon the Contractor.

ARTICLE 8.04 TAXES: No mention shall be made of sales tax or use tax, as all bid prices submitted shall be considered as including such tax.

SECTION 9. WORK SCHEDULES

ARTICLE 9.01 WORK SCHEDULE: Before the commencement of work, the Contractor shall submit a work schedule prepared using the latest version of Microsoft Project or approved equal to the Engineer for approval. The work schedule shall be submitted at least five (5) days prior to commencement of work or at the Pre-Construction Meeting, and shall be kept current through the progress of the work. The work shall be performed in order of their priorities and as directed by the Engineer.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

SECTION 10. CITY REQUIREMENTS

ARTICLE 10.01 FAIR EMPLOYMENT PRACTICES: In connection with the performance of work under this Contract, the Contractor agrees as follows:

1. The Contractor will not willfully discriminate against any employee or applicant for employment because of race, sex, color, religion, age, handicap status, or national origin. The Contractor will take affirmative action to ensure that the applicants are employed, and that employees are treated during employment, without regard to their race, sex, color, religion, age, handicap status, or national origin. Such action shall include, but not be limited to, the following: employment upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by awarding authority setting forth the provisions of this fair Employment Practices section.

2. The Contractor will send to each labor union or representative of workers with which he has collective bargaining agreement or other contract or understanding, a notice advising the said labor union workers' representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applications for employment.

3. The Contractor will permit access to his records of employment, employment advertisements, application forms, and other pertinent data and records the Fair Employment Practices Commission, the CITY or any other appropriate agency designated by the CITY for the purposes of investigation to ascertain compliance with the Fair Employment Practices section of this Contract.

4. The finding of willful violation of the Fair Employment practices section of this Contract or of the Fair Employment Practices Act shall be regarded by the CITY as a basis for determining the Contractor to be not a "responsible bidder" as to future contracts for which such Contractor may submit bids.

   The CITY shall deem a finding of willful violation of the Fair Employment Practices Act to have occurred upon receipt of written notice from the Fair Employment Practices Commission that it has investigated and determined that the Contractor has violated the Fair Employment Practices Act and has issued an order under Government Code Section 12970 or obtained an injunction under the Government Code Section 12973.

Upon receipt of such written notice from the Fair Employment Practices Commission, the CITY shall notify the Contractor that unless he demonstrates to the satisfaction of the awarding authority within a stated period that the violation has been corrected, his prequalification rating will be revoked at the expiration of such period.

5. The Contractor agrees, that should the CITY determine that the Contractor has not complied with the Fair Employment Practices section of this Contract, then pursuant to Labor Code Section 1735 and 1755, the Contractor shall, as a penalty to the Agency, forfeit for each calendar day, or portions thereof, for each person who was denied employment as a result of such non-compliance, the penalties provided in the Labor Code for violation of prevailing wage rates. Such monies may be recovered from the Contractor. The Agency may deduct any such damages from any monies due to the Contractor from the Contract.

6. a. Nothing contained in this Fair Employment Practices section shall be construed in any manner or fashion so as to prevent the CITY from pursuing any other remedies that may be available by law.

   b. Nothing contained in this Fair Employment Practices section shall be construed in any manner or fashion so as to require or permit the hiring of an employee not permitted by the National Labor Relations Act.

7. Prior to award of the Contract, the Contractor shall certify to the awarding authority that he has or will meet the following standards for affirmative compliance which shall be evaluated in each case by the CITY.

   a. The Contractor shall provide evidence, as required by the CITY, that he has notified all supervisors, foremen and other personnel officers in writing of the content of the anti-discrimination clause and their responsibilities under it.

   b. The Contractor shall provide evidence, as required by the CITY, that he has notified all sources of employee referrals (including unions, employment agencies, advertisements, Department of Employment) of the content of the anti-discrimination clause.

   c. Personally, or through his representatives, the Contractor shall, through negotiations with the unions with whom he has agreements, attempt to develop an agreement which will:

      (1) Spell out responsibilities for non-discrimination in hiring, referral, upgrading and training.

      (2) Otherwise implement an affirmative anti-discrimination program in terms of the union's specific areas of skill and geography, to the end

that qualified minority workers will be available and given an equal opportunity for employment.

d. The Contractor shall notify the CITY of opposition to the anti-discrimination clause by individuals, firms or organizations during the period of its prequalification.

8. The Contractor will include the provisions of the foregoing paragraphs 1 through 7 in every first-tier subcontract, so that such provisions will be binding upon each such subcontractor.

9. The Contractor, in executing the proposal, thereby certifies that he has or will meet the standards for affirmative compliance with the Fair Employment Practices requirements contained herein.

10. The Contractor shall comply with the procedures and conditions set forth in Section XII of the City of La Habra Affirmative Action Plan as adopted by Resolution 2404 of the City of La Habra January 21, 1975, a portion of which reads as follows:

"It shall be the policy of the City of La Habra to require all contractors and vendors doing business with the CITY in an amount in excess of $50,000.00 and/or 200 employees to certify their compliance with Title VII of the civil Rights Act and the Equal Employment Opportunity Act of 1972. Said certification shall be stipulated by the CITY to safeguard against discrimination by contractors or vendors on the basis of race, color, creed, sex, age, or nationality concerning the practices of recruitment, promotion, demotion, transfer, layoff, or termination. A violation of this non-discrimination certification will be considered a material provision violation and shall be grounds for termination or suspension, in whole or in part, of the contract by the CITY".

SECTION 11. CONSTRUCTION DETAILS

ARTICLE 11.01 GENERAL:

Subdivision 11.01.1 Description of Work: **The Work comprises furnishing all materials, equipment, tools, labor and incidentals per the Plans, Specifications, and Contract Documents for the project. See Special Provisions for detail scope of work.**

Subdivision 11.01.2 Order of Work: Order of work shall conform to the provisions of Section 6-1, "Construction Schedule and Commencement of Work," of the Standard Specifications for Public Works Construction (The "Greenbook") and these Special Provisions.
The following is a general order of work to be performed under this contract:

The first order of work shall be for the Contractor to pay the necessary fees (except the Building Permit fee) to obtain a Building Permit including but not limited to preparing wet-stamped engineering drawings, site plans and structural calculations as deem necessary by the Building Division. The Contractor shall submit a Building Permit application within five (5) working days after the award of Contract by the City.

The second order of work shall be the ordering of all materials requiring long lead-times referring to the amount of time that elapses between placing an order for an item and its delivery to the project site and consistent with the requirements of Section 5 of these Special Provisions. The Contractor shall order all long lead-time supplies, materials, and equipment, within five (5) working days after the obtaining the Building Permit.

The third order of work shall be to install the perimeter fence and include Storm Water Pollution Prevention Control BMP's.

The forth order of work shall be to install the necessary improvements and restore any damaged improvements to their original condition or better.

The Contractor shall determine the sequence of work necessary to diligently pursue completion of the work, in accordance with the Special Provisions.

Subdivision 11.01.3 Public Convenience and Access: The Contractor shall conduct his operations so as to cause minimum obstruction and inconvenience to the public.

At least five (5) days prior to commencing work, the Contractor shall submit to the City Engineer his construction schedule for approval in accordance with Section 9. The Contractor shall distribute to each resident or business affected by the construction a written notice at least ten (10) days prior to commencing construction. The notice shall include the date and working hours of construction. It shall be the Contractor's responsibility to complete the notification letter with the proper dates at the time of notification. If the Contractor fails to meet the schedule indicated in the Notice, the Contractor shall reschedule his work and re-notify the residents.

Should the Contractor appear to be neglectful or negligent in furnishing warning and protective measures, the Engineer may direct the Contractor's attention to the existence of such hazards. The Contractor shall provide all necessary warning and protective measures immediately, at his expense. Whether the Engineer points out the inadequacy of warning and protective measures or not, such action, or lack of action, on the part of the Engineer shall not relieve the Contractor from the responsibility for public safety or abrogate his obligation to furnish and pay for safety measures and devices. If attention is directed to the existence of a hazard, and the Contractor fails to provide an appropriate remedy, any

expense incurred by the CITY for furnishing or maintaining safety measures and devices may be deducted from the pay estimates and the total contract price for the work.

The Contractor shall be responsible for maintaining location of, and access to, all utility valves during construction operations.

The Contractor shall be responsible for maintaining location of, and access to, all pedestrian walkways, driveways, and all access at all times unless approved by the Engineer.

Traffic maintenance shall conform to the provisions in Section 5-7 "Safety" of the Standard Specifications and these Special Provisions (and as shown in the drawings).

Subdivision 11.01.4 Public Notice: The Contractor shall notify businesses and residents affected by the construction in writing not less than ten (10) days in advance of commencement of demolition, construction, or storage of materials in the street. The notice shall include but not be limited to:

1. The Time and Date of Commencement.
2. Date of Completion.

A copy of the letter shall be submitted to the City Engineer for approval prior to distribution.

The Contractor shall also notify La Habra Police Department, Los Angeles County Fire Department, Trash Hauler, Post Office, Ambulance Service, La Habra City School District, and Lowell Joint School District about the construction. It shall be the Contractor's responsibility to complete the notification letter, with the proper dates, at the time of notification. If the Contractor fails to meet the schedule indicated in the notice, the Contractor shall reschedule his work and re-notify all those listed above.

Subdivision 11.01.5 Hours of Work: All work shall be performed between 7:00 A.M. and 4:00 P.M., Mondays through Fridays except holidays. No work shall be performed outside normal working hours without advanced authorization from the Engineer. If work is adjacent to a school or on a major street, working hours will be restricted to 9:00 A.M. and 3:00 P.M., Mondays through Fridays except holidays. For any inspection outside of regular working hours, the Contractor shall pay all costs for the inspector's time. Request for overtime inspection shall be made in writing to the Engineer.

ARTICLE 11.02 FURNISH AND APPLY WATER: Should the Contractor require water for construction operations, such as for compaction and dust control, he may use water from any fire hydrant adjacent to the job site upon application of a "No Fee" permit from the CITY, Engineering Department. The Contractor shall apply water for dust control as necessary and as directed by the Engineer.

Prior to using water, the Contractor shall install a water meter, a valve and an approved back-flow prevention device on the fire hydrant at his expense. The Contractor shall notify the Los Angeles County Fire Department and the Public Works Department twenty-four (24) hours in advance, stating the location of the hydrant and the hours when it will be used. The Contractor shall operate the fire hydrant with a hydrant wrench only. Should damage occur to the hydrant, the Contractor shall make repairs at his expense and/or further use of CITY Water may be prohibited. The meter will be used for monitoring water use only. The Contractor will not be charged for water used on the project.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 11.03 DUST CONTROL: The Contractor shall at all times, including weekends, at his expense, control dust on the project. Should the Contractor fail to maintain adequate dust control, the CITY will maintain the site, and an amount equal to twice the actual cost shall be assessed to the Contractor.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 11.04 EXCESS EXCAVATED MATERIAL: Excess excavated material shall be removed from the site and disposed of by the Contractor at his own expense. Excavated material including base, rock and subgrade soils, shall be removed from the job site at the end of the work week. Failure to do so will result in the CITY removing material at the Contractor's expense. Cost shall be calculated at actual cost for labor and equipment plus administrative charges.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 11.05 STORAGE OF MATERIALS: The Contractor shall at all times carefully and properly protect all materials of every description both before and after being used in the work and provide any enclosing or special protection from the weather as deemed necessary by the Engineer.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 11.06 SOLID WASTE COLLECTION: If collection of solid waste shall occur during park construction, the Contractor shall assist the solid waste collection contractor in accessing containers for his collection of solid waste.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 11.07 APPURTENANT WORK: All items in the proposal form are considered as complete in place including all incidental and appurtenant work and materials necessary for the satisfactory completion of the same.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 11.08 STORAGE YARD: The Contractor shall at his expense provide a storage yard for his equipment, tools, and materials to be stored. Location of storage yard shall be approved by the Engineer.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 11.09 PUBLIC UTILITIES: It is the Contractor's responsibility to notify Underground Service Alert (USA) to locate facilities prior to beginning the work. In addition, the Contractor shall locate service laterals that may be affected by the work and take measures to protect all utilities and service laterals in the streets and parkways.

The Contractor shall determine for himself the exact location of all public and private utilities, facilities or substructures, which are not shown on the plans. In the event any utility, facility or substructure is disturbed or damaged, whether in its original or relocated position, the Contractor shall immediately cause repairs to be made to the satisfaction of the owner at no cost to the CITY.

The Contractor shall notify the utility companies at least forty-eight (48) hours prior to construction.

AT&T	YVETTE GAROFANO	(714) 618-9146
CALIFORNIA DOMESTIC WATER COMPANY	CHE VENEGAS	(562) 947-3811
CHEVRON USA	DAVE ZERLER	(310) 669-4014

CITY OF LA HABRA SEWER AND WATER DEPT	BRIAN JONES	(562) 383-4170
COMCAST CABLE COMPANY		(800) 501-5738
CRIMSON PIPELINE	APRIL HARVEY	(562) 285-4195
CR&R (WASTE HAULER)		(714) 372-8209
FRONTIER COMMUNICATIONS	ARIEL FATALA	(714) 375-6717
KINDER MORGAN	DON QUINN	(714) 560-4400
METROPOLITAN WATER DISTRICT	ERIC STRATTEN	(951) 505-0456
MOBIL OIL	TERI SHINDE	(310) 212-1794
ORANGE COUNTY SANITATION DISTRICT	DANIEL LEE	(714) 593-7176
PLAINS ALL AMERICAN PIPELINE	JOE MATTEO	(562) 728-2368
SO CAL EDISON	JIMMY PARKIN	(714) 578-3434
SO CAL GAS	JASON MORTON	(213) 312-5735
SHELL PIPE COMPANY	BRIAN DAVISON	(310) 629-8848
SUBURBAN WATER SYSTEMS	TOM MEDINA	(562) 755-5015
SPECTRUM	PARKER YEE	(562) 677-0213
TORRANCE LOGISTICS COMPANY	TERI A. SHINDE	(310) 212-1794
UNOCAL	DAVE ZERLER	(310) 669-4014
WESCON C/O VINTAGE PRODUCTION	EMILIO RODRIGUEZ	(562) 665-9255
UNDERGROUND SERVICE ALERT		(800) 422-4133

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 11.10 CONSTRUCTION SURVEY AND MONUMENTATION: The Contractor shall provide all labor, work and materials necessary to survey the work to conform to plan lines and limits, provide grades for drainage, establish pavement grades, match to existing conditions, and otherwise lay out the work as necessary for construction. The Contractor shall review and set all reference points, grades and elevations to the satisfaction of the Engineer prior to construction operations.

Prior to the start of construction, the Contractor's licensed land surveyor or registered Civil Engineer licensed to practice land surveying in the State of California shall, in conformance with California State Law AB 1414, locate all monuments (whether or not of record), bench marks, and centerline ties within the construction zone, i.e., within one hundred feet of the construction activity. Additional ties to monuments shall be set when ties are missing (min. 4 ties per monument.) The Contractor's surveyor or qualified Civil Engineer shall prepare and submit for review to the Engineer separate tie sheets and Corner Record sheets (monuments not of record shall have only tie sheets prepared.) Tie sheets and Corner Records shall conform to the County Standards and the County Engineers' Association of California's "Guide to the Preparation of Records of Survey and Corner Records" document

as provided by the County of Orange Land Surveyor's Office. Upon review by the Engineer, the Land Surveyor shall file the Corner Records with the County of Orange Land Surveyor's Office. Certified Corner Records shall be filed with the Engineer of the City of La Habra.

After construction and prior to final acceptance by the CITY of the construction project, the Contractor's land surveyor or qualified Civil Engineer shall re-survey all field monuments and centerline ties within the construction zone, prepare tie sheets and Corner Record sheet as indicated above, and file them with the City Engineer for review. After review by the City Engineer the land surveyor shall file the Corner Records with the County Land Surveyors Office, and file certified copies of the Corner Records with the City Engineer.

All survey monuments removed or altered as a result of construction shall be reset, Corner Records filed with the County of Orange Land Surveyor's Office, and approved final Corner Records filed with the Engineer. Centerline ties removed as a result of construction shall be reset and tie sheets filed with the Engineer.

The land surveyor shall provide a letter of certification for all monuments having four or more existing ties which are within 0.02 ft plus or minus of the original CITY tie sheet records. When several monuments are ties appear on one tie sheet and one of the ties has changed the land surveyor shall re-measure all of the ties and re-file a new tie sheet with the CITY as required herein.

County of Orange permanent and temporary bench marks within the construction zone shall be located by survey, and the Contractor's Land Surveyor shall send a written notification of impending construction to the County of Orange Land Surveyor's Office two weeks prior to construction.

Lines and grades for the construction shall be the responsibility of the Contractor, with the following provisions:

All work under this contract shall be built in accordance with the lines and grades shown on the plans. Field survey for establishing these, and for the control of construction, shall be the responsibility of the Contractor. All such survey work including construction staking shall be done under the supervision of a California Licensed Land Surveyor or authorized Civil Engineer. Staking shall be done on all items ordinarily requiring grade and alignment, at intervals normally accepted by the agencies and trade involved.
The Contractor shall provide a copy of the office calculations and grade sheets to the Engineer. The Contractor shall be responsible for any errors in the finished work, and shall notify the Engineer, in writing, within twenty-four (24) hours, of any discrepancies, or design errors during the construction staking.

Contractor shall provide construction surveying for relocation of any conflicting utilities and provide a reasonable time window of opportunity to the utility owners to relocate their facilities after the survey is provided by the Contractor.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 11.11 WASTE MANAGEMENT: The Contractor shall comply with the requirements of AB939 and City of La Habra Construction and Demolition Ordinance, and submit a Waste Management Plan for the approval of the Engineer.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 11.12 PUBLIC CONVENIENCE AND SAFETY: At least five (5) working days prior to commencing work, the Contractor shall submit its construction schedule to the Agency for approval. This schedule shall allow residents on the streets to park within a reasonable distance from their homes. Based upon the construction schedule, the Contractor shall notify residents and businesses of the work and post temporary "No Parking" signs. Requests for changes in the schedule shall be submitted by the Contractor to the Engineer for approval at least forty-eight (48) hours prior to the commencement of work.

The Contractor shall be responsible for adequate barricading of the work area and controlling of traffic in the vicinity of the project as specified in 5-7, "Safety" in the Standard Specifications or as directed by the Engineer.

Closures and parking restrictions shall only be made for the amount of time necessary to complete construction activities. Areas that do not have active construction work shall be secured and reopened as directed by the Engineer. Extents of closures and parking restrictions shall be limited to areas as necessary for immediate construction activities.

The Contractor's operations shall cause no unnecessary inconvenience. The access rights of the public shall be considered at all times. Unless otherwise authorized, traffic shall be permitted to pass through the Work, or an approved detour shall be provided.

Safe and adequate pedestrian and vehicular access shall be provided and maintained to: fire hydrants; commercial and industrial establishments; churches, schools, and parking lots; service stations and motels; hospitals; police and fire stations; and establishments of similar nature. Access to these facilities shall be continuous and unobstructed unless otherwise approved by the Engineer.

Vehicular access to residential driveways shall be maintained to the property line except when necessary construction precludes such access for reasonable periods of time. If backfill has been completed to the extent that safe access may be provided, and the street is opened to local traffic, the Contractor shall immediately clear the street and driveways and provide and maintain access. The use of steel plates may be required to provide access.

The Contractor shall cooperate with the various parties involved in the delivery of mail and the collection and removal of trash and garbage to maintain existing schedules for these services.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 11.13 BID SCHEDULE: The quantities and sizes of materials shown in the bid schedule are for bid purposes only. The actual quantities used for construction and payment purposes shall be measured and determined by the CITY.

ARTICLE 11.14 EARTHWORK: Earthwork shall conform to the requirements of Section 300, "Earthwork" of the Standard Specifications and shall include all demolition, saw-cut, excavation, grading, removal, disposal, backfilling or any other work necessary to prepare the sub-grade for construction of improvements.

Full compensation for conforming to the requirements in this article shall be considered as included in the prices bid for the various contract items of work involved and no additional compensation will be allowed therefor.

ARTICLE 11.15 TRENCHING: (Public Contracts Code Section 7104) If the herein public works contract involved digging trenches or other excavations that extend deeper than four feet below the surface the Contractor shall promptly, and before the following conditions are distributed, notify the local public entity, in writing, of any:

1. Material that the Contractor believes may be material that is 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 provisions of existing law.
2. Subsurface or latent physical conditions at the site differing from those indicated by information about the site made available to bidders prior to the deadline for submitting bids.

3. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.
4. The CITY shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the work shall issue a change order under the procedures described in the contract.
5. That, in the event that a dispute arises between the CITY and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the work, the Contractor shall not be excused from any scheduled completion date provided for by the contract, but shall proceed with all work to be performed under the contract. The Contractor shall retain any and all rights provided either by contract (Section 6.01.6 of the herein Special Provisions) or by the law which pertain to the resolution of disputes and protests between the contracting parties.

****END OF GENERAL PROVISION****

SPECIAL PROVISIONS

CIVIL IMPROVEMENTS (SHEETS C-001 THROUGH C-505 OF PROJECT PLANS)
SECTION 01 00 00
PROJECT SUMMARY & MOBILIZATION

PART 1 - GENERAL

1.1 Summary

(a) This section summarizes the project scope and mobilization/demobilization requirements. Detailed requirements are included in the applicable Specification sections and on the Construction Drawings.

1.2 Mobilization/Demobilization

(a) Mobilization shall consist of expenditures for all preparatory work and operations, including but not limited to, Project construction sign, bond and insurance costs; those costs deemed necessary for the movement of personnel, equipment, supplies, and incidentals to the project sites; 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 as well as the related demobilization costs anticipated at the completion of the project.

1.3 Definitions

(a) Owner: City of La Habra (City) or its duly authorized representative.

(b) Construction Manager (CM): The firm under contract with City to perform construction management for the project.

(c) Inspector: The City representative performing the observation and inspection, to ensure the work is performed in accordance with applicable codes, regulations, specification requirements, and applicable industry standards. For the landfill related improvements, the inspector may also be referred to the Construction Quality Assurance (CQA) Monitor.

(d) Contractor: The entity that has entered into a contract with the City to perform the work as required by these Plans and Specifications, as described in City Contract Documents.

(e) Subcontractor: The entity that has entered into a contract with Contractor to perform a portion of the work as required by these Plans and Specifications, as described in City Contract Documents.

(f) Engineer: The firm that prepared the design drawings and specifications for this project is:

Tetra Tech
21700 Coley Drive, Suite 200
Diamond Bar, CA 91765
Contact: Greg Saul
Main: (909) 860-7777
Direct: (909) 655-3266
E-mail: Greg.Saul@tetratech.com

(g) Quality Control: Those actions which provide a means to measure and regulate the characteristics of an item or service to comply with the requirements of the contract documents. The Contractor is responsible for Quality Control (QC) of all operations in accordance with applicable codes, regulations, specification requirements, and applicable industry standards.

1.4 Interpretation of Contract Documents

(a) Specifications and Construction Drawings included in these Contract Documents describe the performance, quality requirements, location and general arrangement of materials and equipment, and establish the minimum standards for quality of workmanship and appearance.

(b) A part of the Work that is necessary or required to make each installation satisfactory and operable for its intended purpose, even though it is not specifically included in the Specifications or on the Drawings, shall be performed as incidental Work as if it were described in the Specifications and shown on the Construction Drawings.

1.5 Project Description

(a) The project consists of earthwork, placement of AC pavement, concrete hardscape, modifications to the landfill gas system, construction of park facilities, installation of prefabricated restroom building, park lighting, park irrigation and planting, and other miscellaneous improvements.

(b) Work of This Contract

(i) Except as otherwise specifically stated in applicable parts of these Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment, facilities, and services necessary for proper execution, testing, and completion of the Work.

(ii) The completed Work will provide the Owner with improvements which includes an operations deck for composting operations.

(c) The above description of the Work is for general information only, and in no way, limits the responsibility of the Contractor for accomplishing the Work in strict accordance with the Contract Documents.

1.6 Meetings and Coordination

(a) Preconstruction meeting will be conducted between the Owner, Design Engineer, and Contractor. Specification requirements for sequencing of construction will be reviewed and discussed. The Contractor shall present a construction plan for each construction sequence, as applicable, outlining the equipment, personnel, schedule, and materials required.

(b) The Contractor will be required to attend and participate in weekly construction meetings to review the schedule, specification requirements, quality control requirements, and other concerns involved.

1.7 Manufacturers' Specifications and Instructions

(a) Unless otherwise indicated or specified, all manufactured materials, products, processes, equipment, or the like shall be installed or applied in accordance with the manufacturers' instructions, directions, or Specifications. Said 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. Copies of such instructions shall be furnished to the Design Engineer and his acceptance thereof obtained before Work is begun.

(b) Any deviation from the manufacturers' printed recommendations shall be explained and acknowledged as correct for the circumstances, in writing by the particular manufacturer. The Contractor will be held responsible for all installations not conforming to the manufacturers' recommendations. If any item of material or equipment is found to be installed not in accordance with the manufacturer's recommendations, the Contractor shall make all changes necessary to achieve such compliance.

1.8 Work Quality

(a) All Work under this Contract shall be performed by experienced personnel in accordance with the best practices of the various trades involved and in accordance with the Construction Drawings, and reviewed shop drawings.

(b) All Work shall be erected and installed plumb, level, and square, or true to indicated angle, and in proper alignment and relationship to the Work of other trades. All finished Work shall be free from defects and damage.

(c) The CM and Inspector reserve the right to reject any materials and work quality that are not considered to be up to the general standards of the various trades involved. Such inferior material or Work quality shall be repaired or replaced, as directed, at no additional cost to the Owner.

1.9 Field Measurement

(a) The Contractor shall secure all field measurements required for proper and accurate fabrication and installation of the Work included in this Contract. Exact measurements are the Contractor's responsibility. The Contractor shall verify all dimensions in the field.

1.10 Permitting and Inspection

(a) The Project Plans have been submitted to the Building Department, City of La Habra for review. A permit number will be assigned once fees are paid by the Contractor.

(b) The Contractor shall pay all inspection and permit fees required by the City including Permit pulling fees. The Contractor will be reimbursed for the direct costs of the permit and inspection fees as provided for in Bid Allowances, up to the actual costs verified by submitted receipts with the progress payment. It shall also be the Contractor's responsibility to coordinate all required inspections with The City. Cost for "re-inspections" that result from incomplete or in accurately installed work shall be borne by the Contractor at his non-reimbursable expense.

(c) The CM/CQA Firm shall provide for inspection services as identified in these Specifications. The Contractor shall be responsible for scheduling any Special Inspections including independent inspection, special inspections (i.e. structural bracing of equipment and water tanks), and testing services in accordance with the California Building Code. Testing of concrete or other required items will be conducted by a certified testing laboratory. The special inspection form is attached to Sheet S-001 of the Plans.

****END OF SECTION 01 00 00****

CIVIL IMPROVEMENTS (SHEETS C-001 THROUGH C-505 OF PROJECT PLANS)
SECTION 01 20 00
MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 Measurement and Payment

(a) Improvements placed beyond the limits indicated on the drawings will not be compensated unless authorized by the Engineer prior to installation.

(b) To facilitate progress payments, the Bid Schedule reflects the main elements of the various landscape and miscellaneous civil improvements. Interim compensation will be based on the Engineer's review and approval of the various components of the work completed during the pay period.

(c) Ten percent of the Contract Price will be withheld until final completion of the Work.

1.2 Nonpayment for Rejected or Unused Products

(a) Payment will not be made for the following:

(i) Loading, hauling, disposing or replacement of rejected, contaminated or damaged material or material which does not meet product Specifications listed in the Contract Documents.

(ii) Quantities of material wasted or disposed of in manner not called for under Contract Documents.

(iii) Rejected loads of material, including material rejected after it has been placed by reason of failure of Contractor to conform to provisions of Contract Documents.

(iv) Material not unloaded from transporting vehicle.

(v) Defective work not accepted by the Engineer/CQA Consultant.

(vi) Material remaining on hand after completion of Work.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

PART 4 - MEASUREMENT AND PAYMENT

4.1 Mobilization/Demobilization

(a) Full compensation for all labor, material, and equipment required for mobilization, as requested by the Contract Documents, shall be included in the CONTRACTOR'S lump sum price for mobilization.

(b) The dollar amount for mobilization, as reflected in the Proposal, shall not exceed 10 percent of the total bid for the Project.

(c) Fifty percent of the mobilization bid price, less retention, will be paid on the initial billing provided all equipment and temporary facilities are in place and bond fees paid. Forty percent of the bid price will be paid uniformly, on a monthly basis during the projected life of the Contract. Ten percent of the mobilization bid price will be paid on satisfactory removal of all facilities and equipment upon completion of the project.

4.2 General and Supplemental Conditions

(a) Full compensation for all labor, material, and equipment required for compliance with the requirements outlined in the General and Supplementary Conditions shall be included in the Contractor's lump sum price for General and Supplementary Conditions Requirements.

(b) To facilitate progress payments, the Contractor may submit, for the review of the Engineer, a Schedule of Values, outlining those items included under General and Supplementary Conditions Requirements. Approval of the Schedule of Values will be at the sole discretion of the Engineer. Alternately, the lump sum bid price will be paid uniformly, on a monthly basis during the projected life of the Contract.

4.3 Survey

(a) Full compensation for all labor, tools, material, equipment, and incidentals for project survey as outlined in the Project Specifications shall be included in the Contractor's lump sum price for Survey.

(b) To facilitate progress payments, the Contractor may submit, for the review of the Engineer, a Schedule of Values, outlining those items included under Survey. Approval of the Schedule of Values will be at the sole discretion of the Engineer. Alternately, the lump sum bid price will be paid uniformly, on a monthly basis during the projected life of the Contract.

4.4 Record Drawings

(a) Full compensation for all labor, tools, material, equipment, and incidentals required to produce the Record Drawings as outlined in the Project Specifications and these Special Provisions shall be included in the Contractor's lump sum price for Record Drawings.

(b) Final payment to the Contractor will not be made until the Record Drawings have been reviewed and approved by the Engineer.

4.5 Clearing, Grubbing, Demolition and Removals

(a) Full compensation for all labor, material, and equipment required for clearing, grubbing, demolition, and removals as represented by the Contract Documents and as directed by the engineer, shall be included in the Contractor's lump sum price for the completed project.

(b) All clearing and grubbing, and/or other operations incidental and required to complete clearing and grubbing, as represented by the Drawings and Specifications shall be considered as included in the Contractor's price.

(c) To facilitate progress payments, the CONTRACTOR may submit for the approval of the ENGINEER, a Schedule of Values, which reflects a breakdown and distribution of costs between the various components of Clearing and Grubbing.

(d) The final pay quantities will be determined by field verification that the work has been completed in accordance with the drawings and these Specifications. Interim progress payments will be based on the Engineer's evaluation of the estimated percentage of work completed during the period.

(e) Clearing and grubbing completed beyond the limits indicated on the drawings will not be compensated unless previously authorized by the ENGINEER.

4.6 Civil Improvements

(a) Measurement

(i) Measurement for payment for the following items shall be by cubic yard (CY). Excavation and/or fill beyond the limits indicated on the drawings will be compensated only if approved and authorized by the ENGINEER.

(A) Unclassified Excavation - Final pay quantities will be determined by comparing the volumetric differences the pre-construction topographic survey and the design grades indicated on the drawings minus the unclassified fill volume.

(B) Excavation to Unclassified Fill - Final pay quantities will be determined by comparing the volumetric differences between the pre-construction topographic survey and the design grades indicated on the drawings.

(ii) Measurement for payment for the following items shall be by square foot (SF), determined by computing the actual square footage of material placed to the limits indicated on the drawings. Overlap at seams and materials in anchor trenches will not be measured separately for payment. Geosynthetics placed beyond those limits will not be compensated unless previously authorized by the ENGINEER.

(A) 3-inch AC over 5.5-inch CAB and Structural Subgrade (Case 2) Per 8/C-501 – Includes excavation, backfill, grading, structural subgrade, concrete, geogrid, finishing, and other appurtenances as shown on the Drawings.

(B) 3.5-inch AC over 9-inch CAB and Structural Subgrade (Case 1) Per 1/C-501 – Includes excavation, backfill, grading, structural subgrade, concrete, geogrid, finishing, and other appurtenances as shown on the Drawings.

(C) 3-inch AC over 5.5-inch CAB and Structural Subgrade (Case 1) Per 1/C-501 – Includes excavation, backfill, grading, structural subgrade, concrete, geogrid, finishing, and other appurtenances as shown on the Drawings.

(D) 3.5-inch AC over 9-inch CAB and Structural Subgrade (Case 2) Per 8/C-501 – Includes excavation, backfill, grading, structural subgrade, concrete, geogrid, finishing, and other appurtenances as shown on the Drawings.

(E) 4-inch-Thick Concrete Sidewalk – Includes excavation, reinforcement, gravel, backfill, grading, structural subgrade, concrete, geogrid, finishing, and other appurtenances as shown on the Drawings.

(F) Concrete Walking Path Per Sheets L-101 and L-102 – Includes excavation, reinforcement, gravel, backfill, grading, structural subgrade, concrete, geogrid, finishing, and other appurtenances as shown on the Drawings.

(G) Hydroseed Per Sheet C-100

(iii) Measurement and payment for the following items shall be by the linear foot (LF), determined by computing the actual linear footage of material placed to the limits indicated on the drawings. Improvements beyond those limits will not be compensated unless previously authorized by the ENGINEER.

(A) Curb (A1-6) Per SPPWC Plan 120-3 - Includes excavation, reinforcement, backfill, grading, forming, concrete, finishing, and other appurtenances as shown on the Drawings.

(B) Curb and Gutter (A2-6) Per SPPWC Plan 120-4 - Includes excavation, reinforcement, backfill, grading, forming, concrete, finishing, and other appurtenances as shown on the Drawings.

(C) Longitudinal Gutter Per SPPWC Plan 122-3 - Includes excavation, reinforcement, backfill, grading, forming, concrete, finishing, and other appurtenances as shown on the Drawings.

(D) Stairs and Walkway Per 1/C-505 - Includes excavation, reinforcement, backfill, grading, forming, concrete, finishing, handrails, and other appurtenances as shown on the Drawings.

(E) 18-inch ID PVC Pipe Per 6/C-501 – Includes pipe, fittings, tees, elbows, connections, caps, trenching, pipe bedding, and other appurtenances as shown on the Drawings.

(F) 2-inch Schedule 40 PVC Water Line Per 6/C-501 – Includes pipe, fittings, tees, elbows, connections, caps, trenching, pipe bedding, and other appurtenances as shown on the Drawings.

(G) 6-inch Sewer Lateral Per 3/C-504 – Includes pipe, fittings, tees, elbows, connections, caps, trenching, pipe bedding, and other appurtenances as shown on the Drawings.

(H) Handrails Per 9/C-501

(iv) Measurement for payment for the following items shall be unit/each (EA), determined by field verification of the actual quantity installed in accordance with the drawings. Improvements beyond those limits will not be compensated unless previously authorized by the ENGINEER.

(A) Driveway Per SSPWC Plan 110-2 – Includes grading, concrete, reinforcement, and other appurtenances as shown on the Drawings.

(B) Curb Ramp (Type 3) Per SSPWC Plan 111-5 and 4/C-501 – Includes grading, concrete, reinforcement, and other appurtenances as shown on the Drawings.

(C) Curb Ramp (Type 4) Per SSPWC Plan 111-5 and 5/C-501 – Includes grading, concrete, reinforcement, and other appurtenances as shown on the Drawings.

(D) Bioretention Basin A Per 1/C-503 – Includes excavation, grading, vegetation, geosynthetic liners, rock, pipe, fittings, tees, elbows, connections, caps, welds, laps, bioretention media, mulch, and other appurtenances as shown on the Drawings.

(E) Bioretention Basin B Per 1/C-503 – Includes excavation, grading, vegetation, geosynthetic liners, rock, pipe, fittings, tees, elbows, connections, caps, welds, laps, bioretention media, mulch, and other appurtenances as shown on the Drawings.

(F) Bioretention Basin C Per 1/C-503 – Includes excavation, grading, vegetation, geosynthetic liners, rock, pipe, fittings, tees, elbows, connections, caps, welds, laps, bioretention media, mulch, and other appurtenances as shown on the Drawings.

(G) 6" to 0" Curb Transition - Includes excavation, reinforcement, backfill, grading, forming, concrete, finishing, and other appurtenances as shown on the Drawings.

(H) Settlement Monument Per 2/C-502 – Includes excavation, concrete, steel pipe, grout, nail and tag, grading, finishing, and other appurtenances as shown on the Drawings.

(I) Cleanout Per 3/C-503 – Includes excavation, pipe, fittings, tees, elbows, connections, caps, concrete, and other appurtenances as shown on the Drawings.

(J) Overflow Structure Per 1/C-504 – Includes excavation, concrete, grate, reinforcement, and other appurtenances as shown on the Drawings.

(K) Manhole Per 4/C-505 – Includes excavation, manhole, and other appurtenances as shown on the Drawings.

(L) Hose Bibb Per 7/C-501 (Case 1) – Includes excavation, pipe, fittings, tees, elbows, connections, caps, concrete, hose bibb, valves, box and cover, and other appurtenances as shown on the Drawings.

(M) Hose Bibb Per 7/C-501 (Case 2) – Includes excavation, pipe, fittings, tees, elbows, connections, caps, concrete, hose bibb, valves, box and cover, and other appurtenances as shown on the Drawings.

(v) Measurement for payment for the following items shall be by lump sum (LS), determined by field verification in accordance with the drawings.

(A) Striping, Pavement Markings, and Signage – Includes all preparation, excavation, concrete footings, metal post mounts, sequencing, stenciling, finishing, and other appurtenances as shown on the Drawings.

(B) Cross Gutter Per 1/C-502 – Including excavation, backfill, compaction, concrete, reinforcement, forming, transitions, grouted riprap, and ribbon gutter as indicated on the Drawings.

(C) Cross Gutter Per 3/C-502 – Including excavation, backfill, compaction, concrete, reinforcement, forming, transitions, grouted riprap, and ribbon gutter as indicated on the Drawings.

(D) Cross Gutter Per 5/C-502 – Including excavation, backfill, compaction, concrete, reinforcement, forming, transitions, grouted riprap, and ribbon gutter as indicated on the Drawings.

(E) Stage, Associated Ramps, and Walls Per Structural Plans - Includes excavation, reinforcement, backfill, grading, forming, concrete, finishing, and other appurtenances as shown on the Drawings.

(F) Parkway Drain Per SPPWC Plan 151-3 and 4/C-503 - Includes excavation, reinforcement, backfill, grading, forming, concrete, finishing, and other appurtenances as shown on the Drawings.

(G) Building Protection System - Includes subgrade preparation, geotextile, aggregate, pipe, fittings, vent risers, liquid boot, methane and hydrogen sulfide sensors, calibration, calibration kits, controllers, horn strobe alarm system and signage as indicated on the Drawings.

(b) Payment

(i) Payment for the items listed above shall be by their unit price(s) quoted in the Bid Form. The price(s) quoted shall include full compensation for furnishing all labor, tools, equipment, and incidentals required for completing the work as shown on the plans, and as specified in the Standard Specifications, these Special Provisions, manufacturer's recommendations, and as directed by the Engineer.

(ii) Separate payment shall not be made for the following items. All costs for such Work shall be considered incidental and included in the prices quoted for the applicable related items of Work.

(A) Dust control

(B) Protection of exposed surfaces

(C) Stockpiling of excavated materials

(D) Required re-handling of materials

(E) Moisture control

(F) Disposal of excess excavation

(G) Compaction

(H) Vehicle Maintenance

(I) Scales and/or weighing fees

(J) Grading and preparing stockpile, and borrow source

(K) Over building due to survey and equipment accuracy and tolerances

(L) Protection of imported soil stockpiles

(M) Control testing

(N) Traffic control, including flagging, for construction vehicle crossing

(O) Grading for site cleanup

****END OF SECTION 01 20 00****

CIVIL IMPROVEMENTS (SHEETS C-001 THROUGH C-505 OF PROJECT PLANS)
SECTION 01 50 00
CONSTRUCTION SUPPORT

PART 1 - GENERAL

1.1 Summary

(a) This section sets forth the requirements for implementation of construction support, surveys, and mitigation measures to be implemented during construction.

1.2 Temporary Facilities for Contractor's Use

(a) Furnish sanitary facilities as required for Contractor, sub-contractor and material delivery use.

(b) Pay for utility service.

(c) Remove the facilities on completion of the work.

1.3 Dust Control

(a) Dust control operations shall be performed by the Contractor at the time, location and in the amount required, and as often as necessary to prevent his work, demolition operation, or other activities from producing dust in amounts harmful to person or causing a nuisance to persons living nearby or occupying buildings in the vicinity of the work. The Contractor is responsible for compliance with Fugitive Dust Regulations issued by the South Coast Air Quality Management District (SCAQMD).

(b) Control of dust shall be by sprinkling of water, use of approved dust preventatives, modifications of operations or any other means acceptable to the Engineer, the Regional Water Quality Control Board (RWQCB), the SCAQMD, and any Health or Environmental Control Agency having jurisdiction over the facility.

(c) The Engineer shall have the authority to suspend all construction operations if, in his opinion, the Contractor fails to adequately provide for dust control. No additional compensation to the Contractor will be allowed as a result of suspension of work due to inadequate dust control measures.

1.4 Protection of Existing Utilities

(a) The Contractor shall be responsible for protection of any buried or surface utilities and drainage structures within the limits of work existing at the site. Certain items are indicated on the Plans. These may include, but are not limited to: water lines, sewer lines, ground water monitoring and extraction wells, gas monitoring probes, gas extraction wells, power poles, survey monuments.

(b) Attention is directed to the possible existence of underground utilities not indicated on the Plans or in these special provisions and to the possibility that underground utilities may be at a location different from that which is indicated on the Drawings or in these Special Provisions. The Contractor shall be responsible for verifying the location of underground utilities.

(c) Contractor shall be responsible for protection of these utilities and shall take all necessary precautions by constructing barriers, bridges, and crossings for construction equipment and vehicles to prevent damage to the utilities or as required by the Engineer. Any damage or loss caused by the Contractor's operations shall be promptly repaired at the Contractor's expense and to the satisfaction of the Engineer.

1.5 Water Pollution Control

(a) The Contractor is advised that work under this contract shall be subject to the requirements of the National Pollutant Discharge Elimination System (NPDES) general permit for construction activities.

(b) The Contractor shall develop a Storm Water Pollution Prevention Plan (SWPPP) for the construction of this project. The Contractor shall complete the draft SWPPP. The Contractor's SWPPP shall incorporate Best Management Practices (BMP's) as recommended in the California Storm Water Best Management Practices Handbook – Construction, published by the California Storm Water Quality Association, and as required to eliminate both non-storm water pollution and storm water run-off related pollution resulting from the construction activities, and in accordance with the site's existing Industrial SWPPP, which is available for review by the Contractor.

(c) Construction related activities, including but not limited to the elements of the SWPPP, shall be performed to eliminate both storm water and non-storm discharges to storm water control system, by Contractor and subcontractor(s). The Engineer will notify Contractor of any non-compliance with the foregoing stipulations and appropriate actions shall be taken promptly. Contractor shall also notify the Engineer of any condition which could lead to noncompliance with the permit requirements. Contractor shall not be responsible for storm water monitoring at the landfill.

(d) Contractor shall not be entitled to any time extensions or compensation for any cost due to any action required as a result of Contractor's failure to comply with those provisions of the SWPPP within Contractor's control. Contractor will be responsible for ensuring that Contractor's subcontractor(s) comply with the provisions of this Section. Contractor shall be liable for any action or fine imposed by the regulatory agencies on those incidents of noncompliance which are within Contractor's area of responsibility.

(e) The Contractor shall exercise every reasonable precaution to protect channels, storm drains and bodies of water from pollution, including siltation arising from Contractor's operations, or erosion siltation from completed areas. Pollution control work shall consist of implementing practices or constructing facilities in accordance with local, state, or federal regulations which may be required to provide for retention and control of pollutants.

(f) It is the intent of these Specifications that at the conclusion of the contract, the site will be protected with newly installed erosion control improvements. However, interim erosion control features installed during the latter phases of the project may be considered and compensated as final, at the discretion of the Engineer, if the components are deemed to be in suitable and undamaged condition.

1.6 Nuisance Water

(a) It is anticipated that nuisance water, such as rainfall or surface runoff, may be encountered within the construction site during the period of construction under this contract. The Contractor, by submitting his bid, will be held to have investigated the risks arising from such waters and to have made his bid in accordance therewith.

(b) The Contractor shall at all times protect the work from damage by such waters and shall take all due measures to prevent delays in progress of the work caused by such waters. The cost for any repairs due to such damage shall be the responsibility of the Contractor. The Contractor shall dispose of nuisance water, including all precipitation collected within the Project tributary drainage area, at his own expense and without adverse effects upon the work site or any other property, including the active operations area, for the duration of the Project (until Notice of Completion is granted by City).

1.7 Drainage Precaution

(a) At the completion of each workday, the Contractor shall take all necessary preventive measures to avoid or minimize damage resulting in erosion or impounding caused by storm water runoff within the construction area. Erosion control measures shall consist of constructing sandbag berms, desilting basins, drains, temporary storm water pumping facilities, and other such measures required to provide for the prevention, control and abatement of storm water discharges and damage resulting therefrom. The cost for any repairs due to such damage shall be the sole responsibility of the Contractor.

1.8 Site Safety Plan

(a) The Contractor shall provide a Site-Specific Health and Safety Plan with the signed contract documents that meet the minimum of all the requirements of federal and state regulations through the construction activities. The Contractor shall be solely responsible for adherence to the Site-Specific Health and Safety Plan at all times.

(b) The Contractor shall determine for himself the extent to which these requirements are applicable to his work and subcontractors work for this project. It is the responsibility of the Contractor to ensure compliance with all relevant health and safety regulations.

(c) The Contractor shall be responsible for providing all items necessary for health and safety, including dust control, and personnel protective equipment (which at a minimum includes mandatory use of hard hat, vest, safety glasses, vehicle flags), in accordance with applicable Federal and State requirements.

1.9 Traffic Control

(a) The Contractor shall submit a traffic control plan.

(b) Traffic and pedestrian control shall comply with applicable provisions as contained in the latest edition of the California Manual on Uniform Traffic Control Devices.

(c) Contractor shall not interrupt two-way traffic at the site. The rerouting of traffic to meet this requirement shall be coordinated with the Engineer prior to implementation.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 Survey

(a) The Engineer will establish benchmarks and primary control points outside the Work limits. The Contractor shall employ a licensed Land Surveyor, or a qualified Registered Civil Engineer licensed in the State of California to provide all lines and grades necessary to perform the Work, and all survey required for quantity verification and data for Record Drawings as indicated in these Contract Documents.

3.1.1 Survey Data Submittal

(a) All Contractor survey information shall be submitted to the Engineer no later than five (5) working days from the date the survey was conducted. The data shall be provided as a CAD file with an electronic printout included.

(b) Pre-Construction Survey

(i) Prior to initiation of site work, the contractor shall perform a survey to confirm that site conditions are representative of the information contained in the construction drawings. The contractor shall submit a written report of any/all discrepancies to the Engineer at least one week in advance of work commencement. The report shall include a topographic map which clearly indicates the discrepancies. Contract work paid to the contractor on a volume basis shall require the contractor's surveyor to perform an independent topographical survey of the work area for comparison with the contract documents. All discrepancies between the contractor's topographical and contract drawings shall be reported to the Engineer prior to initiation of work.

(ii) The contractor shall generate an electronic pre-construction survey surface. The surface shall be generated using approved pre-construction aerial or ground survey data. All electronic surfaces shall be generated using raw survey data (i.e., mass points and break lines) and shall not rely on contours or digitization methods to generate surfaces except with the consent of the Engineer. Surfaces shall be comprised of a Triangulated Irregular Network (TIN), also being the basis for a Digital Terrain Model (DTM). All such surfaces shall be created commensurate with National Mapping Accuracy Standards equal to that matching the scale and contour interval of the contract drawings.

(c) Survey Control Plan

(i) The contractor shall submit a survey control plan indicating proposed control points provided in the construction drawings. The plan shall be submitted to the Engineer at least ten (10) days in advance of beginning any construction and the Engineer shall respond with comments or approval within five (5) days of receipt. Primary control shall be based on and tied to at least three surveyor control stations

provided by the Engineer. The establishment of all future primary control points will be tied to the same control stations or to the previously established primary control stations. No work shall commence until any/all discrepancies between the survey information contained in the construction documents and the field conditions at the start of work are resolved. Any changes to the survey control plan during the project shall be submitted to the Engineer for approval prior to implementation.

3.1.2 Survey Notification

(a) The Contractor shall notify the Engineer in writing (telefax or e-mail is acceptable) at least two days prior to performance of any QC survey work. Upon completion of the QC survey work for each construction element, or daily at a minimum, the results shall be forwarded to the Engineer. A QA check survey may immediately follow the QC surveys. The Engineer will then compare the data and advise the Contractor whether work can continue. Regardless, the Contractor is ultimately responsible for assuring the work is completed to the lines and grades per Plans and Specifications.

3.1.3 Primary and Secondary Survey Control

(a) A system of primary survey control (basis for setting out) has been established in the construction documents by the Engineer for use by the Contractor. The Contractor shall verify the accuracy of the primary control provided and establish a survey control plan for secondary control points necessary for construction work layout. All secondary survey control shall be established proximate to the work site and used for developing subsequent control and/or laying out the work. Layout lines for use in constructing the work shall be taken directly from the secondary control. Secondary control shall be established by the Contractor's surveyor with due diligence in accordance with local survey industry standards to enable the third party CQA surveyor to retrace the steps of the Contractor's surveyor during check surveys.

3.1.4 Survey of Buried or Concealed Work

(a) The Contractor's measurements of lines, grades and distances are subject to check surveys by the Engineer/CQA surveyor. All underground and other subgrade work shall not be buried until the following are satisfied:

(i) Contractor has informed the Engineer in writing that the work is complete and ready for inspection and check survey.

(ii) Contractor has provided Engineer with the survey data prepared by Contractor's surveyor for review.

(iii) Engineer has performed any necessary check surveys.

(iv) Contractor has received a written notice from the Engineer to proceed.

3.1.5 Protection of Monuments, Stakes and Marks

(a) The Contractor shall preserve and protect all survey monuments and related marks at the site and shall maintain the primary control points per the Survey Control Plan.

(b) Any removal, disturbance or destruction of monuments shall be conducted in accordance with the contract documents and Survey Control Plan.

(c) All stakes or otherwise deleterious material originating for construction activities shall be collected and disposed of properly.

3.1.6 Survey Timing/Frequency

(a) The Contractor's surveyor shall complete the survey of each constructed element in a timely manner so as not to delay any of the work. For grade sensitive elements (e.g., sewer pipe trenches, water supply system pipe, leach field pipe) verification by survey, the QC survey must be presented to and accepted by the Engineer prior to proceeding with the next work element (e.g., paving or backfilling).

(b) For long linear elements such as roads and drainage ditches, the QC survey shall be completed in segments as the work progresses (i.e., not when the entire length has been graded) to prevent grade errors from compounding and causing major rework. The survey shall be performed immediately after completing each 200-foot-long segment or as determined practical by the Engineer prior to recording said data.

(c) In all cases, the Engineer shall be afforded the opportunity to conduct a QA check survey of all aforementioned Contractor QC survey segments prior to the contractor proceeding with construction in these areas.

3.1.7 Survey Deliverables

(a) Survey Recordkeeping

(i) Survey records consisting of copies of original field notebooks, field/office calculations, survey notes, sketches, field drawings, CAD drawings and surveyor's red line as-built drawings and data from electronic data collectors shall be stored in a survey field notebook/binder or plan rack as appropriate. Any surveyor's red line "mark-up" drawings and survey field notebook(s) will become the property of the Engineer upon project completion.

(b) As-Built Survey Data

(i) The Contractor's survey data shall be collected throughout the project to show as-built conditions. This includes all underground as well as surface elements. In addition to a hard copy printout, this data shall be provided in an ASCII format and shall include: point number, northing and easting, elevations, and descriptions of point.

(ii) The ASCII format shall be as follows:

(A) PPPP, NNNNNN.NNN, EEEEEEE.EEE, ELEV, Description

(B) Where P is the point number, N is the Northing, E is the Easting, ELEV. is the elevation and Description is the description or type of point.

(iii) The Contractor shall, upon 24-hour advance notice, provide access to any equipment, files and personnel used for logging and processing survey data (including earthwork volume computations) to Engineer for verification purposes.

(iv) The Contractor's surveyor shall merge design drawings and as-built data into original survey as-built drawings. Data shall include:

(A) Coordinates and elevations of all constructed and completed underground piping.

(B) Curve data including center line stationing, elevation offsets to edge, cross slope (percent) as well as longitudinal slope (percent) for all drainage structures, roadways (paved and temporary).

(C) Elevations and coordinates at beginning, end, changes in alignment and grade breaks should be located during original survey work.

(D) Coordinates and elevation of all corners for drainage facilities to properly locate the as-built position on record drawings.

(E) Coordinates and elevations for flow line of interceptor drains, drainage ditches, at a center to center spacing not to exceed 25 feet or otherwise approved by Engineer. The edge of the channel where it adjoins any other structure (e.g., perimeter access road) shall be surveyed at the same spacing.

(F) Elevations and coordinates for transition structures at a spacing not to exceed 10 feet or two shots, whichever provides a more accurate location.

(G) Coordinates and elevations necessary to locate all new and/or relocated infrastructure including but not limited to gas wells and lines, condensate lines, power poles, and guy wire supports. Vertical clearance and location in plan shall be provided for all above ground utility lines installed as well as existing lines where vertical clearance has been changed due to cut and/or fill placement.

(H) All newly installed, exposed or modified existing below ground utilities shall be located in plan by elevation and coordinates prior to covering.

(v) Post-construction survey data.

(A) Upon completion of work, one complete set of as-built contract (red line) drawings shall be delivered to the Engineer within 15 working days of project completion as a condition of final acceptance of the work.

3.1.8 Survey Verification Drawings

(c) Separate “Survey Verification Drawings” prepared by and stamped and signed by a land surveyor licensed in the State of California or Licensed Civil Engineer registered in the State of California that may (pursuant to the State of California Professional

Engineer's Act) practice Land Surveying, for each of the following project components shall submitted with accompanying compact disk containing the AutoCAD Drawing Files:

(i) Geosynthetics: Drawing shall show the limits of the installed geomembrane and GCL and anchor trenches.

(ii) Water Supply System: Drawing shall show the top of pipe locations and elevations at 25 feet on center, including all grade breaks and angle points. The size of the pipe shall be noted.

(iii) Miscellaneous Civil Improvements: Drawing shall show the location of all civil improvements including curbs, gutters, pavement, striping, and signage. Survey data shall include the coordinate data and elevations at all grade breaks and angle points, all above and below ground utilities, tops and flowlines of both curbs and ditches, subgrade, and top of base material and pavement.

3.1.9 Verification Survey

(a) The Owner/Owner's Engineer, at their option, may conduct verification surveys of any element of the Work. Owner/Owner's Engineer survey work shall not relieve the Contractor of any responsibility for completion of all survey requirements identified in the Specifications, and if conducted will be a separate operation from the Contractor's surveyor's verification survey and verification drawing preparation work.

3.1.10 Record Drawings

(b) Upon completion of work, one complete set of as-built survey record drawings, with stamped and signed Surveyor's Certification Statement shall be delivered to the Engineer within 10 working days of project completion as a condition of final acceptance of the work.

(c) The Contractor shall maintain a hard copy set of full-size Contract Drawings in his/her site office and shall mark, on these Drawings, all changes made during construction. The Drawings shall be corrected daily and reviewed with the Engineer on a bi-weekly basis. At a minimum, the Drawings shall include the as-constructed horizontal location and elevation of all buried (concealed) work completed as part of this project including all surface improvements and drainage improvements.

(d) The Contractor's surveyor shall merge design drawings, Contractor's red line drawings of construction modifications, and as-built data into original survey verification as-built drawings.

(e) Based on the hard copy set of full-size Contract Drawings, the Contractor shall update the AutoCAD drawings with revision clouds and revision numbers to reflect the as-constructed conditions. All corrections and as-constructed information transferred to the AutoCAD drawings shall be done in color and shall be done in a professional, draftsman-like manner. The AutoCAD drawings shall be submitted to the Owner/Owner's Engineer at the completion of the Project.

(f) Each Record Drawing shall include the following certification statement:

(i) "The Undersigned California Licensed Professional Engineer/Land Surveyor responsible for surveying for this project hereby certifies that these drawings represent the as-constructed condition of the Project Construction Components."

(g) The Licensed Professional Engineer/Land Surveyor shall also provide his/her signature over professional stamp on each drawing at the end of the Surveyor Certification Statement. Only a California Registered Professional Engineer with licensure allowing the practice of Land Surveying may sign in lieu of a California Licensed Land Surveyor.

(h) Scanned PDF File of All Record drawings

(i) The Contractor shall also scan all final signed record drawings to create a reproducible of all Record Drawings in PDF file format and submit this information on a compact disk for the Owner/Owner's Engineer's use.

(ii) The Project will not be considered to be substantially complete unless all record, and as-built drawings (stamped and signed with certification required by these Specifications) have been received, reviewed, and accepted as complete by the Engineer. Final retention payment cannot be made until this provision of the Specifications is satisfied.

3.2 General and Supplemental Conditions

(a) It is the responsibility of the Contractor, including the Project Manager and Project Superintendent, to be familiar with, and comply with all requirements of the General Conditions and the Regulatory Compliance requirements.

PART 4 - MEASUREMENT AND PAYMENT

See Section 01 20 00.

****END OF SECTION 01 50 00****

CIVIL IMPROVEMENTS (SHEETS C-001 THROUGH C-505 OF PROJECT PLANS)
SECTION 28 42 00
BUILDING PROTECTION SYSTEM

PART 1 - GENERAL

1.1 Summary

(a) This section sets forth the requirements for the building protection system (BPS).

(b) The CONTRACTOR shall assure that the ENGINEER shall at all times have safe access to the work for the purpose of monitoring.

1.2 Work Included

(a) The specified building protection system shall be furnished and installed as shown on the Drawings and as required herein to protect closed structures from vapor intrusion from the underlying soils. The building protection system will provide a vapor barrier layer from the following gases: Methane, other Hydrocarbon vapors in concentrations up to 20,000 ppm, Hydrogen Sulfide, and Radon.

1.3 Manufacturer Certification, and Quality Control (QC)

(a) Quality Control (QC) is the responsibility of the CONTRACTOR and shall consist of manufacturer's certification, manufacturer's quality control testing, installation quality control conformance testing. BPS Contractor shall be trained and approved by gas vapor barrier manufacturer. A pre-installation conference shall be held prior to application of building protection system to assure proper substrate and installation conditions, to include contractor, applicator, architect/engineer and special inspector.

1.4 Qualifications

(a) The manufacturer shall be a well-established firm with more than five years of experience in the manufacturing of vapor barrier systems.

(b) The installer shall have installed a minimum of five years of experience and have completed a minimum of five previous similar installations as determined by the engineer.

1.5 Submittals Required

(a) The CONTRACTOR shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this Section. This submittal list does not release the CONTRACTOR from the responsibility of identifying and providing all information requested.

(b) Manufacturer's product certifications and certified quality control test results as specified herein.

(i) Samples of gas vapor barrier membrane material.

(ii) Geotextile.

(iii) Methane Detection Equipment

(iv) Manufacturer/CONTRACTOR'S installation procedures, and QC Plan.

(v) Warranty as specified herein.

(vi) Signage

(vii) PVC Pipe and Fittings

(viii) Galvanized Steel Pipe and Fittings

(ix) Gas Detection System Components

(x) Gradation and Certificate of Compliance for Gravel

PART 2 - PRODUCTS

2.1 Gas Barrier System

(a) Fluid applied gas vapor barrier system - LIQUID BOOT®; a single-course, high-build, polymer modified asphaltic emulsion. Water borne and spray applied at ambient temperatures. A minimum thickness of 60 dry mils, unless specified otherwise as some cities and engineers may require a thicker membrane. Non-toxic and odorless. LIQUID BOOT® Trowel Grade has similar properties with greater viscosity and is trowel applied. Manufactured by CETCO or equal.

(b) Physical Properties: Geotextile shall meet or exceed the following requirements:

GAS VAPOR MEMBRANE	TEST METHOD	VALUE
Acid Exposure (10% H_2SO_4 for 90 days)	ASTM D543	Less than 1% weight change
Benzene Diffusion	Tested at 43,000 ppm	2.90 x 10-11 m^2/day
Chemical Resistance: VOCs, BTEXs (tested at 20,000 ppm)	ASTM D543	Less than 1% weight change
Chromate Exposure (10% Chromium6+ salt for 31 days)	ASTM E96	Less than 1% weight change
Diesel (1000 mg/l), Ethylbenzene (1000 mg/l), Naphthalene (5000 mg/l) and Acetone (500 mg/l) Exposure for 7 days	ASTM D543	Less than 1% weight change, Less than 1% tensile strength change
Radon Permeability	Tested by US Dept. of Energy	Zero permeability to Radon (222Rn)
Bonded Seam Strength Tests	ASTM D6392	Passed*
Micro Organism Resistance (Soil Burial)- average weight change,	ASTM D4068-88	Passed*
Methane Permeability	ASTM 1434-82	Passed*
Oil Resistance Test- average weight change, average tensile strength change, average tensile stress change, average elongation change, bonded seams, methane permeability	ASTM D543-87	Passed*
Heat Aging- average tensile strength change, average tensile stress change, average elongation change, bonded seams	ASTM D4068-88	Passed*
Dead Load Seam Strength	City of Los Angeles	Passed*
Environmental Stress-Cracking	ASTM D1693-78	Passed*
PCE Diffusion Coefficient	Tested at 6,000 mg/m^3	2.74 x 10-14 m^2/sec

TCE Diffusion Coefficient	Tested at 20,000 mg/m^3	8.04 x 10-14 m^2/sec
Soil Burial	ASTM E154-88	Passed
Water Vapor Transmission	ASTM E96	0.069 perms
POTABLE WATER	TEST METHOD	VALUE
Toxicity Test	22 CCR 66696	Passed. CCR Bioassay—Flathead Minnow
Potable Water Containment	ANSI/NSF 61	NSF Certified for tanks >300,000 gal**
Hydrostatic Head Resistance	ASTM D751	Tested to 138 feet or 60 PSI
GENERAL INFORMATION	TEST METHOD	VALUE
Freeze-Thaw Resistance (100 Cycles)	ASTM A742	Meets criteria. No spalling or disbondment
Accelerated Weathering & Ultraviolet Exposure	ASTM D822	No adverse effect after 500 hours
Elongation	ASTM D412	1,332% - Ø reinforcement, 90% recovery
Tensile Strength	ASTM D412	58 PSI without reinforcement
Tensile Bond Strength to Concrete	ASTM D413	2,707 lbs./ft^2 uplift force

Notes:

(1) Per NSF approval for 80-mil Liquid Boot® potable water containment membrane.

2.2 Geotextile

(a) BaseFabric™ T-40 non-woven geotextile, unless otherwise specified and approved by membrane manufacturer. The heat-rolled side shall be used as the application surface. Some projects may require a heavier geotextile (BaseFarbic™ T-60).

2.3 Warranty

(a) The geotextile manufacturer shall furnish a written warranty on a prorata basis for a period of 12 months. The warranty shall be against manufacturing defects of workmanship and against deterioration due to ozone, ultraviolet and/or other normal weather aging.

2.4 PVC Pipes and Fittings

(a) PVC pipes and fittings shall be Schedule 80, conforming to the requirements of ASTM D1785, D2464, and D2466, and shall have been approved by the National Sanitation Foundation (NSF). As specified, saw cuts or perforations will be supplier installed.

2.5 PVC Valves

(a) Gas sampling valves shall be 1/4-inch PVC labcock. Labcock seat and seal shall be EPDM. Labcock shall have a 1/4-inch MPT one end, and hose connection on the other end, and shall be manufactured by Chemtrol Asahi/America, or approved equal.

2.6 Galvanized Steel Pipe

(a) Galvanized steel pipe shall conform to Section 209-3.5.2 of the SSPWC. Fittings shall be Class 150 malleable iron threaded fittings conforming to ASTM A197. Galvanizing shall conform to ASTM A153.

2.7 Gravel for Sub-Slab System

(a) Gravel (#3 Aggregate) shall consist of a clean, hard, durable, uniform product, free of limestone, organic, and other deleterious material. Gravel shall conform to the following gradation as determined by Sieve Analysis (ASTM D422):

U.S. Standard	Percent Passing by
1/2 inch	100
3/8 inch	85-100
No. 4	0-30
No. 8	0-10
No. 200	0-2

(b) The Contractor shall submit to the Engineer for approval, certified results of a sieve analysis on the proposed material, signed by a State of California registered Civil Engineer or Geotechnical Engineer.

(c) Gravel shall have a minimum permeability of 1.0 x 10-1 cm/sec. The Contractor shall submit to the Engineer for approval, certified results of a permeability test on the proposed material, signed by a State of California registered Civil Engineer or Geotechnical Engineer.

(d) The Contractor shall identify the potential source and provide Certificates of Compliance at least 15 working days prior to intended use. Should the County determine that confirmation testing is warranted, the County will bear the responsibility of costs for such additional testing. The Contractor shall reimburse the County for the confirmation tests, if such tests indicate that the proposed material does not conform to the Project Specifications. The Contractor shall bear the responsibility for the costs of gradation and permeability tests, listed above.

2.8 Methane Detection Sensors and Controller

(a) System controller shall be RKI Beacon 110 or approved equal.

(b) Methane and Hydrogen Sulfide Sensors

(i) LEL Sensor shall be RKI Instruments S2 Series Sensor/Transmitter (Model No. 65-2405RK) or approved equal.

(ii) H2S Sensor shall be RKI Instruments S2 Series Sensor/Transmitter (Model No. 65-2331RK) or approved equal.

(c) Alarm system shall Edwards Signaling 120V Horn Strobe with red lens (Model No. 868STRR-N5) or approved equal.

(d) Calibration Kits

(i) LEL Kit shall be RKI Instruments Model No. 81-F002RK-LV or approved equal.

(ii) H2S Kit shall be RKI Instruments Model No. 81-F101RK-LV or approved equal.

PART 3 - EXECUTION

3.1 Supporting Surfaces Inspection

3.1.1 Acceptance of Subgrade Surfaces

(a) The ENGINEER and CONTRACTOR/Installer will conduct a walk-through of all areas to a vapor barrier, at which time, the CONTRACTOR/Installer shall verify in writing that the supporting surface is acceptable for installation and that all required installation, testing, etc., of underlying materials or other supporting surfaces, has been performed. The areas to be covered will be turned over to the CONTRACTOR/Installer upon such acceptance. The CONTRACTOR shall be responsible for maintenance of these areas in accordance with Specification requirements until completion of the geotextile installation.

3.2 Surface Preparation

(a) Provide 24 inches of minimum clearance out from surfaces to receive the gas vapor barrier. The application surface shall be prepared and provided to the applicator in accordance with manufacturer's specifications. Concrete surfaces shall be light broom finish or smoother, free of any dirt, debris, loose material, release agents or curing compounds. Fill all voids more than 1/4 inch deep and 1/4 inch wide. Masonry joints, cold joints, and form joints shall be struck smooth. All penetrations shall be prepared in accordance with manufacturer's specifications. Provide a 3/4-inch minimum cant of LIQUID BOOT®, or other suitable material as approved by manufacturer, at all horizontal to vertical transitions and other inside corners of 120° or less. Allow to cure overnight before the application of LIQUID BOOT®. All cracks or cold joints greater than 1/16 inch must be completely grouted with non-shrink grout as approved by engineer. Install Hardcast reinforcing tape over all cold joints, cracks, and form tie holes (after holes and cracks are grouted).

(b) Installation on concrete / shotcrete / masonry surfaces: Concrete surfaces shall be light broom finish or smoother, free of any dirt, debris, loose material, release agents or curing compounds. Fill all voids more than 1/4 inch deep and 1/4 inch wide. Masonry joints, cold joints, and form joints shall be struck smooth. All penetrations shall be prepared in accordance with manufacturer's specifications. Provide a 3/4-inch minimum cant of LIQUID BOOT®, or other suitable material as approved by manufacturer, at all horizontal to vertical transitions and other inside corners of 120° or less. Allow to cure overnight before the application of LIQUID BOOT®. All cracks or cold joints greater than 1/16 inch must be completely grouted with non-shrink grout as approved by engineer. Install Hardcast reinforcing tape over all cold joints, cracks, and form tie holes (after holes and cracks are grouted).

(c) Installation on soil subgrade: The sub-grade shall be moisture conditioned and compacted to a minimum relative compaction of 90 percent or as specified by civil/geotechnical engineer. The finished surface shall be smooth, uniform, and free of debris and standing water. Remove all stones or dirt clods greater than 1/4 inch. (NOTE: Aggregate sub-bases shall be rolled flat, free from any protruding sharp edges). Penetrations shall be prepared in accordance with manufacturer's specifications. All form stakes that penetrate the membrane shall be of rebar which shall be bent over and

left in the slab. Trenches shall be cut oversize to accommodate gas vapor barrier membrane and protection course with perpendicular to sloped sides and maximum obtainable compaction. Adjoining grade shall be finish graded and compacted. Excavated walls shall be vertical or sloped back, free of roots and protruding rocks. Specific sub-grade preparation shall be designed by a qualified civil or geotechnical engineer. If organic materials with potential for growth (i.e.: seeds or grasses) exist within the sub-base, spray apply soil sterilant at the sterilant manufacturer's recommended rate

3.3 Installation

3.3.1 Installation on Concrete / Shotcrete / Masonry surfaces:

(a) Refer to Section 3.3.3, "Sealing Around Penetrations", for procedures to seal around penetrations.

(b) Provide a ¾" minimum cant of LIQUID BOOT®, or other suitable material as approved by manufacturer, at all horizontal to vertical transitions and other inside corners of 120° or less. Allow to cure overnight before the application of LIQUID BOOT®.

(c) Delineate a test area on site with a minimum dimension of 10 feet by 10 feet (3m by 3m). Apply LIQUID BOOT® to a thickness of 60 mils and let it cure for 24 hours. Observe for blisters. If minor or no blistering occurs, proceed to the next step. (See note regarding blisters). If significant blistering does occur, apply a thin (10 mil) tack coat of LIQUID BOOT® "A" side without catalyst to the entire concrete surface and allow curing before proceeding. (See also information regarding blister repair).

(d) Spray-apply LIQUID BOOT® to a 60-mil minimum dry thickness. Increase thickness to 100 dry mils if shotcrete is to be applied directly to membrane. If a second coat is required, remove any standing water from the membrane before proceeding with the second application.

(e) Do not penetrate membrane. Keep membrane free of dirt and debris and traffic until a protective cover is in place. It is the responsibility of the General Contractor to ensure that the membrane and the protection system are not penetrated.

(f) After membrane has cured and checked for proper thickness and flaws, install protection material pursuant to manufacturer's instructions.

(g) NOTE: All testing or inspection to be performed prior to placing protection course.

(h) NON-HORIZONTAL SURFACES: Spray on non-horizontal surfaces should begin at the bottom and work towards the top. This method allows the product to adhere to the surface before hitting catalyst runoff.

(i) NOTE: Due to the nature of concrete as a substrate, it is normal for some blistering to occur. This is caused by either concrete's tendency to off-gas or water that is temporarily trapped between the concrete and the membrane. With time and the applied pressure of backfill or over-slab, blisters will absorb into the concrete without detriment to the

membrane. A small number of blister heads should be sampled and checked for proper membrane thickness. If the samples have the minimum required membrane thickness, then the remaining blisters should not be punctured or cut. If the samples have less than the minimum required membrane thickness, then the area can either be re-sprayed to obtain the proper thickness, or the blisters can be cut out and the area re- sprayed or patched with LIQUID BOOT® Trowel Grade.

3.3.2 Installation on soil surfaces:

(a) Roll out BaseFabricTM geotextile on sub-grade with the heat-rolled side facing up. Overlap seams a minimum of 6 inches. Lay geotextile tight at all inside corners. Apply a thin 10 mil tack coat of LIQUID BOOT® "A" side without catalyst within the seam overlap. Line trenches with geotextile extending at least six inches (6") onto adjoining sub-grade if slab and footings are to be sprayed separately.

(b) Minimize the use of nails to secure the geotextile to the dirt subgrade. Remove all nails before spraying membrane, if possible. Nails that cannot be removed from the dirt subgrade are to be patched with geotextile or Hardcast reinforcing tape overlapping the nail head by a minimum of two inches (2"). Apply a thin tack coat of LIQUID BOOT® under the geotextile patch, when patching with geotextile.

(c) Refer to Section 3.3.3, "Sealing Around Penetrations", for procedures to seal around penetrations.

(d) Spray-apply LIQUID BOOT® onto geotextile to a 60-mil minimum dry thickness. Increase thickness to 100 dry mils if shotcrete is to be applied directly to membrane. If a second coat is required, remove any standing water from the membrane before proceeding with the second application.

(e) Do not penetrate membrane. Keep membrane free of dirt, debris and traffic until a protective cover is in place. It is the responsibility of the General Contractor to ensure that the membrane and the protection system are not penetrated.

(f) After membrane has cured and checked for proper thickness and flaws, install protection material pursuant to manufacturer's instructions.

(g) NOTE: All testing or inspection to be performed prior to placing protection course.

3.3.3 Sealing around penetrations:

(a) Clean all penetrations. All metal penetrations shall be sanded clean with emery cloth.

(b) For applications requiring BaseFabricTM geotextile, roll out geotextile on sub-grade with the heat-rolled side facing up, overlapping seams a minimum of six inches (6"). Cut the geotextile around penetrations so that it lays flat on the sub-grade. Lay geotextile tight at all inside corners. Apply a thin (10 mil) tack coat of LIQUID BOOT® "A" side without catalyst within the seam overlap.

(c) At the base of penetration install a minimum ¾ inch thick membrane cant of LIQUID BOOT®, or other suitable material as approved by manufacturer. Extend the membrane at a 60-mil thickness three inches (3") around the base of penetration and up the penetration a minimum of three inches (3"). Allow to cure overnight before the application of LIQUID BOOT® membrane. (See manufacturer's standard detail.)

(d) Spray apply LIQUID BOOT® to a 60 mils minimum dry thickness around the penetration, completely encapsulating the collar assembly and to a height of one- and one-half inches (1 1/2") minimum above the membrane as described in (c) above. Spray-apply LIQUID BOOT® to surrounding areas as specified for the particular application. (SEE MANUFACTURER'S STANDARD DETAIL)

(e) Allow LIQUID BOOT® to cure completely before proceeding to step "F".

(f) Wrap penetration with polypropylene cable tie at a point two inches (2") above the base of the penetration. Tighten the cable tie firmly to squeeze, but not cut, the cured membrane collar.

3.4 Construction Quality Control

(a) Applicators should check their own work for coverage, thickness, and all-around good workmanship before calling for inspections.

(b) The membrane must be cured at least overnight before inspecting for dry-thickness, holes, shadow shrinkage, and any other membrane damage. If water testing is to be performed, allow the membrane to cure at least 72 hours prior to the water test. When thickness or integrity is in question the membrane should be tested in the proper manner as described below. However, over-sampling defeats the intent of inspections. Inspectors should always use visual and tactile measurement to guide them. Areas suspected of being too thin to the touch should be measured with the gauges to determine the exact thickness. With practice and by comparing tactile measurements with those of the gauges, fingers become very accurate tools.

3.4.1 On concrete/shotcrete/masonry & other hard surfaces.

(a) Membrane may be checked for proper thickness with a blunt-nose depth gauge, taking one reading every 500 square feet. Record the readings. Mark the test area for repair, if necessary.

(b) If necessary, test areas are to be patched over with LIQUID BOOT® to a 60 mils minimum dry thickness, extending a minimum of one inch (1") beyond the test perimeter.

3.4.2 On soil subgrade.

(a) Samples may be cut from the membrane and geotextile sandwich to a maximum area of 2 square inches. Measure the thickness with a mil- reading caliper, per 500 sq. feet. Deduct the plain geotextile thickness to determine the thickness of LIQUID BOOT® membrane. Mark the test area for repair.

(b) Voids left by sampling are to be patched with geotextile overlapping the void by a minimum of two inches (2"). Apply a thin tack coat of LIQUID BOOT® under the geotextile patch. Then spray or trowel-apply LIQUID BOOT® to a 60 mils minimum dry thickness, extending at least three inches (3") beyond geotextile patch.

3.4.3 Smoke testing for holes.

(a) Holes or other breaches in the membrane can be detected by conducting a smoke test. This involves pumping smoke under the membrane for a specified period of time, under a specified pressure, which varies from project to project. Contact CETCO for information about this test at 800-527-9948.

3.5 PVC Pipe and Fittings

(a) Plastic pipe, fittings and appurtenances shall be stored in a flat, horizontal position until ready for installation and protected from direct sunlight for extended periods of time.

(b) PVC pipe fittings and appurtenance shall be provided with solvent joints, except where otherwise shown.

(c) Solvent welded joints shall be made in accordance with ASTM D2855. The ends of the plastic pipe shall be cut square and smooth, beveled, and wiped clean.

(d) Primer shall first be applied to the outside of the pipe and the inside of the fitting socket with a small paint brush or other approved applicator.

(e) After priming, solvent cement shall be applied to the outside of the pipe and the inside of the fitting socket with a small paint brush or roller applicator. Solvent shall be applied in such a manner that no material is deposited on the interior surface of the pipe or extruded into the interior of the pipe during joining. The coated surfaces shall be immediately pushed snugly together, and the pipe rotated approximately 1/4 turn to ensure uniform distribution of cement. Excess cement on the exterior of the joint shall be wiped clean immediately after assembly.

(f) Care shall be exercised in assembling a pipeline with solvent welded joints so that stress on previously made joints is avoided. Handling of the pipe following jointing, such as lowering the assembled pipeline into the trench, shall not occur prior to set times specified in ASTM D2855.

(g) PVC piping installed above ground shall be protected against the effects of ultraviolet (UV) light by the application of a heavily pigmented, two part, self-priming, epoxy paint formulated for exterior use, and shall be manufactured with UV inhibitors. Paint shall be Hi-Build Epoxoline II L69F, and topcoat shall be Endura-Shield Series 1095 or approved equal. Paint coating shall have a minimum dry thickness of 4 microns (7 microns wet).

3.6 Gravel Layer

(a) Gravel for the collection layer shall be disturbed over the underlying geotextile to the thickness indicated on the drawings.

(b) The location of collection piping and the limits and depth of the collection gravel shall be verified by survey and reflected as part of the as-built drawings.

3.7 Gas Detection Equipment

(a) Equipment shall be installed at the locations indicated on the drawings, in accordance with local code requirements and the recommendations of the manufacturer.

PART 4 - MEASUREMENT AND PAYMENT

See Section 01 20 00.

****END OF SECTION 40 69 33****

CIVIL IMPROVEMENTS (SHEETS C-001 THROUGH C-505 OF PROJECT PLANS)
SECTION 31 00 00
EARTHWORK

PART 1 - GENERAL

1.1 Summary

(a) This section sets forth the requirements for the earthwork.

(b) The Contractor shall assure that the Inspector shall, at all times, have safe access to the work for the purpose of monitoring and observation of all work.

1.2 Submittals

(a) The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this Section. This submittal list does not release the Contractor from the responsibility of identifying and providing all information requested.

1. Storm Water Pollution Prevention Plan and Storm Water Monitoring Plan
2. Pervious Backfill material
3. Lab data on Bioretention Soil Media
4. Traffic Control Plan
5. Dust Control Plan
6. Survey Data including pre-construction, post construction, interim quantity verification, final quantity verification, and other survey data as required.

PART 2 - PRODUCTS

2.1 Unclassified Fill Material

(a) Native material generated from unclassified excavation areas indicated on the Drawings shall be utilized in the construction of unclassified fills.

(b) Rocks or rock fragments greater than 8 inches in any dimension shall be removed from the fill and disposed of as directed by the Engineer. Rocks or rock fragments less than 8 inches shall be distributed evenly throughout the fill. "Nesting" of rock or rock fragments will not be permitted.

(c) The fill material should generally have a Sand Equivalent of about 30, an Expansion Index of less than 50, and fines content (passing #200 sieve) of less than 50 percent. Other materials may be acceptable with the approval of the Geotechnical Engineer.

2.2 Structural Fill

(a) Native material generated from unclassified excavation areas indicated on the Drawings shall be utilized in the construction of unclassified fills.

(b) Rocks or rock fragments greater than 8 inches in any dimension shall be removed from the fill and disposed of as directed by the Engineer. Rocks or rock fragments less than 8 inches shall be distributed evenly throughout the fill. "Nesting" of rock or rock fragments will not be permitted.

(c) The fill material should generally have a Sand Equivalent of about 30, an Expansion Index of less than 50, and fines content (passing #200 sieve) of less than 50 percent. Other materials may be acceptable with the approval of the Geotechnical Engineer.

(d) Stockpiling of on-site soils meeting the specified soil parameters and required volume may be feasible. It is recommended that the grading contractor review the enclosed boring logs and solicit guidance from Tetra Tech during grading operations.

2.3 Bioretention Basin Gravel

(a) The bioretention basin gravel shall conform to Section 68-2.02F(3) of the Caltrans Standard Specifications for Class 2 Permeable Material.

(b) The CONTRACTOR shall submit a Certificate of Compliance for the material intended for use.

2.4 Mulch for Bioretention Basin

(a) When used in ponding zone, must be aged, stabilized, non-floating mulch, such as a specified composted wood mulch. Gravel mulch may also be used when high flow velocities through the system are expected.

2.5 Bioretention Soil Media

(a) Bioretention soil shall also support vigorous plant growth.

(b) Planting media should consist of 60 to 80% fine sand and 20 to 40% compost.

(c) Planting media for projects draining to nutrient sensitive receiving water should adhere to recommendations for nutrient sensitive planting media provided below.

(i) Sand

(A) Sand should be free of wood, waste, coating such as clay, stone dust, carbonate, etc., or any other deleterious material. All aggregate passing the No. 200 sieve size should be non-plastic. Sand for bioretention should be analyzed by an accredited lab using ASTM D422 and meet the following gradation (Note: All sands complying with ASTM C33 for fine aggregate comply with the gradation requirements below):

Sieve Size (ASTM D422)	% Passing (by weight)	
	Minimum	Maximum
3/8 inch	100	100
# 4	90	100
# 8	70	100
# 16	40	95
# 30	15	70
# 40	5	55
# 100	0	15
# 200	0	5

(ii) Compost

(A) Compost should be a well decomposed, stable, weed free organic matter source derived from waste materials including yard debris, wood wastes, or other organic materials not including manure or biosolids meeting standards developed by the US Composting Council (USCC). The product shall be certified through the USCC Seal of Testing Assurance (STA) Program (a compost testing and information disclosure program).

(B) Feedstock materials shall be specified and include one or more of the following: landscape/yard trimmings, grass clippings, food scraps, and agricultural crop residues.

(C) Organic matter: 35-75% dry weight basis.

(D) Carbon and Nitrogen Ratio: 15:1 < C:N < 25:1

(E) Maturity/Stability: Shall have dark brown color and a soil-like odor. Compost exhibiting a sour or putrid smell, containing recognizable grass or leaves, or is hot (120 F) upon delivery or rewetting is not acceptable.

(F) Toxicity: Any one of the following measures is sufficient to indicate non-toxicity:

(1) NH4 to NH3 ratio of less than 3

(2) Ammonium < 500 ppm, dry weight basis

(3) Seed Germination > 80% of control

(4) Plant trials > 80% of control

(G) Solvita > 5 index value

(H) Nutrient content:

(1) Total Nitrogen content 0.9% or above preferred

(2) Total Boron should be < 80 ppm, soluble boron < 2.5 ppm

(I) Salinity: < 6.0 mmhos/cm

(J) pH between 6.5 and 8 (may vary with plant palette)

(K) Compost for bioretention should be analyzed by an accredited lab using #200, ¼ inch, ½ inch, and 1-inch sieves (ASTM D422 or as approved by the local permitting authority) and meet the following gradation:

Sieve Size	% Passing (by weight)	
	Minimum	Maximum
1 inch	99	100
½ inch	90	100
¼ inch	40	90
# 200	2	10

2.6 Geogrid

(a) Geogrid shall be Tensar InterAx NX 850 or approved equal.

PART 3 - EXECUTION

3.1 General

(a) All earthwork shall conform to the following requirements, where applicable, unless otherwise noted in these Specifications:

(i) All clearing, grubbing, stripping, and site preparation for the Project shall be accomplished to the satisfaction of the Engineer prior to placement of material.

(ii) Equipment used in the excavation, transport, stockpiling, processing, placement and compaction of all materials used in earthwork construction of the basin liner system shall be standard-of-practice grading machinery suitable for performing the required work in a timely and efficient manner.

(iii) Prior to placement of the fill, the existing grade should be probed and accepted by Tetra Tech, and the soils should be scarified to a depth of 6 inches and compacted at a minimum of 110 percent (sandy soils) or 125 percent (clayey soils) of optimum moisture content to at least 90 percent relative compaction per ASTM D1557.

(iv) During general site grading, a minimum cover thickness of 3.5 feet should be achieved or maintained within all graded areas within the landfill limits.

(v) The ground surface shall be prepared to receive materials as shown on the plans and shall be graded until it is uniform and free from uneven features which may prevent uniform material placement. The prepared surface shall be firm and unyielding. Prior to material placement, the ground surface to receive material shall be approved by the CQA Monitor.

(vi) All materials incorporated as part of compacted fill must be inspected and placement must be observed by the CQA Monitor.

(vii) The ground surface prepared to receive fill shall be moisture conditioned and graded until it is uniform and free from uneven features which may prevent uniform compaction. The ground surface to receive fill shall be brought to at least one percent above optimum moisture content and compacted to a minimum of 90 percent of the maximum dry density as determined by ASTM D1557. The prepared surface shall be firm and unyielding and contain no Alluvium/Colluvium. Prior to fill placement, the ground surface to receive fill shall be inspected by the CQA Monitor.

(viii) Where work is interrupted by heavy rains, operations shall not be resumed until observations by the Engineer determine the conditions are suitable for material placement.

(ix) Throughout construction, all excavation and/or fill areas shall be graded to provide positive drainage to appropriate collection/transport structures and to prevent ponding of water. Surface water shall be controlled to avoid damage to adjoining properties or to finished work on the site.

(x) Trenching and excavation shall be conducted in accordance with OSHA regulations and these Specifications.

3.2 Unclassified Excavation

(a) The Contractor shall complete all Unclassified Excavation as indicated on the Drawings, as directed by the Engineer, and as specified herein in order to achieve an adequate foundation. Unauthorized Unclassified Excavation below the design subgrade will not be permitted. Excavated material shall be transported to the designated fill indicated on the drawings.

3.3 Unclassified Fill

(a) Material generated from the excavation shall be incorporated into the fill, in accordance with the requirements of Section 2.1 and 3.1 above. Contractor is advised that screening, rock picking, or selective excavation will be required to meet the maximum particle size requirements for Unclassified Fill. Oversize material shall be moved and stockpiled by Contractor at a location specified by the Project Manager.

3.4 Structural Fill

(a) The upper 1 foot of soils below pavements and any flatwork including exterior slabs should be processed and compacted to at least 95 percent relative compaction at 110 percent of optimum moisture content per ASTM D1557. In pavement and flatwork sections that include a reinforced subgrade this requirement shall apply to the soils below the reinforced subgrade layer.

3.5 Geosynthetic Subgrade Preparation

(a) Prior to placement of the geomembrane (or other geotextile), the Contractor shall prepare the subgrade of the storm water basin to provide a uniform surface, free of

defects, or imperfections that may result in damage to geosynthetics. All construction stakes, hubs, or other items used for grade control, fiber rolls and associated stakes from prior excavation area erosion control shall be removed and any erosion void filled with processed material.

(b) Block voids shall be backfilled and compacted with 1-inch minus material.

(c) Immediately prior to geosynthetic placement, Contractor shall proof roll all surfaces with a steel drum roller weighing not less than 200 pounds per linear inch of drum width. All noted deficiencies in the subgrade surface (by the Engineer, CQA Monitor, or Liner Sub-contractor) shall be repaired at Contractor's expense.

3.6 Foundation Subgrade Preparation

3.6.1 Restroom and Storage Building Pad

(a) The building pad should be overexcavated and recompacted to a depth of at least 2 feet below the bottom of the foundation or floor slab, 4 feet below the existing grade, or to uniform acceptable soils, whichever is deeper. To the extent practicable, the zone of overexcavation should extend outside the perimeter of the building pad for a horizontal distance of at least 5 feet.

3.6.2 Pavement/Flatwork (Driveways and Parking Areas)

(a) Overexcavate and recompact to a depth of at least 2 feet below the proposed subgrade elevation, 3 feet below the existing grade (only for cut areas during site grading), or to uniform acceptable soils, whichever is deeper. To the extent practicable, the zone of overexcavation should extend a horizontal distance of at least 3 feet beyond the outside perimeter of the pavement.

(b) The geogrids should extend at least 3 feet beyond the perimeter of the pavement.

3.6.3 Concrete Basketball Court Area

(a) Overexcavate and recompact to a depth of at least 2 feet below the bottom of the slab, 3 feet below the existing grade, or to uniform acceptable soils, whichever is deeper. To the extent practicable, the zone of overexcavation should extend a horizontal distance of at least 3 feet beyond the outside the perimeter of the slab.

(b) The geogrids should extend at least 7 feet beyond the perimeter of the court slab.

3.6.4 Lightly Loaded Ancillary Structures (Community Wall, Park Entry Sign, Trash Enclosure)

(a) Overexcavate to a depth of at least one foot below the bottom of the proposed improvements, 2 feet below the existing grade, or to uniform acceptable soils, whichever is deeper. The excavation should extend a horizontal distance of at least 2 feet beyond the outside perimeter of the structures.

3.6.5 Disturbed Soils

(a) Disturbed soils at structural and non-structural areas may result from demolition of existing site improvements. These soils should be overexcavated and recompacted to the total depth of the disturbed material.

3.7 Bioretention Soil Media

(a) Place bioretention soil in 6" lifts. Compact each 6" lift of bioretention soil with landscape roller or by lightly wetting. If wetting, let dry overnight before planting.

(b) Do not work within bioretention area during rain or under wet conditions.

(c) Keep heavy machinery outside bioretention area limits.

(d) Stormwater should be directed away from bioretention until construction is complete and drainage area vegetation is stabilized.

3.8 Mulch for Bioretention Basin

(a) Do not apply mulch in ponding zone just prior to or during rainy season.

(b) When mulch is used, excavation must allow for specified bioretention soil depth to achieve finished elevations as shown on Drawings.

3.9 Tolerances

(a) Grades shall be cut to a uniform plane in conformance with the lines and grades indicated on the Drawings. Variances from a uniform plane shall not exceed + 0.20 feet vertical, measured in any direction for a horizontal distance of 20 feet.

PART 4 - MEASUREMENT AND PAYMENT

See Section 01 20 00.

****END OF SECTION 31 00 00****

CIVIL IMPROVEMENTS (SHEETS C-001 THROUGH C-505 OF PROJECT PLANS)
SECTION 31 05 19.16
GEOMEMBRANE

PART 1 - GENERAL

1.1 Summary

(a) This section sets forth the requirements for the Linear Low-Density Polyethylene (LLDPE) geomembrane and installation.

(b) The Contractor shall conduct Quality Assurance (QA) monitoring, observation, and documentation for the storm water basin liner installation. The Contractor shall coordinate and cooperate with the Engineer during all sampling, testing, and certification required by these Specifications.

1.2 Work Included

(a) The specified geomembrane shall be furnished and installed as shown on the Drawings and as required herein for proper installation and function of the composite liner system for the bioretention basin.

(b) The Contractor is advised that acceptance and approval of the geomembrane is a phased process that includes manufacturer's certifications, manufacturer's quality control testing, and nondestructive seam testing. It is a requirement of these Specifications that the manufacturer's certification(s) and quality control test results for the geomembrane, raw resin, and extrudate rod or bead shall be received (by official submittal), reviewed, and approved by the Engineer prior to shipment of these materials to the site. It is the Contractor's responsibility to provide the Engineer with all the required documentation and test results specified herein.

1.3 Quality Control (QC) Testing

(a) Quality Control (QC) testing is the responsibility of the Contractor and shall consist of manufacturer's certification, and seam testing. All QC testing and certification shall be performed in accordance with these Specifications and all costs associated with QC testing shall be borne by the Contractor.

1.4 Submittals

(a) The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this Section. This submittal list does not release the Contractor from the responsibility of identifying and providing all information requested.

(i) Manufacturer's product certification, certified quality control test results, and conformance test results as specified herein.

(ii) Manufacturer's and Contractor's quality control program including shipping, handling, storage, and installation.

(iii) Installation drawings/panel layout.

(iv) Samples of geomembrane material.

(v) Warranties as specified herein.

(vi) Geomembrane installer's subgrade certification.

(vii) Contractor's daily documentation.

(viii) Quality Control (QC) and Installer's Qualification/Resumes.

(ix) Geomembrane panel layout for Engineer's approval prior to installation.

(x) As-Built Survey Record Drawings.

PART 2 - PRODUCTS

2.1 Geomembrane Resin

(a) General

(i) Resin for the geomembrane shall be virgin, first quality linear low-density polyethylene (LLDPE) resin produced in North America and compounded and manufactured specifically for the purpose of producing LLDPE geomembranes for landfill liners. There shall be no intermixing with other resin types. The resin shall be virgin material with no more than 10% rework. If rework is used, it must be of the same formulation (or other approved formulation) as the parent material. No post-consumer resin (PCR) of any type shall be added to the formulation.

(b) Physical Properties

(i) HDPE resin shall meet the following minimum specifications:

TEST	TEST METHOD	UNIT	REQUIREMENTS
Density*	ASTM D1505	g/cc	0.932
Resin Properties	ASTM D1248	% virgin polymers	90
Melt Flow Index	ASTM D1238 Condition E	g/10 min	<1.0
ASTM - American Society for Testing and Materials * Base resin density without carbon black added.			

(c) Resin Manufacturer Certification and Testing

(i) One set of tests shall be performed per batch of resin. At a minimum, the geomembrane manufacturer shall sample and test each compartment of each rail car or truck to ensure that product purity was maintained during shipment. Certified test results shall be submitted to and approved by the Engineer at least 15 working days prior to shipping geomembrane to the site.

2.2 Geomembrane Rolls

(a) General

(i) Geomembrane rolls shall be new, first quality seamless LLDPE manufactured in North America specifically for the purpose of this project. The geomembrane rolls shall have no holes, pinholes, bubbles, blisters, gels, nicks, cuts on liner edges, or contamination by foreign matter. Geomembrane shall be supplied in rolls; folding shall not be permitted. All additives shall be thoroughly dispersed throughout the geomembrane.

(b) Geomembrane

(i) All LLDPE geomembrane shall be textured on both sides. Geomembrane shall have physical properties that equal or exceed the minimum average roll values specified in Table 2.2, or the most recent GRI-GM17 values. The texturing shall be produced by the blown-film method, or approved equivalent, with the texturing uniformly distributed on the surface of the sheet.

(ii) Textured geomembrane, if produced by coextrusion secondary attachment, shall consist of textured material attached to a base sheet. The base sheet shall have physical properties that meet or exceed those specified in Table 2.2. The coextruded secondary attachment sheet shall remain intact and shall be resistant to separation from the base sheet as a result of abrasion and contact with chemicals encountered in solid waste landfill applications. All work associated with secondary attachment shall be performed by the manufacturer of the base sheet.

(c) Table 2.2 shows the physical properties of geomembrane:

Physical Property	Test Method	Unit	30 mil	Frequency
Thickness mils (min. ave)* • Lowest individual for 8 out of 10 values • Lowest individual for any of the 10 valves	ASTM D5994	mils	Nom. (-5%) -10 -15	Per Roll
Asperity Height (min. ave.)*	ASTM D7466	mils	16	Every 2nd roll (1)
Density (max. ave.)*	ASTM D792 ASTM D1505	g/cc	0.939	200,000 lbs
Tensile Properties (min. ave.) (2)* • Break Strength • Break Elongation	ASTM D6693 Type IV	 lb/in lb/in	 45 250	20,000 lbs
2% Modulus (max)	ASTM D5323	lb/in	1800	Per Formulation
Tear Resistance (min. ave.)	ASTM D1004	lb	16	45,000 lbs
Puncture Resistance (min. ave.)*	ASTM D4833	lb	33	45,000 lbs
Anxi-Symmetric Break Resistance Strain (min.)	ASTM D5617	%	30	Per Formulation
Carbon Black Content (range)*	ASTM D4218 (3)	%	2.0-3.0	45,000 lbs
Carbon Black Dispersion*	ASTM D5596	N/A	Note 4	45,000 lbs

Oxidative Induction Time (OIT) (min. ave.)(5) (a) Standard OIT -----or------- (b) High Pressure OIT	 ASTM D3895 ASTM D5885	 min. min	 100 400	 200,000 lbs
Oven Aging at 85°C (6) (a) Standard OIT (min. ave.) % retained after 90 days -----or------- (b) High Pressure OIT (min. ave.) % retained after 90 days	ASTM D5721 ASTM D3895 ASTM D5885	 % %	 35 60	 Per Formulation
UV Resistance (7) a) Standard OIT (min. ave.) ----or------- (b) High Pressure OIT (min. ave.) - % retained after 1600 hrs (9)	ASTM D7238 ASTM D3895 ASTM D5885	 %	 N.R. (8) 35	 Per Formulation

* Conformance Test

(1) Alternate the measurement side for double sided textured sheet

(2) Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction.

- Break elongation is calculated using a gage length of 2.0 inches at 2.0 in./min.

(3) Other methods such as D1603 (tube furnace) or D6370 (TGA) are acceptable if an appropriate correlation to D 4218 (muffle furnace) can be established.

(4) Carbon black dispersion (only near spherical agglomerates) for 10 different views:
9 in Categories 1 or 2 and 1 in Category 3

(5) The manufacturer has the option to select either one of the OIT methods listed to evaluate the antioxidant content in the geomembrane.

(6) It is also recommended to evaluate samples at 30 and 60 days to compare with the 90 day response.

(7) The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.

(8) Not recommended since the high temperature of the Std-OIT test produces an unrealistic result for some of the antioxidants in the UV exposed samples.

(9) UV resistance is based on percent retained value regardless of the original HP-OIT value.

(d) Quality Control – Minimum Lot/Batch

(i) LLDPE geomembrane shall be monitored throughout the manufacturing process for product integrity and consistency. The manufacturer shall sample rolls for the following physical properties and at the minimum frequency, or per batch of resin, or in accordance with GRI GM 17, whichever results in the greatest number of tests:

(A) Geomembrane Density

(B) Geomembrane Thickness

(C) Carbon Black Content

(D) Carbon Black Dispersion

(E) Tensile characteristics (yield strength, elongation at yield, break strength, elongation at break)

(F) Puncture resistance

(G) Tear Resistance

(H) Asperity Height

(ii) In order to minimize the number of conformance samples and tests, the minimum batch or lot size allowed for geomembrane rolls furnished on this project will be 75,000 square feet.

(iii) Certified test results shall be submitted to and approved by the Engineer at least fifteen (15) working days prior to geomembrane delivery to site. The Contractor shall submit a list that indicates date of production, plant location, resin batch number, manufacturing line number and identification number, and square footage of each geomembrane roll. Rolls shall be listed in the order of production with the status of the roll (rejected or approved for shipment). All rolls shall be included in the list whether or not approved for shipment to the project. This information will be used by the Engineer to affix rolls to a specific 100,000 square foot, or smaller, lot for conformance testing per applicable portions of this Section.

(e) Roll Identification

(i) Each roll shall be labeled or tagged with the roll identification number, product identification number, name of manufacturer, date and location of production, product type and grade, lot number, and physical dimensions. The label or tag information shall be affixed or attached to the roll at all times during deployment of the roll.

(f) Geomembrane Samples

(i) The Contractor shall submit for approval by the Engineer samples of geomembrane material(s) and field seams prior to the start of construction. The Contractor shall submit six 8-inch x 10-inch samples of geomembrane material(s) and six samples of field seams that have been made in conformance with these Specifications. The field seam samples shall be fabricated by the Contractor using the same materials, equipment, and procedures proposed for the geomembrane installation. Samples shall be 12 inches wide, plus the seam width, and 19 inches long. The samples shall be numbered and dated.

(g) Warranty

(i) The geomembrane manufacturer shall furnish a written liner warranty on a prorata basis for a period of five years. The warranty shall be against manufacturing defects or workmanship and against deterioration due to ozone, ultraviolet light rays, and/or other normal weather aging.

(ii) The warranty shall be limited to replacement of material only and shall not cover installation of said material. It shall not cover damage due to vandalism, acts of animals, earthquakes, and other unusual acts of God.

(h) Manufacturer's Certification

(i) The Contractor shall submit, to the Engineer for approval, written Manufacturer's Certification (Attachment C-1 or Attachment C-2) that the geomembrane:

(A) Conforms to the material requirements of these Technical Specifications;

(B) Is similar to and of the same formulation as that for which certification is submitted;

(ii) Has been demonstrated by actual usage to be satisfactory for the intended application.

(iii) Manufacturer's certification shall include the minimum average roll values for material to be furnished on this project. The Contractor shall obtain Engineer's approval of the geomembrane prior to shipment to the site. The Contractor will not be allowed to unload or store on site any geomembrane that is delivered prior to obtaining such approval.

(i) Quality Control (QC) Program

(i) The geomembrane manufacturer and the Contractor, each, shall submit a complete description of their quality control program, as applicable, for manufacturing, handling, installing, testing, repairing, and providing a completed lining in accordance with requirements of these Technical Specifications. The description shall include, but not be limited to:

(A) Polymer resin supplier.

(B) Product identification.

(C) Acceptance testing.

(D) Fabrication and production testing.

(E) Installation testing.

(F) Documentation of changes.

(G) Alterations and repairs.

(H) Retests and acceptance.

2.3 Extrudate Rod or Bead

(a) General

(i) The extrudate rod or bead shall be LLDPE and shall be of the same formulation and same supplier as the resin used to produce the geomembrane. All additives shall

be thoroughly dispersed throughout the extrudate rod or bead. There shall be no contamination by foreign matter in the extrudate rod or bead.

(b) Physical Properties

(i) Extrudate rod or bead shall meet the following specifications:

TEST	TEST METHOD	UNITS	REQUIREMENT
Density	ASTM D1505	g/cc	0.939 g/ml (max)
Carbon Black Content	ASTM D1603 Procedure B	%	2 to 3
Melt Flow Index	ASTM D1238, Condition E	g/10 min	<1.0
ASTM - American Society for Testing and Materials			

(c) Manufacturer Certification and Testing

(i) One set of tests shall be performed per batch of extrudate rod or bead. Certified test results shall be submitted to and approved by the Engineer at least fifteen (15) working days prior to shipping the extrudate rod or bead to the site.

PART 3 - EXECUTION

3.1 Shipping, Handling and Storage

(a) General

(i) Geomembrane shall be shipped, stored, and handled in accordance with the manufacturer's recommendations and as specified herein. The Contractor shall be completely responsible for shipping, handling, and storage of all geomembrane. The geomembrane rolls shall be delivered to the site only after the Engineer receives and approves, in writing, the submittal information required in these Technical Specifications.

(b) Shipping

(i) The Contractor shall notify the Engineer at least twenty-four (24) hours prior to scheduled delivery of materials on site. All deliveries shall be made during normal working hours, Monday through Friday, unless specifically authorized by the Engineer. No materials shall be unloaded except in the presence of the Engineer or the Engineer's representative. Geomembrane delivered to the site shall be inspected for damage and unloaded and stored with minimal handling.

(ii) Subsequent to delivery, the Contractor, Geomembrane Installer, and the Engineer shall complete a surface observation of all rolls for defects or damage. Damaged rolls shall be separated from undamaged rolls until proper disposition of material is determined by the Engineer. The Engineer will be the final authority on the determination of damage.

(c) Handling

(i) No hooks, tongs, or other sharp tools or instruments shall be used for handling geomembrane. Contractor shall use cloth chokers and spreader bars for loading and unloading; and spreader bars and roll bars for deployment. Geomembrane shall not be folded or dragged along the ground.

(d) Storage

(i) Geomembrane shall be protected from soil, mud, dirt, debris, puncture, cutting, or other damaging or deleterious conditions. Geomembrane rolls shall not be stored on wooden pallets. Geomembrane shall not be stacked more than three (3) rolls high. Storage shall be in accordance with the manufacturer's recommendations.

3.2 Geomembrane Installation

(a) Material Inspection

(i) Prior to installation, the Contractor shall visually inspect all geomembrane for imperfections, faulty or suspect areas and possible damage. All such defective geomembrane shall be marked, repaired, and/or tested. Geomembrane that cannot be repaired shall be removed from the work area and replaced at no additional cost to the County. Contractor shall inspect and replace faulty material that requires more than one patch per 2,000 square feet of geomembrane deployed at no additional cost to the County. Patches required for destructive testing will not be included in this tabulation.

(b) General

(i) The Contractor shall thoroughly review the manufacturer's recommendations for proper installation procedures of the specified material. The Contractor shall consult with the manufacturer's representatives regarding site specific and environmental impacts that may affect the installation. Such items as adequate or allowable slack, timing of anchor completion to minimize creep, and temperature considerations shall be reviewed, and appropriate action shall be taken by the Contractor to assure intimate contact between subgrade and geomembrane upon placement of overlying material.

(ii) The number of panels deployed on one day shall be limited to the number of panels that can be seamed or tack welded on the same day.

(iii) Contractor shall use equipment that does not damage geomembrane or the supporting subgrade surface.

(iv) All personnel working on geomembrane shall wear shoes that do not damage the geomembrane. No personnel shall be allowed to engage in activities that could damage the geomembrane.

(v) Clamps and other metal tools used in the work area shall have rounded edges with no sharp corners. Clamps and other metal tools shall not be tossed or thrown.

(vi) Panels shall be unrolled using a method that protects geomembrane from scratches and crimps and protects the underlying soil subgrade, or geosynthetic material from damage.

(vii) Contractor shall minimize wrinkles, especially differential wrinkles between panels.

(viii) Contractor shall place adequate temporary hold-downs to prevent uplift by wind. Hold-downs shall not damage geomembrane and shall be continuous along edges to minimize risk of wind flow under panels.

(ix) Contractor shall protect geomembrane in heavy traffic areas using geotextile, extra geomembrane (sacrificial), or other suitable materials. Material used for protection shall be temporary and shall not be used as any part of the permanent installation.

(x) Contractor shall not allow vehicle traffic on geomembrane surface.

(c) Weather Conditions

(i) Temperature

(A) Ambient temperature measured 6 inches above geomembrane surface shall be logged every 2 hours. Geomembrane shall be deployed between ambient temperatures of 40°F to 105°F and when the relative humidity is less than 80 percent. Deployment of geomembrane below 40°F shall only be allowed after it has been verified that the material can be seamed according to these Technical Specifications and is approved by the Engineer. When the temperature is below 50°F, preheating by hot air device 1 inch in front of the extruder shall be provided (note HDPE only). Special test welds may be required to verify that weather conditions are not adversely impacting seam quality.

(ii) Precipitation / Moisture

(A) The geomembrane shall not be deployed during precipitation, in the presence of excessive moisture or in areas of ponded water. Exceptions to these restrictions may be granted with approval of the Engineer and on condition that adequate steps (such as shelters) are taken by the Contractor to produce high quality seams meeting the requirements of this Section.

(iii) Wind Protection

(A) The geomembrane shall not be deployed in the presence of excessive winds. The Contractor shall protect the geomembrane against adverse effects of high winds (such as uplift). Sandbags may be used for this purpose. Sandbags shall be sufficiently close knit to preclude fines from working free of the bottom, sides, or seams. Paper bags, whether or not lined with plastic, shall not be permitted. Burlap bags, if used, shall be lined with plastic. Sandbags shall contain not less than 40 nor more than 60 pounds of sand having 100 percent passing a No. 8 screen. Sandbags shall be tied closed after filling using only plastic ties. Metal or wire ties shall not be allowed. Sandbags that are split, torn, or otherwise losing their contents shall be immediately removed from the work area and replaced, and any spills immediately cleaned up.

3.3 Seams

(a) General

(i) Seams shall be oriented vertically up and down the slopes, not horizontally across the slopes. Each seam shall be numbered and a seam numbering system

compatible with the panel numbering system shall be used. The number of field seams in corners, off-shaped geometric locations, and outside corners shall be minimized.

(ii) Panels shall be overlapped as recommended by the manufacturer or as indicated on the Drawings. Only procedures that do not damage the geomembrane and that are not detrimental to seam weld material shall be used to temporarily bond adjacent panels together.

(iii) All edges, laps, and junctions shall be welded whether or not a specific note or detail on the drawings indicates a weld.

(b) Physical Properties

(i) LLDPE Geomembrane seams shall be tested in accordance with ASTM D6392 and shall meet or exceed the following minimum requirements:

Test	Test Method	Requirements 30-mil Geomembrane
Hot Wedge Seams	ASTM D6392	
Shear Strength (ppi)		45
Shear Elongation (%)		50
Peel strength (ppi)		38
Peel Separation (%)		25
Extrusion Fillet Seams	ASTM D6392	
Shear Strength (lb/in)		45
Shear Elongation (%)		50
Peel strength (lb/in)		34
Peel Separation (%)		25

(c) Seam Preparation

(i) The following steps shall be followed in preparing seams:

(A) Clean surface of grease, moisture, dust, dirt, debris or other foreign material.

(B) Clean surface of oxidation by disc grinder or equivalent not more than 1 hour before seaming (not required for wedge welding).

(C) Use No. 80 grit sandpaper for disc grinder.

(D) All areas where grinding is evident shall be repaired with a method approved by the Engineer.

(E) Cover with single extrudate any bead grooves.

(F) Use soft bristle brush after grinding, if brushing required.

(G) Do not use wire brush after grinding.

(H) Cut wrinkles and "fishmouths" along ridge.

(I) Overlap and seam wrinkles and fishmouths.

(J) Patch wrinkles and fishmouths where overlap is less than 3 inches.

(K) Use firm, dry substrate (piece of geomembrane or other material) directly under seam overlap where subgrade is soft.

(L) Use plywood or other firm material under seam overlap when welding over anchor trench.

(d) Extrusion Welding

(i) As necessary, welding apparatus shall be purged of heat-degraded extrudate before welding if extruder is stopped for longer than 3 minutes. All purged extrudate shall be disposed of off the geomembrane. Extrudate rod shall be removed from welder when welder is idle for over 2 hours.

(ii) Each extruder shoe shall be inspected daily for wear to ensure that its offset is the same as the liner thickness. Worn shoes, damaged or misaligned armature brushes, nozzle contamination, or other worn or damaged parts shall be repaired or replaced prior to further usage.

(iii) Stop-start welding shall be avoided. Existing welds or welds more than 5 minutes old shall be ground 2 inches back from point of stoppage or 2 inches on each side of identified leaks before welding. Weld shall be restarted 2 inches on each side of identified leaks or 2 inches back from point of stoppage.

(iv) No equipment will be allowed to commence welding on liner until the trial weld, made by that equipment, has been approved by the Engineer.

(v) Components shall be mounted on a mobile unit for interface extrudate welding. The following accessories shall be included as a minimum:

(A) Variable speed control.

(B) Wheels with non-skid surface on HDPE.

(C) Directional control.

(D) Automatic hot air system for preheating welding surfaces.

(E) Extruder system with appropriate die.

(F) Four adjustable contact pressure rollers.

(vi) The "hot air system" shall be tested and set up using scrap material each day prior to commencing seaming. Hot air velocity shall be adjusted to account for wind effects. Contact pressure rollers shall be adjusted to prevent surface ripples in sheet.

(e) Hot Wedge Welding

(i) Welding apparatus shall be an automated vehicular mounted device equipped with gauges giving applicable temperatures. The welding apparatus shall be equipped with a temperature gauge.

(ii) A smooth insulating plate or fabric shall be placed beneath to hold welding apparatus after usage. Protective fabric or piece of geomembrane shall be placed beneath hot welding apparatus when resting on geomembrane.

(iii) Moisture build up between sheets shall be prevented.

(iv) No equipment will be allowed to commence welding on liner until the trial seam, made by that equipment, has been approved by the Engineer. All welding conducted at the Contractor's discretion, prior to trial seam results, shall be at the Contractor's risk. Trial seam failures shall be tracked as outlined under "Trial Seams".

(v) A minimum of one spare operable welding apparatus shall be maintained for each three seaming teams.

(vi) An electric generator shall be provided that is capable of providing a constant voltage for the anticipated combined line load. The electric generator shall generally be located outside the liner limit. Protective lining and splash pads large enough to catch spilled fuel shall be placed under electric generator when located on the liner.

(f) Trial Seams

(i) Trial seams shall be demonstrated on pieces of geomembrane liner to verify adequate seaming conditions. Trial seams shall be conducted on each piece of equipment in service, at the following frequency:

(A) At beginning of each seaming shift (5 hours maximum start of day and mid-day).

(B) Any time a piece of equipment is shut down for more than 30 minutes.

(C) At least one per shift for each welding technician performing seaming.

(D) As weather conditions dictate and at Engineer's request.

(ii) Welding technicians shall not change parameters (temperature, speed, wheel adjustment) without successfully performing another trial weld.

(iii) Trial weld shall be constructed adjacent to the area to be seamed. Trial welds shall be in contact with subgrade or geocomposite (same condition as the liner to be seamed).

(iv) The trial weld sample shall be at least 3-feet long and 12 inches wide with the seam centered lengthwise. Two 1-inch wide specimens shall be cut by the Contractor in the presence of the Engineer and the specimens obtained near each opposite end of trial weld seam. Specimens shall be quantitatively tested first, for peel adhesion, and then for bonded seam strength (shear).

(v) Seam breaks will be analyzed for shear and peel strength in accordance with the requirements of GI Test Method GM19 Table 1(a). A trial weld passes when both test specimens pass peel and shear tests.

(vi) Testing shall be repeated in it's entirely if one or more of the specimens fails the peel or shear tests. If trial weld testing fails, the seaming apparatus and operator shall not be used for welding until deficiencies or conditions are corrected and two consecutive successful field test seams are achieved (two specimens in peel and two specimens in shear). All weld seams made by seaming apparatus prior to failure of trial weld shall be checked. Starting back from last seam made, check seams at minimum 10-foot intervals until two consecutive seam tests pass. Seam shall be reconstructed to the satisfaction of the Engineer.

PART 4 - MEASUREMENT AND PAYMENT

See Section 01 20 00.

****END OF SECTION 31 05 19.16****

CIVIL IMPROVEMENTS (SHEETS C-001 THROUGH C-505 OF PROJECT PLANS)
SECTION 31 10 00
CLEARING, GRUBBING, DEMOLITION, AND RELOCATION

PART 1 - GENERAL

1.1 Summary

(a) This section sets forth the requirements for clearing, grubbing, and demolition of existing improvements within the project limits.

1.2 Work Included

(a) Clearing, grubbing, and demolition shall consist of removing and disposing of all objectionable material and improvements, not designated to be protected, from within the limits of work. Various existing improvements will also be removed and disposed of as part of the clearing and grubbing tasks. See Contract Drawings for items to be removed by the Contractor and items to be removed by the County.

(b) The Contractor is advised that not all asphalt pavement, concrete, piping, and/or erosion control improvements to be removed are reflected on the drawings. Prior to submitting a Bid, prospective contractors shall review existing site conditions to determine to their satisfaction, the extent of clearing, grubbing, and removal limits. The Contractor shall remove all existing asphalt concrete pavement, base materials, concrete, or other objectionable material from within the construction limits, in accordance with these Specifications.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 General

(a) Clearing and grubbing shall be performed in accordance with Section 300-1 of the SSPWC. Vegetative material within the limits of work shall be stripped to a sufficient depth to remove all vegetation including roots.

(b) In general, material generated from clearing and grubbing operations shall be transported and disposed of at an approved disposal site (off-site) as directed by the Owner.

PART 4 - MEASUREMENT AND PAYMENT

See Section 01 20 00.

****END OF SECTION 31 10 00****

CIVIL IMPROVEMENTS (SHEETS C-001 THROUGH C-505 OF PROJECT PLANS)
SECTION 32 00 00
MISCELLANEOUS CIVIL IMPROVEMENTS

PART 1 - GENERAL

1.1 Summary

(a) This Section sets forth the requirements for miscellaneous civil improvements indicated on the drawings.

1.2 Submittals Required

(a) The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this Section. This submittal list does not release the Contractor from the responsibility of identifying and providing all information requested.

(i) Concrete Mix Design.

(ii) Reinforcing Steel Certificates

(iii) Curing Compound

(iv) Certificate of compliance for the bedding material intended for use. Gradation for CMB.

(v) Striping and Stenciling

(vi) Wheel Stop

(vii) Bedding Material for Piping

PART 2 - PRODUCTS

2.1 Concrete

(a) Portland Cement concrete structures shall conform to the provisions in Sections 201-1 of the SSPWC and these special provisions. The work includes but is not limited to footings, concrete slab on grade, concrete pads, including bar reinforcement, constructed to the lines and grades shown on the plans.

(b) Unless otherwise specified on the plans, concrete applications shall conform to the following:

(i) Drainage features shall be Class 650-BW-4000 or Class 660-CW-4000P.

(ii) Curb and gutter shall be Class 520-C-2500 or Class 250-C-2500P.

(iii) Settlement Monument and miscellaneous concrete shall be Class 560-C-3250.

(c) The Contractor shall provide concrete mix designs for all concrete applications which meet the specified strength requirements. The proposed mix designs and aggregate gradations shall conform to Section 201-1 of the SSPWC.

(d) Shotcrete shall not be used as an alternative construction method for structures unless approved by the engineer.

(e) The concrete class and maximum slump for all concrete applications shall conform to Table 201-1.1.2 of the SSPWC.

2.2 Reinforcing Steel

(a) Reinforcing steel for concrete structures shall be furnished in accordance with Section 201-2 of the SSPWC, and shall conform to ASTM A615 Grade 60, unless otherwise shown. The Contractor shall submit Certificates of Compliance representative of the reinforcing steel to be used on the project.

2.3 Curing Compound

(a) Curing compounds for concrete improvements shall conform to the requirements of Section 201-4 of the SSPWC, Type 1-D or Type 2. The Contractor shall submit a Certificate of Compliance for the proposed curing compound to be used.

2.4 Signage

(a) Signs shall be in accordance with Section 82 of the Caltrans Standard Specifications. Contractor shall submit manufacturer's product data sheets and certifications for sign materials, colors, and text layout for approval. County shall provide contact information for towed vehicles.

2.5 Parking Area Striping and Stenciling

(a) Paint used for striping and pavement markings shall conform to the requirements of Section 314 of the SSPWC. Paint shall be thermoplastic with glass beads.

2.6 Wheel Stop

(a) Wheel stops shall be Roadtech standard yellow parking blocks or approved equal and shall include two 12-inch-long spikes each for anchoring.

2.7 Bedding Material for Piping

(a) Bedding material for piping shall conform to the requirements of Section 306-6 of the SSPWC. Slurry bedding shall consist of 2-sack sand-cement slurry.

2.8 PVC Pipes and Fittings

(b) PVC pipes and fittings shall be Schedule 80, conforming to the requirements of ASTM D1785, D2464, and D2466, and shall have been approved by the National Sanitation Foundation (NSF). As specified, saw cuts or perforations will be supplier installed.

PART 3 - EXECUTION

3.1 PCC and Reinforcing Steel

(a) Portland Cement concrete structures shall conform to the provisions in Sections 303-1 of the SSPWC and these special provisions.

(b) PCC shall be placed in accordance with 303-1 of the SSPWC.

(a) Reinforcing steel shall be placed in accordance with 303-1.7 of the SSPWC.

3.2 Curing Compound

(a) Concrete curing shall be in accordance with Section 303-1.10 of the SSPWC. Curing compounds shall be applied in accordance with the manufacturer's recommendations.

3.3 Signposts

(a) Signposts shall be installed in accordance with Section 56-3 of the Caltrans Standard Specifications. All fire lane and no parking signs shall be installed in accordance with the OCFA requirements.

3.4 PVC Pipe and Fittings

(b) Plastic pipe, fittings and appurtenances shall be stored in a flat, horizontal position until ready for installation and protected from direct sunlight for extended periods of time.

(c) PVC pipe fittings and appurtenance shall be provided with solvent joints, except where otherwise shown.

(d) Solvent welded joints shall be made in accordance with ASTM D2855. The ends of the plastic pipe shall be cut square and smooth, beveled, and wiped clean.

(e) Primer shall first be applied to the outside of the pipe and the inside of the fitting socket with a small paint brush or other approved applicator.

(f) After priming, solvent cement shall be applied to the outside of the pipe and the inside of the fitting socket with a small paint brush or roller applicator. Solvent shall be applied in such a manner that no material is deposited on the interior surface of the pipe or extruded into the interior of the pipe during joining. The coated surfaces shall be immediately pushed snugly together, and the pipe rotated approximately 1/4 turn to ensure uniform distribution of cement. Excess cement on the exterior of the joint shall be wiped clean immediately after assembly.

(g) Care shall be exercised in assembling a pipeline with solvent welded joints so that stress on previously made joints is avoided. Handling of the pipe following jointing, such as lowering the assembled pipeline into the trench, shall not occur prior to set times specified in ASTM D2855.

(h) PVC piping installed above ground shall be protected against the effects of ultraviolet (UV) light by the application of a heavily pigmented, two part, self-priming, epoxy paint formulated for exterior use, and shall be manufactured with UV inhibitors. Paint shall be

Hi-Build Epoxoline II L69F, and topcoat shall be Endura-Shield Series 1095 or approved equal. Paint coating shall have a minimum dry thickness of 4 microns (7 microns wet).

PART 4 - MEASUREMENT AND PAYMENT

See Section 01 20 00.

****END OF SECTION 32 00 00****

CIVIL IMPROVEMENTS (SHEETS C-001 THROUGH C-505 OF PROJECT PLANS)
SECTION 32 12 16
ASPHALT CONCRETE PAVEMENT

PART 1 - GENERAL

1.1 Work Included

(a) In general, the work includes, but is not limited to the following:

(i) Placement of base material and asphalt concrete that correspond to the pavement sections.

1.2 Quality Control/Quality Assurance

(a) The Contractor is responsible for Quality Control (QC) of all operations in accordance with applicable codes, regulations, Specification requirements, and applicable industry standards.

(b) The Contractor shall assure that the Owner and Engineer/Construction Quality Assurance (CQA) firm shall, at all times, have safe access to the work for the purpose of monitoring, observation, and Quality Assurance (QA) implementation.

1.3 Submittals

(a) The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this Section. This submittal list does not release the Contractor from the responsibility of identifying and providing the necessary information.

(i) Asphalt concrete mix design.

(ii) Gradation and certification for Aggregate Base (AB).

(iii) Manufacturer's certifications for pavement marking materials.

PART 2 - MATERIALS

2.1 Asphalt Concrete (AC)

(a) Asphalt concrete pavement shall be Type B and shall conform with Section 203 and Table 203-6.4.4 of the Standard Specifications for Public Works Construction (SSPWC), 2021 edition. D2 aggregate gradation shall be used for asphalt concrete curbs.

(b) The asphalt binder used shall be PG 64-10 and shall be mixed with the mineral aggregate in conformance with Section 203 SSPWC.

(c) At least seven (7) working days prior to their intended use, the Contractor shall submit the mix designs for the asphalt concrete mix and certificates of compliance indicating that the proposed materials meet the gradation requirements of the SSPWC.

2.2 Crushed Aggregate Base (CAB)

(a) CMB shall conform to the requirements of Section 200-2.2 of the SSPWC.

(b) The Contractor shall submit a certificate of compliance indicating that the proposed material meets the gradation requirements of the Standard Specifications.

PART 3 - CONSTRUCTION METHODS

3.1 Subgrade Preparation

(a) Work in areas identified on the Plans as requiring excavation, grading, compaction, and subgrade preparation by the Contractor shall be completed in accordance with the applicable requirements of Section 301 of the SSPWC.

(b) Excess material generated during subgrade preparation activities shall be transported to an onsite stockpile location approved by the Project Manager.

3.2 Asphalt Concrete (AC)

(a) AC pavement shall be constructed as indicated on the Drawings and in accordance with Section 302-5 of the SSPWC.

3.3 Crushed Aggregate Base (CAB)

(a) CAB shall be placed to the minimum thicknesses indicated on the Drawings, and in accordance with the provisions of Sections 301-1 and 301-2 of the SSPWC.

(b) The material shall be compacted to a relative density of 95 percent in accordance with Section 211 of the SSPWC.

PART 4 - MEASUREMENT AND PAYMENT

See Section 01 20 00.

****END OF SECTION 32 12 16***

WELL MODIFICATION (SHEETS M-100 THROUGH M-105 OF PROJECT PLANS)
SECTION 01 22 00
UNIT PRICES

PART 1 - GENERAL

1.1 Summary

(a) The Bidder in compliance with Vista Grande Park Improvement Project, having examined the Specifications, drawings and related documents, the site of the proposed work, and being familiar with all the conditions surrounding the proposed project, including the availability of equipment, materials, and labor, hereby proposes to furnish all labor, materials, equipment and supplies, and to complete the project in accordance with the contract documents within the time set forth herein, at the prices stated in the Bid Schedule. These unit prices are to cover all expenses incurred in performing the work required under the contract documents of which these specifications are a part.

(b) The unit price shall include all labor, materials (as specified), taxes, equipment, hauling, excavating, overhead, profit, insurance, permits, bonds, etc. to cover the finished work called for.

(c) This section includes:

(i) Measurement and payment criteria applicable to the Work performed under a unit price payment method.

(ii) Defect assessment and non-payment for rejected work.

1.2 Authority

(a) Measurement methods delineated in the Bid Schedule are intended to complement the criteria of this section. In the event of conflict, the requirements of the individual specification section shall govern.

(b) The Contractor shall measure, compute and verify the quantities of all Bid work items.

PART 2 - MATERIALS

NOT USED

PART 3 - EXECUTION

3.1 Unit Quantities Specified

(a) Quantities and measurements indicated in the Bid Schedule are for bidding and contract purposes only. Quantities and measurements supplied or placed in the work and verified by the Engineer shall determine payment.

(b) If the actual Work requires more or fewer quantities than those quantities indicated, the Contractor shall provide the actual required quantities at the unit prices contracted. Contract increases exceeding 15% will require written authorization from the Owner prior

to contractor performing the work. Work performed without prior written authorization is done at the Contactor's cost.

3.2 Measurement of Quantities

(a) Measurement by Depth: No item on the bid schedule will be measured by depth.

(b) Measurement by Weight: No item on the bid schedule will be measured by weight.

(c) Measurement by Volume: Measured by actual volume of item installed.

(d) Measurement by Area: No item on the bid schedule will be measured by Area.

(e) Linear Measurement: Measurement shall be by the linear dimension, at the item centerline or mean chord. All measurement shall be to the design ("neat-line") dimensions and grades.

(f) Each Measurement: Measured by actual quantity of item installed.

(g) Measurement by Lump Sum: Measured by the item bid price of complete works to be installed.

3.3 Payment

(a) Payment includes: Full compensation for all health and safety measures, insurance, bonds, overhead, administration costs, permits, labor, products, materials, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

(b) Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Engineer multiplied by the unit price for Work which is incorporated in or made necessary by the Work.

3.4 Defect Assessment

(a) Replace the Work or portions of the Work not conforming to specified requirements.

(b) If, in the opinion of the Engineer or Owner, it is not practical to remove and replace the Work, the Engineer will direct one of the following remedies:

(i) The defective work may remain, but the unit sum/price will be adjusted to a new unit/price at the discretion of the Engineer and/or Owner.

(ii) The defective work will be repaired in accordance with the instructions of the Engineer, and the unit sum/price will be adjusted to a new unit price at the discretion of the Engineer and/or Owner.

(c) The individual specification sections may modify these options or may identify a specific formula or percentage unit price reduction.

3.5 Non-Payment for Rejected Products

(a) Payment will not be made for any of the following:

(i) Products wasted or disposed of in a manner that is not acceptable.

(ii) Products determined as unacceptable before or after placement.

(iii) Products not completely unloaded from the transporting vehicle.

(iv) Products placed beyond the lines and levels of the required Work

(v) Products remaining on hand after completion of the Work.

(vi) Loading, hauling and disposing or restocking of rejected products.

3.6 Method of Measurement and Payment

(a) All work to be paid for at a contract per unit price of measurement will be measured by the Engineer in accordance with United States Standard measures.

(b) Full compensation for all expenses shall be considered as included in the unit prices paid for the materials being measured and no additional compensation will be allowed therefore.

(c) The method of measurement and payment, as described herein is for each item that appears in the Bid Schedule. Payments for unit prices items shall be made on the basis of measured quantity in place as determined by the Engineer. Payment for lump-sum items shall be paid as a prorate portion of the entire lump sum based upon an estimated percent completion of the lump sum, as approved by the Engineer.

(i) Mobilization/Demobilization: Mobilization/Demobilization shall provide all equipment and temporary facilities including transportation, hauling, maintenance and service including bonds, permits, insurance, health and safety plan preparation, etc., as specified herein. It shall also provide for removal of all equipment and supplies at project completion. Payment for mobilization/demobilization shall be based on the contract lump-sum bid price and no additional compensation shall be allowed. Payment for this bid item shall not exceed 10% of the total price bid.

(ii) Trenching in Soil: Pipe Trench in Soil shall be paid at the contract price per linear foot for complete work per the contract specification and all labor, materials, and equipment necessary including trenching, shoring, backfill, etc. shall be included. No additional compensation shall be allowed.

(iii) Trenching in Rock: Pipe Trench in Rock shall be paid at the contract price per linear foot for complete work per the contract specification and all labor, materials, and equipment necessary including trenching, shoring, backfill, etc. shall be included. No additional compensation shall be allowed.

(iv) 3" HDPE Pipe: The 3" HDPE Pipe shall be paid at the contract price per linear foot for complete work per the contract specification and all labor, materials, and equipment necessary including welding, pipe, fittings, leak detection, testing, etc. shall be included. No additional compensation shall be allowed.

(v) Replacement Well: The Replacement Well shall be paid at the contract price per Each Unit work per the contract specification and all labor, materials, and equipment necessary including welding, pipe, fittings, valves, leak detection, testing, etc. shall be included. No additional compensation shall be allowed.

(vi) Tracer Wire: The Electrical wire shall be paid at contract price per linear foot for complete work per the contract specification and all labor, materials, and equipment necessary including wiring and terminations, etc. shall be included. No additional compensation shall be allowed.

(vii) Concrete Vaults: The Concrete Vaults shall be paid at contract price per Each Unit for complete work per the contract specification and all labor, materials, and equipment necessary including Vaults, Lids, etc. shall be included. No additional compensation shall be allowed.

****END OF SECTION 01 22 00****

WELL MODIFICATION (SHEETS M-100 THROUGH M-105 OF PROJECT PLANS)
SECTION 31 23 00
EXCAVATION AND FILL

PART 1 - GENERAL

1.1 Summary

(a) The Work under this section shall include, but is not limited to pipe trenches.

1.2 References

(a) None.

1.3 General Requirements

(a) The Contractor shall comply with all applicable regulations and shall protect open excavations, trenches, holes, with fences, covers, or railing as required to maintain safe pedestrian and/or vehicular traffic.

(b) The Contractor shall notify Underground Service Alert (USA) at 1-800-642-2444, at least two business days prior to beginning work to verify existing underground utilities' locations.

(c) The Contractor shall pot-hole and expose each potentially conflicting utility prior to construction unless approved in writing by the Engineer. Pot-holing shall not precede construction by more than 48 hours.

(d) The Contractor shall be responsible for verifying underground utilities locations.

(e) The excavation shall be fully protected against accidental or unauthorized entry until backfilled.

1.4 Costs

(a) The Owner shall employ and pay for compaction and moisture testing in completed trenches and excavations.

(b) Retesting required because of failure of compaction density or moisture content shall be reimbursed by the Contractor to the Owner.

PART 2 - MATERIALS

2.1 Excavated Soils

(a) Excavated soils from the trenching operations may be reused as trench backfill provided the following:

(i) The excavated backfill soil is clean, odorless, free of vegetation, refuse or any other deleterious material and to the satisfaction of the Engineer.

(ii) The permeability of the backfilled material shall be less than or equal to the permeability of the existing cover material.

PART 3 - EXECUTION

3.1 General

(a) Contractor is responsible for the finished condition of his work. Before working over backfill or similar work of other contractors, verify that such work has been properly backfilled and compacted. Notify the Owner promptly in writing if any conditions exist which are contrary to requirements. Responsibility for areas backfilled, compacted, and repaired by other contractors remains in those separate sections.

(b) The Contractor shall restore, without extra cost to the Owner, street pavements, access roads, walks, curbs, gutters, trees, shrubbery, landscaping, etc., that may be damaged in the performance of work under this section, in a manner prescribed by authorities having jurisdiction.

3.2 Control of Water

(a) Control drainage in the vicinity of the Work to prevent water from accumulating or running into the excavation or into adjacent property. Provide any shoring and bulk-heading necessary to hold the earth back. Keep excavations and trenches free from excess water.

(b) The Contractor shall provide and maintain at all times during construction ample means and devices with which to promptly remove and properly dispose of all water from any source entering the excavations or other parts of the Work. Dewatering shall be accomplished by methods which will ensure a dry excavation and preservation of the final lines and grades of the bottoms of excavations.

3.3 Pipe Bedding and Backfill

(a) The trench bottom shall be relatively smooth and free of rocks and/or refuse material. As indicated in the Drawings, clean sand or pea gravel bedding shall be placed around the pipe as a cushion and for protection from pipe damage.

(b) The sand or gravel backfill material shall be placed evenly and carefully around and over the pipe to support the bottom half of the pipe.

(c) Each layer of the sand material shall be thoroughly and carefully compacted until the required depth exists.

(d) The Contractor shall provide pipe bedding. Costs for material and placement shall be in the trench excavation and backfill category.

3.4 Filling

(a) Use excavated soils or clean fill materials for required backfill.

(b) Selection and Placing of Engineered Fill: Preparation of engineered fill areas, and selection and placing of engineered fill materials will be observed and tested by the

Owner. Notify the Owner 24 hours in advance of filling operations to permit required testing. The cost of observation and testing will be borne by the Owner.

(c) The Contractor shall place fill material in 12-inch loose lifts, moisture condition and compact it to a minimum of 90 percent of the maximum density as determined by ASTM Test Method D1557-78 and at 0-3 percent above optimum moisture content. Compaction shall be achieved by using sheepsfoot or vibrating rollers. Heavy impact type equipment such as stompers shall not permitted for use for compaction.

(d) The Contractor shall over fill for settlement of all backfilled material as shown on drawings.

(e) After placing of backfill has been started, the Contractor shall proceed as soon as practicable with densification. Backfill shall be mechanically compacted by means of tamping rollers, sheepsfoot rollers, pneumatic tire rollers, vibrating rollers, or other mechanical tampers. Jetting will not be permitted.

(f) All compaction equipment shall be of a size and type approved by the Owner.

(g) Permission to use specific compaction equipment shall not be construed as guaranteeing or implying that the use of such equipment will not result in damage to adjacent ground, existing improvements, or improvements installed under the Contract. The Contractor shall be responsible for any damage caused by his activities and shall make his own determination in this regard.

3.5 Clean-Up

(a) After all backfill has been completed, the work area shall be dressed smooth and left in a neat and presentable condition to the satisfaction of the Owner.

3.6 Bracing and Shoring Trenches

(a) The Contractor shall provide materials for shoring and bracing necessary for safety of personnel, protection of work, and in compliance with the requirements of government agencies having jurisdiction. The Contractor shall maintain all shoring and bracing in excavations for as long as the excavations remain open. The Contractor shall provide shoring and bracing where sloping is not practical. The Contractor shall carry shoring and bracing down as excavation progresses.

(b) The manner of bracing excavations shall be as set forth in the rules, orders, and regulations of the State of California. The Contractor shall obtain an excavation permit as required by OSHA, Cal/OSHA, and DOSH.

(c) A detailed plan showing the design of shoring, bracing, or sloping of all trenches five (5) feet deep or deeper must be submitted by the Contractor to the Engineer prior to commencing any such trenching operations. Such plan shall be prepared, signed, and stamped by a civil or structural engineer, registered to practice in the State of California. Compensation for bracing and shoring trenches is to be included in the unit costs for excavation and backfill of the pipe trench.

3.7 Protection

(a) The maximum length of open trench shall be 1000 feet.

3.8 Testing

(a) Compaction shall be established by the compaction test procedures prescribed in ASTM Designation D-1557.

(b) All soils testing shall be performed by an independent accredited testing laboratory employed by the Owner at the Owner's expense or the Owner's test laboratory.

(c) The Contractor is to cooperate with the soil laboratory in allowing tests and following recommendations as to whether areas have or have not met earthwork criteria acceptable to the Owner.

****END OF SECTION 31 23 00****

WELL MODIFICATION (SHEETS M-100 THROUGH M-105 OF PROJECT PLANS)
SECTION 40 15 00
PROCESS PIPING

PART 1 - GENERAL

1.1 Section Includes

(a) Plant Piping and Pipe Fittings for General Construction

(b) Pipe hangers and supports

(c) Painting Requirements

(d) Test Requirements

1.2 Unit Price

(a) The price for Process Piping shall be included in the appropriate bid item in section 8-01 22 00 "Unit Prices."

1.3 References

(a) The latest versions of the following references are applicable:

(i) ANSI/ASME B31.3 Process Piping Code

(ii) Factory Mutual Global (FM).

(iii) 49 CFR 192 Transportation of Natural and Other Gases by Pipeline: Minimum Federal Safety Standards

(iv) ANSI B1.1 – Unified Inch Screw Threads

(v) ANSI B1.20.1 – Pipe Thread, General Purpose, Inch

(vi) ANSI B16.1 – Cast Iron Pipe Flanges and Flanged Fittings

(vii) ANSI B16.5 – Pipe Flanges and Flanged Fittings

(viii) ANSI B16.9 – Wrought Steel Butt Welding Fittings

(ix) ANSI B16.10 – Face-to-face and End-to-End Dimensions of Valves

(x) ANSI B16.11 – Forged Steel Fittings, Socket Welding, and Threaded

(xi) ANSI B16.20 – Ring Joint Gaskets and Grooves for Steel PPE Flanges

(xii) ANSI B16.21 – Nonmetallic Flat Gaskets for Pipe Fittings

(xiii) ANSI B16.22 – Wrought Copper and Copper Alloy Solder Joint Pressure Fittings

(xiv) ANSI B16.25 – Butt Welding Ends

(xv) ANSI B16.34 – Valves – Flanged, Threaded and Welding End

(xvi) ANSI B16.47 – Large Diameter Steel Flanges

(xvii) ANSI B18.2.1 – Square and Hex Bolts and Screws – Inch Series

(xviii) ANSI B18.2.2 – Square and Hex Nuts – Inch Series

(xix) ANSI Z358.1 – Emergency Eye Wash and Shower Equipment

(xx) ASME Boiler and Pressure Vessel Code Section II Materials

(xxi) ASME Boiler and Pressure Vessel Code Section V. Nondestructive Examination

(i) ASME Boiler and Pressure Vessel Code Section IX Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing operators

(ii) ASTM A36 – Standard Specifications for Structural Steel

(iii) ASTM A53 – Standard specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

(iv) ASTM A105 – Standard Specification for Forgings, Carbon Steel, for Piping Components

(v) ASTM A106 – Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service

(vi) ASTM A139 – Standard Specification for Electri-Fusion (Arc) – Welded Steel Pipe (NPS4 and over)

(vii) ASTM A181 – Standard Specification for Carbon Steel Forgings for General Purpose Piping

(viii) ASTM A182 – Standard Specification for Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service

(ix) ASTM A183 – Standard Specification for Carbon Steel Track Bolts and Nuts

(x) ASTM A193 – Standard Specification for Alloy-Steel and Stainless Steel Materials for High Temperature Service

(xi) ASTM A194 – Standard Specification for Carbon and Alloy-Steel Nuts and Bolts for High-Pressure and High-Temperature Service

(xii) ASTM A197 – Standard Specifications for Cupola Malleable Iron

(xiii) ASTM A234 – Standard Specifications for Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures

(xiv) ASTM A307 – Standard Specifications for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength

(xv) ASTM A312 – Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes

(xvi) ASTM A335 – Standard Specification for Seamless Ferritic Alloy-Steel Pipe for High Temperature Service

(xvii) ASTM A336 – Standard Specification for Steel Forgings, Alloy, for Pressure an High-Temperature Parts.

(xviii) ASTM A351 – Standard Specification for Castings, Austenitic – Ferritic (Duplex) for Pressure Containing Parts

(xix) ASTM A395 – Standard Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures

(xx) ASTM A403 – Standard Specification for Wrought Austenitic Stainless Steel Pipe Fitting

(xxi) ASTM A420 – Standard Specification for Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service.

(xxii) ASTM A516 – Standard Specification for Pressure Vessel Plates, Carbon Steel, for Moderate and Lower-Temperature Services

(xxiii) ASTM A536 – Standard Specification for Ductile Iron Castings

(xxiv) ASTM A563 Rev A – Standard Specification for Carbon and Alloy Steeve Nuts

(xxv) ASTM A700 – Standard Practice for Packaging, Marking, and Loading Methods for Steel Products for Domestic Shipment

(xxvi) ASTM A795 – Standard Specification for Black and Hot-Dipped Zinc Coated (galvanized) Welded and Seamless Steel Pipe for Fire Protection Use.

(xxvii) ASTM A858 – Standard Specification for Heat-Treated Carbon Steel Fittings for low Temperature and Corrosive Service.

(xxviii) ASTM A860 – Standard Specification for Wrought High-Strength Low-Alloy Steel Butt-Welded Fittings.

(xxix) ASTM B88 – Standard Specifications for Seamless Copper Water Tube.

(xxx) ASTM B366 Rev B – Standard Specification for Factory-Made Wrought Nickel and Nickel Alloy Fittings.

(xxxi) ASTM B462 – Standard Specification for Forged or Rolled Alloy Pipe Flanged, Forged Fittings, and Valves and Parts for Corrosive High-Temperature Service.

(xxxii) ASTM B464 – Standard Specification for Welded and Alloy Pipe

(xxxiii) ASTM B633 – Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel.

(xxxiv) ASTM D1784 – Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.

(xxxv) ASTM D1785 – Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120

(xxxvi) ASTM D2321 – Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications

(xxxvii) ASTM D2513 – Standard Specification for Thermal plastic Gas Pressure Pipe, Tubing and Fittings

(xxxviii) ASTM D2774 – Standard Practice for Underground Installation of Thermoplastic Pressure Piping

(xxxix) ASTM D3035 – Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter

(xl) ASTM D3350 – Standard Specification for Polyethylene Plastic Pipe and Fitting Material

(xli) ASTM F585 – Standard Guide for Insertion of Flexible Polyethylene Pipe into Existing Sewers

(xlii) ASTM F714 – Standard Specifications for Polyethylene Pipe Based on Outside Diameter

(xliii) ASTM F471 - Standard Specification for Chlorinated Poly (Vinyl Chloride (CPVC) Plastic Pipe, Schedules 40 and 80

(xliv) ASTM F1387 – Standard Specification for Performance of Piping and Tubing Mechanically Attached Fittings

(xlv) ASTM F1417 – Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air

(xlvi) ASTM F1962 Standard Guide for Use of Maxi-Horizontal Directional Drilling for Placement of Polyethylene Pipe or Conduit under Obstacles, Including River Crossings

(xlvii) ASTM F2164 – Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems using Hydrostatic Pressure

(xlviii) ASTM F2206 – Standard Practice for Fabricated Fittings of Butt-Fused Polyethylene (PE) Plastic Pie, Fittings, Sheet Stock, Plate Stock, or Block Stock

(xlix) ASTM F2620 – Standard Specification for Heat Fusion Joining of Polyethylene Pipe Butt Fusion Joint

(l) ASTM F3124 – Standard Practice for Data Recording the Procedure Used to Produce Heat Butt Fusion Joints

(li) ASTM F3183 Standard Practice for Guided Side Bend Evaluation of Polyethylene Pipe Butt Fusion Joint

(lii) ASTM F3190 Standard Practice for Heat Fusion Equipment (HFE) Operator Qualification on Polyethylene (PE) and Polyamide (PA) Pipe and Fittings.

(liii) NFPA 13 – Standard for the Installation of Sprinkler Systems

(liv) NFPA 24 – Installation of Private Fire Service Mains and their Appurtenances

(lv) NFPA 70 – National Electric Code

(lvi) AWS D1.1, Structural Welding Code –Steel

(lvii) MSS SP-25 – Standard Marking System for Valves, Fittings, Flanges, and Unions

(lviii) MSS SP-58 – Pipe Hangers and Supports-Materials, Design and Manufacture

(lix) Pipe Fabrication Institute ES-5 – Cleaning of Fabricated Piping

(lx) Pipe Fabrication Institute ES-31 – Standards for Protection of Ends of Fabricated Pipe Assemblies

(lxi) ANSI/AWWA C901 Polyethylene (PE) Pressure Pipe and Tubing, ½ in through 3 in.

(lxii) ANSI/AWWA C906 Polyethylene (PE) Pressure pipe and Fittings, 4 in through 63 in.

(lxiii) PPI Handbook of Polyethylene Pipe – 2009 (2nd Edition)

(lxiv) PPI Material handling guide for HDPE Pipe and Fittings

(lxv) PPI TR-38 Bolt Torque for Polyethylene Flanged Joints

(lxvi) PPI TN-42 Recommended Minimum Training Guidelines for PE pipe Butt Fusion Joining Operators for Municipal and Industrial Projects

(lxvii) PPI TN-46 Guidelines for Use of Mini-Horizontal Directional drilling for placement of High-Density Polyethylene Pipe

1.4 Submittals

(a) The Contractor shall submit documents for any material substitution in accordance with Section 01 33 00, "Submittal Procedures."

(b) Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements as required by the piping governing code.

(c) Submit Welder's qualifications (including HDPE Pipe welding qualifications from the HDPE Pipe Vendor).

(d) Submit material test reports for pipe and fittings.

1.5 Quality Assurance

(a) Maintain Field Installation Inspection Reports for all piping systems on project site.

(b) The work of this section shall be completed under a Quality Assurance Program that meets the applicable requirements given in Section 10 45 00 Quality Control.

1.6 Regulatory Requirements

(a) Conform to all applicable codes for installation of all piping.

PART 2 - MATERIALS

2.1 Pipe, Valves, and Fittings

(a) Refer to Service Codes

(i) AV – Atmospheric Vent

(ii) BA – Breathing Air

(iii) BD – Blow Down

(iv) BFW – Boiler Feed Water

(v) CC – Contaminated Condensate

(vi) CV – Cold Vent

(vii) CWR – Cooling Water Return

(viii) CWS – Cooling Water Supply

(ix) DMW – Demineralized Water

(x) DR – Drain

(xi) DW – Drinking Water

(xii) ER – Ethylene Refrigerant

(xiii) FG – Fuel Gas

(xiv) FLP – Propane

(xv) FO – Fuel Oil

(xvi) FW – Fire Water

(xvii) GLR – Glycol Return

(xviii) GLS – Glycol Supply

(xix) H – Hydrogen

(xx) HS – High Pressure Steam

(xxi) IA – Instrument Air

(xxii) LFG – Landfill Gas

(xxiii) LNG – Liquified Natural Gas

(xxiv) LO – Lube Oil

(xxv) LPG – Liquified Petroleum Gas

(xxvi) N – Nitrogen

(xxvii) NA – Caustic

(xxviii) NH – Ammonium

(xxix) OX – Oxygen

(xxx) PA – Plant Air

(xxxi) PC – Process Condensate

(xxxii) PR - Propylene Refrigerant

(xxxiii) PW – Process Water

(xxxiv) RV – Relief Vent

(xxxv) SC – Steam Condensate

(xxxvi) SS – Sanitary Sewer

(xxxvii) STS – Storm Sewer

(xxxviii) SW – Service Water

(xxxix) VC – Vacuum Condensate

(xl) VD – Vacuum Exhaust

(xli) WW – Waste Water

2.2 Other Items and Specialty Items

(a) Listed in the Equipment List and Instrument List

(b) Listed in the Valve Catalog

2.3 Pipe Hangers and Supports

(a) See Specification Section 05 60 00 Miscellaneous Metals and Pipe Support.

(b) Engineered Pipe Supports and shown on piping drawings and detailed in individual pipe support drawings.

2.4 Consumables

(a) All consumables required for pipe fabrication and erection shall be supplied by the contractor.

2.5 HDPE Piping and Fittings

(a) HDPE Piping shall conform to the requirements of ASTM D3035 and D3261.

(b) All HDPE piping and fittings shall be made from a polyethylene Type PE4710 except where called out otherwise on the drawings. HDPE pipe shall be protected from U.V. degradation from exposure to the sun.

(c) Nominal pipe sizes of 3 inches or greater shall be SDR 17 with a pressure rating of 100 psi at 73.4 F, unless otherwise shown on the drawings.

(d) Nominal pipe sizes under 3 inches shall be SDR 11 with a pressure rating of 200 psi at 73.4 F, unless otherwise shown on the drawings.

(e) HDPE Pipe used for compressed air service shall be SDR9 or SDR7.

(f) Double contained HDPE pipe shall be ASAHI Fluid Lok, ASAHI Polyflo, or ISCO Dual Contained, or approved equal.

(g) HDPE fittings shall be of a material which is compatible with the pipe for the purpose of fusion welding and shall be free from cracks, holes, foreign intrusions, voids, or other defects. The minimum "quick-burst" strength of the fittings shall not be less than that of the pipe.

(h) For HDPE pipe in vacuum services, if the size of the butterfly valve's disk interferes with the inside diameter of the pipe, the Contractor may at his option either remove by machining excess material from the ID of the pipe flange adapter or use a flange adapter with a thickness that will allow the valve to clear the pipe.

PART 3 - EXECUTION

3.1 General Requirements

(a) Piping drawings, P&IDs, piping material specification and instrument material specifications are complementary. Piping work shown on one of the documents only shall be incorporated as though it were shown on all. If the drawings conflict, the P&ID drawings shall govern.

(b) Fabricate and erect piping as detailed on drawings, except where variations are required to suit equipment furnished under this Contract; no additional compensation will be allowed for modifications of piping required to suite equipment, valves and specialties furnished.

(c) Before fabrication, verify measurements at the site as required for completion of the work, including actual size and location of equipment and piping connections and verification of flange facings and drillings to which piping connects. Verify location of embedded drain piping connections.

(d) If Contractor proceeds with work without checking location of work by others, it assumes responsibility for corrections or modifications required as a result of connection locations that cause a piping mismatch.

(e) Notify Owner immediately regarding incorrect locations of connections.

(f) Make field measurements necessary to accurately determine piping makeup lengths or closures and to permit working piping into place without forcing or springing. Expansion joints and flexible hose connections shall not be used to compensate for misaligned piping.

3.2 Packaging and Storage

(a) Crate, box, strap, block, separate with dunnage, cover with weather resisting materials or otherwise prepare all items for shipment to prevent damage and corrosion during handling, shipping and outdoor storage for a period of up to six months in general accordance with ASTM A700.

(b) Protect all openings with watertight coverings to prevent the entrance of moisture, dirt, or debris. Protect projecting parts and machined surfaces with metal or plastic caps or equal methods. Use flange protectors of hard plastic or ¼-inch think plywood.

(c) Box all loose pieces, including bolting parts and gaskets, for protection during shipment, in wood boxes with waterproof linings to prevent entry of dirt and moisture.

3.3 Installation

(a) Interferences: Where interferences are found in the field, such as among piping conduit, air and cable ducts and electrical boxes, resolve the problem with the Owner before proceeding with the work.

(b) Cutting:

(i) Cut all austenitic stainless steel pipe by sawing or machining only, to minimize corrosion metallurgy damage from overheating.

(ii) Whenever piping cuts are made at the location of existing welds, remove the existing weld completely as part of the new weld preparation.

(iii) Cut pipe for installation of valves and fittings to leave a smooth cut end at right angles to the axis of the pipe. Cur iron pipe with mechanical pipe cutters, torch cutting shall not be used.

(c) Instruments and Tubing

(i) Instrumentation and instrument connections installed with the piping shall be in accordance with the Engineering Codes and specifications as specified herein. If any conflicts exist, the Owner shall be contacted for resolution.

(ii) Group, space, support, and locate tubing lines to be parallel whenever possible, protected from damage and arranged to compensate for deflection due to thermal change. Do not place undue stress upon connection points. Insofar as possible, route instrument tubing and piping together.

(iii) Use full lengths of tubing where possible. Do not use couplings and short lengths of tubing where a single length can be used.

(iv) When single or multiple runs of tubing run through the floor, provide protection for distance of 6 feet above the floor by enclosing in conduit, Unistrut® or other enclosure.

(v) The use of pliers or pipe wrenches for tightening nuts or tubing connectors is prohibited. Use proper cutting, forming and assembling tools for the erection of all tubing. Do not cut tubing with a hacksaw.

(vi) For threaded instrument connections only, use high grade sealing compound. Do not use Teflon tape.

(vii) Do not sue instrument impulse lines or their supports for supporting other equipment. Do not use instrument root valves or their nipples to support instrument tubing.

(viii) Use tube support systems such as Unistrut®, approved galvanized steel or aluminum tray products, channel members and tubing clamps or other means for protection and support of tubing groups without sagging.

(ix) Mount tubing support structures (trays, raceways, channel supports), whenever practicable, independently of instruments or their support (cabinets, racks, stands, or brackets) with no direct connection or contact with them.

(d) Galvanized Piping:

(i) Do not bend or weld on galvanized piping and fittings, since this damages the galvanizing, causing it to flake off.

(e) Nonmetallic Piping

(i) Fabricate and install nonmetallic piping in accordance with the piping specifications.

(f) Branch Connections

(i) To determine the branch connection configuration for small bore piping, use the applicable piping line specification. Large bore piping branch connections are detailed on isometric drawings.

(ii) Taps for branch lines in steam, gas and air lines shall be made in top of pipe unless specifically noted otherwise.

(g) Flanged Connections

(i) Fit flange face with holes straddling the principal centerline. Keep flanged joints to a minimum to reduce any possibility of leakage. Uniformly tighten all bolts in flanged construction. Hammering and bumping are prohibited. Get uniform pressure on the gasket and avoid overstressing of the bolts, dishing of flanges and compression of the gasket beyond limits. Lubricate all bolts over the entire thread with a heavy graphite-and-oil mixture before tightening operation.

(ii) Bolting with Spiral-wound Gaskets: Tightening of bolted joints shall be per vendor recommendations and good industry practice.

(iii) Bolting with Rubber Gaskets: Uniformly tighten bolts to compress gaskets approximately ½ the original thickness. Avoid damaging the gasket by over-tightening.

(h) Valves:

(i) The Contractor shall unload, store, handle, and install the valves in accordance with the valve manufacturer's recommendations.

(ii) Before installing any valve, check that the valve body and stuffing boxes are properly packed and the gland nuts tightened. Open and close the valve to verify all parts are in working condition.

(iii) Attention to the positioning of the valve and valve stem, when applicable, is critical and shall be in accordance with the design drawings. Install valves in horizontal lines with stems pointing up whenever possible. If not practical, point the stem in a horizontal position. Do not install valves with the stems pointed down.

(iv) Install globe valves with the flow direction from below to above seat unless specifically noted otherwise.

(v) Excessive piping strains and bending moments on valves shall be avoided. Excessive strains and moments may result in distorted valve seats.

(vi) Install large valves in accordance with the design drawings.

(vii) Position valves in accessible locations. When welding into piping, set valves in the open position so that the valve discs and plugs are off the seats. Do not overheat and damage the seat area.

(viii) The Contractor shall provide new valve bonnet gaskets for manual/check valves that must be opened to support hydrotesting or heat tracing.

(ix) Valves with internals removed shall be tagged to indicate that internals have been removed. Internal parts that have been removed shall be bagged and tagged with the valve number and firmly attached to the appropriate valve.

(x) Control Valves: Hand and install air-operated or electrically operated control valves with care to prevent bent or sprung stems. Do not operate valves without first consulting the Owner. Serious damage to the plug, seat or stem can result from improper handling or operation.

(i) Flow Nozzles, Orifice Flanges:

(i) If required, flow nozzles and orifice flanges shall be installed in the piping where indicated on the drawings.

(ii) Flanges for orifices shall be of the orifice flange type with the pressure class and material in accordance with the drawings.

(j) Openings

(i) Where necessary, remove cover plates and grating, cut and replace to install piping. Neatly finish grating penetrations and band with banding bars of the same material, depth and thickness as the existing bearing bars by welding.

(ii) Core drill holes 12 inches and smaller with a screw feed core drill. Holes greater than12 inches diameter may be chipped. Do not cut rebar without prior approval of the Owner. Seal gaps between pipe and openings as directed by the Owner.

(iii) Flash all wall and roof openings with a watertight design approved by the owner.

3.4 Testing

(a) HDPE and PVC Pipe shall be tested with Air to 10 psig. The minimum test time shall be four hours. A gauge shall be used with a minimum 0.2 psi resolution.

(b) When pressure testing, because of the high energy content of compressed air, extreme caution should be used when working around the pipe being tested. Adequate barricade and safety precautions must be used to protect people and property.

(c) The piping network may be tested in sections or as an entire assembly at the Contractor's option. When testing as sections, following testing, all disconnected pipes or joints shall be reconnected using proven joining techniques (e.g., flanged, screwed, etc.)

(d) The Contractor shall provide all temporary plugs flanges or other sealing devices needed for the air testing.

3.5 Painting

(a) Painting shall be per 8-09 91 00 "Painting".

3.6 Pipe Hangers and Supports

(a) Pipe support shall be fabricated and installed per the drawings

(b) For Structural component welding, qualify all welding procedures and welding to AWS D.1

(c) All engineered pipe supports will be checked against the drawing by the Contractor for proper adjustment of travel and correctly positioned for the cold condition prior to startup.

3.7 HDPE Pipe Installation

(a) All HDPE piping shall be joined by butt fusion and in conformance with the manufacturer's recommendations. Laterals shall be joined to the header pipe by fusion welding saddles or tees. Electrofusion couplings may also be used.

(b) Fusion welding of HDPE pipe shall be performed by a certified operator. The pipe Contractor shall certify the operator. No pipe shall be installed prior to submittal of the verification.

(c) All pipes 2 inches and larger shall be welded with full penetration butt welds.

(d) Electro-fusion couplings may be used where butt welding is not practical.

3.8 Testing and Inspection

(a) The contractor shall pressure test double contained HDPE pipes at 10 PSIG for a minimum of 2 hours.

(b) The contractor shall test HDPE Air Piping at 120 PSIG for a minimum of 2 hours.

(c) The Contractor shall provide testing, inspection, retests, and repairs.

(d) Regulators, valves, pressure gauges, hoses, and other items that may be damaged by pressure testing shall be removed or disconnected from the pipes for the duration of the test.

****END OF SECTION 40 15 00****

BID PROPOSAL

City of La Habra
Civic Center
110 E. La Habra Blvd.
La Habra, California 90631

Dear Prospective Bidder:

The undersigned hereby proposes to perform all work for which a contract may be awarded him and to furnish any and all plant, labor, services, materials, tools, equipment, supplies, transportation, utilities, and all other items and facilities necessary therefor as provided in the Contract Documents, and to do everything required therein for the project specifically set forth in documents entitled:

"VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22"

together with appurtenances thereto, all as set forth on the drawing and in the specifications and other Contract Documents; and, he further proposes and agrees that if this Proposal is accepted he will contract in the form and manner stipulated to perform all the work called for by drawings, specifications and other Contract Documents and to complete all such work in strict conformity therewith within the time limits set forth therein, and that he will accept as full payment therefor the prices set forth in the Bid Schedule forming a part hereof.
A *(Cashier's Check) *(Certified Check) *(Bid Bond) properly made payable to City of La Habra hereinafter designated as the Owner for the sum of _____ _____dollars ($_____), which amount is not less than ten percent (10%) of the total amount of this bid, is attached hereto and is given as a guarantee that the undersigned will execute the Agreement and furnish the required bonds if awarded the Contract; and, in case of failure to do so within the time provided the proceeds of said check shall be forfeited to the *Owner/Sureties Liability to the Owner for forfeiture of the face amount of the Bond shall be considered as established.

(*) Delete inapplicable word or phrase.

It is understood and agreed that:

1. The undersigned has carefully examined all the Contract Documents which will form a part of the Contract;
2. The undersigned has, by investigation of the site of the work and otherwise, satisfied himself as to the nature and location of the work and has fully informed himself as to all conditions and matters which can in any way affect the work or the cost thereof;

3. The undersigned fully understands the scope of the work and has checked carefully all words and figures inserted in this proposal and he further understands that the Owner will in no way be responsible for any errors or omissions in the preparation of this proposal;
4. The undersigned will execute the Agreement and furnish the required Performance and Payment Bonds and proof of insurance coverage, within ten (10) days (not including Saturdays, Sundays and holidays) after notice to him of acceptance of his bid by the Owner; and further, that this bid may not be withdrawn for a period of sixty (60) days after the date set for the opening thereof, unless otherwise required by law. If any bidder shall withdraw his bid within said period, the Contractor shall be liable under the provisions of the Bid Security or the Contract and his surety shall be liable under the Bid Bond, as the case may be;
5. The undersigned hereby certifies that this proposal is genuine and not sham or collusive or made in the interest or in behalf of any person not herein named and the undersigned has not directly or indirectly induced or solicited any other bidder to put in a sham bid or any other person, firm or corporation to refrain from bidding; the undersigned has not in any manner sought by collusion to secure for himself an advantage over any other bidder;
6. In conformance with current statutory requirements of Section 1860, et seq., of the Labor Code of the State of California, the undersigned confirms the following as his certification:

> I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability of worker's compensation or to undertake self-insurance in accordance with the provisions before commencing the performance of the work of this contract.

NOW, in compliance with the Notice Inviting Bids and all the provisions hereinbefore stipulated, the undersigned, with full cognizance thereof, hereby proposes to perform the entire work for the prices set forth in the attached Bid Schedule upon which award of the Contract is made.

Date: _____, 2023 Bidder_____

By_____

Title_____

Bidder's Post Office Address:

_____

_____

Corporation organized under
the laws of the State of California

Names and addresses of all owners
of the firm or names and titles of
all officers of the corporation:

_____

_____

_____

_____

(corporate seal)

BIDDER'S INFORMATION

Contractor's License No. _____Expiration Date_____

Classification of Contractor's License No. _____

Contractor _____
(name of firm)

By _____ _____
(signature) (title)

Business Address: _____

_____

Phone (____) _____

I/We certify that the information provided above is complete and true to the best of my/our knowledge.

_____ _____
Contractor Date

Contractor's DIR Public Works Registration No. _____

BID SCHEDULE

VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22

ITEM No.	DESCRIPTION OF WORK	QTY	UNIT	UNIT PRICE	AMOUNT
1	Mobilization	1	LS		
2	General and Supplemental Conditions	1	LS		
3	Survey	1	LS		
4	Record Drawings	1	LS		
5	Clearing, Grubbing, Demolition and Removals	1	LS		
Civil Landfill Improvements					
6	Unclassified Excavation	1,407	CY		
7	Excavation to Unclassified Fill	17,495	CY		
8	Curb (A1-6) Per SPPWC Plan 120-3	3,025	LF		
9	Curb and Gutter (A2-6) Per SPPWC Plan 120-4	1,390	LF		
10	Longitudinal Gutter Per SPPWC Plan 122-3	1,155	LF		
11	Driveway Per SSPWC Plan 110-2	2	EA		
12	Curb Ramp (Type 3) Per SSPWC Plan 111-5 and 4/C-501	13	EA		
13	Curb Ramp (Type 4) Per SSPWC Plan 111-5 and 5/C-501	3	EA		
14	3-inch AC over 5.5-inch CAB & Structural Subgrade (Case 2) Per 8/C-501	9,650	SF		
15	3.5-inch AC over 9-inch CAB & Structural Subgrade (Case 1) Per 1/C-501	17,000	SF		
16	3-inch AC over 5.5-inch CAB & Structural Subgrade (Case 1) Per 1/C-501	5,600	SF		

17	3.5-inch AC over 9-inch CAB & Structural Subgrade (Case 2) Per 8/C-501	31,300	SF		
18	Striping, Pavement Markings, and Signage	1	LS		
19	Cross Gutter Per 1/C-502	1	LS		
20	Cross Gutter Per 3/C-502	1	LS		
21	Cross Gutter Per 5/C-502	1	LS		
22	4-inch Thick Concrete Sidewalk	20,170	SF		
23	Bioretention Basin A Per 1/C-503	1	EA		
24	Bioretention Basin B Per 1/C-503	1	EA		
25	Bioretention Basin C Per 1/C-503	1	EA		
26	Stairs and Walkway Per 1/C-505	21	LF		
27	6" to 0" Curb Transition	2	EA		
28	Settlement Monument Per 2/C-502	3	EA		
29	18" ID PVC Pipe Per 6/C-501	475	LF		
30	Cleanout Per 3/C-503	10	EA		
31	Overflow Structure Per 1/C-504	3	EA		
32	Parkway Drain Per SPPWC Plan 151-3 and Per 4/C-503	1	LS		
33	Manhole Per 4/C-505	1	EA		
34	2-Inch Schedule 40 PVC Water Line Per 6/C-501	1,935	LF		
35	Hose Bibb Per 7/C-501 (Case 1)	1	EA		
36	Hose Bibb Per 7/C-502 (Case 2)	4	EA		

37	6-Inch Sewer Lateral Per 3/C-504	62	LF		
38	Handrails Per 9/C-501	210	LF		
39	Building Protection System (Methane Protection Systems)	1	LS		
40	Hydroseed Native Mix Per Sheet C-100	90,600	SF		
Well Modifications					
41	Trenching in Soil	160	LF		
42	Trenching in Rock	40	LF		
43	3-Inch HDPE Pipe	200	LF		
44	Replacement Well	3	EA		
45	Tracer Wire	200	LF		
46	Concrete Vaults	9	EA		
Walking / Running Trail					
47	10'-0" Wide D.G. Trail	1,364	LF		
48	Headers-Aluminum	2,728	LF		
Sport Courts					
49	Volleyball Court w/ 30' X 60' Court w/ Sand, Posts and Net	1	LS		
50	Basketball Court w/ Pole, Backstop and Stripping (Assume Concrete)	1	LS		
Tot Lot Play Area					
51	Concrete Curb	361	LF		
52	Perimeter Fence - ClearVu Invisible Wall Fence, 4' High and Gate	361	LF		
53	Gametime Custom Playground Equipment (Labor and Materials)	1	LS		
Amphitheater					
54	Stage Area w/ Concrete, Including Walls, Complete	1,256	SF		

55	Electrical - Allowance (Assume POC is less than 400' away)	1	LS		
Community Art Wall					
56	Art Wall	1	LS		
Restroom/Storage Building					
57	Concrete Plaza Area	6,900	SF		
Trash Enclosure					
58	11' X 20' Building	1	LS		
59	Driveway	131	SF		
Picnic Area					
60	Table and Benches w/ Concrete Pads	16	EA		
61	BBQ'S	16	EA		
62	Trash Receptacles	26	EA		
63	Drinking Fountains	6	EA		
64	Bike Racks	4	EA		
Exercise Stations					
65	Exercise Equipment	10	EA		
66	D.G., Concrete Pads - 10' X 10' w/ Perimeter Curbs	10	EA		
Trees					
67	72" Box Tree	1	EA		
68	48" Box Tree w/ Root Barrier	9	EA		
69	24" Box Tree w/ Root Barrier	200	EA		
Planting and Irrigation					
70	Hydroseed - Turf Areas	169,947	SF		
71	Native Garden D.G. Walkways	1,010	SF		

72	California Native Plants	8,200	SF		
73	Metal Wood Plaques Signage With Plant Names	150	EA		
74	Mulch - 3"	104,800	SF		
75	Shrubs & Groundcover Areas	96,600	SF		
76	Slope Planting Under Existing Trees Including Mulch	134,000	SF		
77	Soil Amends	276,777	SF		
78	Mulch Around New Trees. Other Mulch Taken Above	115	EA		
79	Maintenance - 90 Days	1	LS		
80	Benches	8	EA		
81	Gazebo	1	LS		
82	Irrigation For Turf Areas	169,947	SF		
83	Irrigation For Native Garden Areas	8,200	SF		
84	Irrigation For Shrubs & Groundcover Areas	96,600	SF		
85	Irrigation Controller	1	EA		
86	Irrigation Backflow Preventer	1	EA		
Lighting and Security					
87	Safety/Security-Solar, LED	1	LS		
88	Gates-Rhino Gates-Metal Pipes-4' High X 30' Wide	2	EA		

TOTAL BID PRICE IN FIGURES: $_____

TOTAL BID PRICE IN WORDS:

_____

_____
CONTRACTOR

_____
BY

_____
TITLE

_____
DATE

ACKNOWLEDGEMENT OF ADDENDA RECEIVED

The Bidder shall acknowledge the receipt of addenda by placing an "X" by each addendum received.

Addendum No. 1 _____
Addendum No. 2 _____
Addendum No. 3 _____
Addendum No. 4 _____
Addendum No. 5 _____
Addendum No. 6 _____
Addendum No. 7 _____
Addendum No. 8 _____

If an addendum or addenda have been issued by the CITY and is not noted above as being received by the Bidder, the Bid Proposal may be rejected.

REFERENCES

[Work similar in scope magnitude and degree of difficulty completed by Contractor within the past three (3) years.]

1. Name (Firm/Agency): _____

   Address: _____

   Contact Person: _____Telephone No. _____

   Title of Project: _____

   Project Location: _____

   Date of Completion: _____Contract Amount: $ _____

2. Name (Firm/Agency): _____

   Address: _____

   Contact Person: _____Telephone No. _____

   Title of Project: _____

   Project Location: _____

   Date of Completion: _____Contract Amount: $ _____

3. Name (Firm/Agency): _____

   Address: _____

   Contact Person: _____Telephone No. _____

   Title of Project: _____

   Project Location: _____

   Date of Completion: _____Contract Amount: $ _____

4. Name (Firm/Agency): _____

   Address: _____

   Contact Person: _____Telephone No. _____

   Title of Project: _____

   Project Location: _____

   Date of Completion: _____Contract Amount: $ _____

If Contractor has not performed work for the City of La Habra within the last five (5) years, list all work done within said five years (attach additional sheets if necessary). Note if work was done as subcontractor (include only subcontract amount):

Work Description & Contract Amount	Agency	Date Completed

Contractor's License No.: _____ Class: _____

a. Date first obtained: _____ Expiration:

_____

b. Has License ever been suspended or revoked? _____

If yes, described when and why:

_____

c. Any current claims against License or Bond? _____

If yes, describe claims:

_____

Principals in Company (List all – attach additional sheets if necessary):

NAME	TITLE	LICENSE NO. (If Applicable)
_____	_____	_____
_____	_____	_____
_____	_____	_____

DBE BIDDER'S LIST

All bidders/proposers are requested to provide the following information for all DBE and non-DBE contractors or consultants who provided a proposal, bid, quote, or were contacted by the proposed prime. This information is also requested from the proposed prime contractor/ consultant and should be submitted with their bid/proposal. The City of La Habra will use this information to maintain and update a "Bidders" List to assist in the overall annual DBE goal-setting process.

Firm Name: _____ **Phone:** _____

Address: _____ **Fax:** _____

Contact Person: _____ **No. of years in business:** _____

Is the firm currently certified as a DBE under 49 CFR Part 26: YES: ___ NO: ___

Type of work/services/materials provided by firm? _____

_____

What was your firm's Gross Annual receipts for last year?

Less than $1 Million
Less than $5 Million
Less than $10 Million
Less than $15 Million
More than $15 Million

This form can be duplicated if necessary to report all bidders (DBEs and non-DBEs) information.

VIOLATIONS OF FEDERAL, STATE, OR LOCAL LAWS

1. Has your firm or its officers been assessed any penalties by an agency for noncompliance or violations of Federal, State, or Local labor laws and/or business or licensing regulations within the past five (5) years relating to your construction projects?

Yes/No: _____ Federal/State: _____

If "yes", identify and describe, (including agency and status):

_____

_____

_____

_____

_____

_____

_____

Have the penalties been paid? Yes/No:

_____

2. Does your firm or its officers have any ongoing investigations by any public agency regarding violations of the State Labor Code, California Business and Professions Code or State Licensing Laws?

Yes/No: _____ Code/Laws: _____ Section/Article: _____

If "yes", identify and describe, (including agency and status):

_____

_____

_____

_____

_____

_____

DISQUALIFICATION OR DEBARMENT

Has your firm, any officer of your firm, or any employee who has a proprietary interest in your firm ever been disqualified, removed, or otherwise prevented from bidding on, performing work on, or completing a federal, state, or local project because of a violation of law or a safety regulation?

Yes/No: _____

If yes, provide the following information (if more than once, use separate sheets):

Date: _____ Entity: _____

Location: _____

Reason: _____

_____

_____

_____

Provide Status and any Supplemental Statement:

_____

_____

_____

_____

Has your firm been reinstated by this entity?

Yes/No: _____

DEBARMENT AND SUSPENSION CERTIFICATION

TITLE 49, CODE OF FEDERAL REGULATIONS, PART 29

The bidder, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, manager:

- is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency;
- has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal agency within the past 3 years;
- does not have a proposed debarment pending; and
- has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions. The above certification is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Certification.

LIST OF SUBCONTRACTORS

VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22

The bidder shall list below the name and the location of the place of business of each Subcontractor who will perform work or render services to the prime contractor in or about the construction of the work or improvement in excess of one-half of one percent (1/2%) of the prime contractor's total bid or ten thousand dollars ($10,000.00) whichever is greater in accordance with the requirements of Section 4100 to 4133 inclusive of the public contracts code.

Work to be Performed	License & DIR No.	Subcontractor and Address of Office, Mill or Shop	% of Total Contract

Note: Do not list alternative subcontractors for the same work.

Contractor _____

BID SECURITY FORM

(Check to Accompany Bid)

(Note: The following form shall be used in case check accompanies bid.)

Accompanying this proposal is a *(Certified) *(Cashiers) check payable to the order of the City of La Habra, California, hereinafter referred to as "Owner", for

VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22

In the amount of $_____ Dollars,
this amount being ten percent (10%) of the total amount of the bid. The proceeds of this check shall become the property of said Owner provided this proposal shall be accepted by the said Owner through action if its legally constituted contracting authorities and the undersigned shall fail to execute a contract and furnish the required Performance and Payment Bonds and proof of insurance coverage within the stipulated time; otherwise, the check shall be returned to the undersigned. The proceeds of this check shall also become the property of the Owner if the undersigned shall withdraw his bid within the period of forty-five (45) days after the date set for the opening thereof unless otherwise required by law and notwithstanding the award of the Contract to another bidder.

_____

_____
Bidder

*Delete the inapplicable word.

NOTE: If the bidder desires to use a bond instead of a check, the Bid Bond form on the following pages shall be executed. The sum of this bond shall be not less than ten percent (10%) of the total amount of the bid.

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That we_____as principal and _____ as surety, are held and firmly bound unto the City of La Habra, California hereinafter referred to as "Owner", in the sum of _____ Dollars ($_____) to be paid to the said Owner, its successors and assigns for which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the certain proposal of the above bounden for the construction of Park Improvements as specifically set forth in documents entitled:

VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22

all in accordance with the specifications and drawings on file at the offices of the City Clerk of the City of La Habra, California and is not withdrawn within the period of sixty (60) days after the date set for the opening of bids unless otherwise required by law and notwithstanding the award of the Contract to another bidder and that if said proposal is accepted by the Owner through action of its legally constituted contracting authorities and if the above bounden his heirs, executors, administrators, successors and assigns shall duly enter into and execute a contract for such construction and shall execute and deliver the required Performance and Payment Bonds and proof of insurance coverage within ten (10) days (not including Saturdays, Sundays and Holidays) after the date of notification by and from the said Owner that the said contract is ready for execution, then this obligation shall become null and void; otherwise, it shall be and remain in full force and virtue.

IN WITNESS WHEREOF, we hereunto set hands and seal this _____

day of _____, 2023.

_____

_____

_____

BIDDER

NOTE: The standard printed bond form of any bonding company acceptable to the Owner may be used in lieu of the foregoing approved sample bond form provided the security stipulations protecting the Owner are not in any way reduced by use of the Surety Company's printed standard form.

NON-COLLUSION AFFIDAVIT

FOR

VISTA GRANDE PARK IMPROVEMENTS, CITY PROJECT NO. 2-P-22

(TO BE EXECUTED BY EACH AWARDEE OF A PRINCIPAL CONTRACT)

STATE OF CALIFORNIA)
) SS.
)

_____, being first duly sworn,

deposes and says that he is _____
(sole owner, partner, president, secretary, etc.)

of _____

The party making the foregoing bid; that such bid is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization or corporation; that such bid is genuine and not collusive or sham: that said bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, nor that anyone shall refrain from bidding; that said bidder has not in any manner directly or indirectly sought by agreement, communication or conference with anyone to fix the bid price of said bidder or of any other bidder, nor to fix any overhead, profit cost element of such bid price nor of that of any other bidder nor to secure any advantage against the public body awarding the contract or anyone interested in the proposed contract; that all statements contained in such bid are true; and, further, that said bidder has not directly or indirectly, submitted his bid price or any breakdown thereof, nor the contents thereof, nor divulged information or data relative thereto, nor paid and will not pay any fee in connection therewith to any corporation, partnership, company, association, organization, bid depository, nor to any member of agent thereof nor to any other individual except to such person or persons as have a partnership or other financial interest with said bidder in his general business.

Signed: _____

Title: _____

Subscribed and sworn to before me

This _____day of_____, 2023.

_____

SEAL OF NOTARY PUBLIC

WORKER'S COMPENSATION CERTIFICATE

(AS REQUIRED BY SECTION 1861
OF THE CALIFORNIA LABOR CODE)

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

Contractor _____

By_____

Title _____

Public Contract Code Section 10285.1 Statement

In conformance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder **has ___, has not ___** been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Note: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Public Contract Code Section 10162 Questionnaire

In conformance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes _____ No _____

If the answer is yes, explain the circumstances in the following space.

Public Contract Code Section 10232 Statement

In conformance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

Note: The above Statement and Questionnaire are part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Statement and Questionnaire.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

CITY OF LA HABRA
PUBLIC WORKS AGREEMENT FOR
VISTA GRANDE PARK IMPROVEMENT PROJECT NO. 2-P-22

THIS AGREEMENT (herein "Agreement"), is made and entered into this ___ day of _____, 2023 and between the **CITY OF LA HABRA**, a municipal corporation (herein "City") and **_____.** (herein "Contractor"). The parties hereto agree as follows:

W I T N E S E T H :

A. WHEREAS, City requires the construction of _____improvements as set forth more fully in this Agreement.

B. WHEREAS, Contractor represents to City that Contractor is qualified to perform said work and has submitted a proposal to City for the same.

C. WHEREAS, City desires to have Contractor perform said services on the terms and conditions set forth herein.

D. WHEREAS, no official or employee of City has a financial interest, within the provisions of Sections 1090-1092 of the California Government Code, in the subject matter of this Agreement.

NOW, THEREFORE, for and in consideration of the mutual covenants and conditions contained herein and for good and valuable consideration, the receipt and sufficiency of which is acknowledged by both parties, City and Contractor hereby agree as follows:

1.0 DEFINITIONS

1.1 Definitions. As used in this Agreement, the following definitions shall be applicable:

(a) Contractor. Contractor shall mean _____., a California corporation located at _____.

(b) City. City shall mean the City of La Habra, a Municipal Corporation and General Law City, located at 110 E. La Habra Blvd, La Habra, California 90631.

(c) City Council. City Council shall mean the City Council of the City of La Habra.

(d) Contract Officer shall mean the person designated by the City Administrator or City Engineer of City and shall have the duties set forth in Section 5.2.

(e) Services. Services shall mean the services to be performed by the Contractor pursuant to this Agreement.

(f) Satisfactory. Satisfactory shall mean satisfactory to the City Administrator or his/her designee.

2.0 SERVICES OF CONTRACTOR

2.1 Scope of Services. In compliance with all terms and conditions of this Agreement, the Contractor shall provide those services specified in the Contract Specifications and Project Plans attached hereto as Exhibit "A" and incorporated herein by this reference, which services may be referred to herein as the "services" or "work" hereunder. As a material inducement to the City entering into this Agreement, Contractor represents and warrants that Contractor is a provider of first class work and services and Contractor is experienced in performing the work and services contemplated herein and, in light of such status and experience, Contractor covenants that it shall follow the highest professional standards in performing the work and services required hereunder and that all materials will be of good quality, fit for the purpose intended.

2.2 Documents Included in Contract. This contract consists of this Agreement and any Exhibits, which are incorporated herein by this reference. In the event of an inconsistency, the terms of this Agreement shall govern.

2.3 Compliance with Law. All services rendered hereunder shall be provided in accordance with all ordinances, resolutions, statutes, rules, and regulations of the City and any Federal, State or local governmental agency having jurisdiction in effect at the time service is rendered, including but not limited to, the claims procedure set forth in Public Contract Code Section 9204, a summary of which is attached to this agreement as Exhibit "D."

2.4 Licenses, Permits, Fees and Assessments. Contractor shall obtain at its sole cost and expense such licenses, permits and approvals as may be required by law for the performance of the services required by this Agreement, including registration with the Department of Industrial Relations of the State of California as required by Labor Code Section 1725.5 before commencing performance under this Agreement. Contractor shall have the sole obligation to pay for any fees, assessments and taxes, plus applicable penalties and interest, which may be imposed by law and arise from or are necessary for the Contractor's performance of the services required by this Agreement, and shall indemnify, defend and hold harmless City against any such fees, assessments, taxes penalties or interest levied, assessed or imposed against City hereunder. Contractor shall be responsible for all subcontractors' compliance with this Section 2.4.

2.5 Familiarity with Work. By executing this Contract, Contractor warrants that Contractor (a) has thoroughly investigated and considered the scope of services to be performed, (b) has carefully considered how the services should be performed, and (c) fully understands the facilities, difficulties and restrictions attending performance of the services under this Agreement. If the services involve work upon any site, Contractor warrants that Contractor has or will investigate the site and is or will be fully acquainted with the conditions there existing, prior to commencement of services hereunder. Should Contractor discover any latent or unknown conditions, which will materially affect the performance of the services hereunder, Contractor shall immediately inform the City of such fact and shall not proceed except at Contractor's risk until written instructions are received from the Contract Officer.

2.6 Standard of Performance. Contractor, its subcontractors and their employees, in the performance of Contractor's work under this Agreement shall be responsible for exercising the degree of skill and care required by customarily accepted good professional practices and procedures used in the Contractor's field.

Any costs for failure to meet the foregoing standard or to correct otherwise defective work that requires re-performance of the work, shall be borne in total by the Contractor and not by the City. The failure of a project to achieve the performance goals and objectives stated in this Agreement is not a basis for requesting re-performance unless the work conducted by Contractor and/or its subcontractors is deemed by the City to have failed the foregoing standard of performance.

In the event Contractor fails to perform in accordance with the above standard:

1. Contractor will re-perform, at its own expense, any task which was not performed to the reasonable satisfaction of City. Any work re-performed pursuant to this paragraph shall be completed within the time limitations originally set forth for the specific task involved. Contractor shall work any overtime required to meet the deadline for the task at no additional cost to the City;

2. The City shall provide a new schedule for the re-performance of any task pursuant to this paragraph in the event that re-performance of a task within the original time limitations is not feasible; and

3. The City shall have the option to direct Contractor not to re-perform any task which was not performed to the reasonable satisfaction of the City Project Manager pursuant to application of (1) and (2) above. In the event the City directs Contractor not to re-perform a task, the City shall negotiate a reasonable settlement for satisfactory work performed. No previous payment shall be considered a waiver of the City's right to reimbursement.

Nothing contained in this section is intended to limit any of the rights or remedies which the City may have under law.

2.7 Care of Work. The Contractor shall adopt reasonable methods during the life of the Agreement to furnish continuous protection to the work, and the equipment, materials, papers, documents, plans, studies and/or other components thereof to prevent losses or damages, and shall be responsible for all such damages, to persons or property, until acceptance of the work by City, except such losses or damages as may be caused by City's own negligence.

2.8 Further Responsibilities of Parties. Both parties agree to use reasonable care and diligence to perform their respective obligations under this Agreement. Both parties agree to act in good faith to execute all instruments, prepare all documents and take all actions as may be reasonably necessary to carry out the purposes of this Agreement. Unless hereafter specified, neither party shall be responsible for the service of the other. Contractor shall require all subcontractors to comply with the provisions of this agreement.

2.9 Additional Services. City shall have the right at any time during the performance of the services, without invalidating this Agreement, to order extra work beyond that specified in the Scope of Services or make changes by altering, adding to or deducting from said work. No such extra work may be undertaken unless a written change order is first given by the Contract Officer to the Contractor, incorporating therein any adjustment in (i) the Contract Sum as set forth in Section 3.1, and/or (ii) the time to perform this Agreement, which said adjustments are subject to the written approval of the Contractor. Any increase in compensation of twenty five percent (25%) or less of the Contract Sum, or in the time to perform of one hundred eighty (180) days or less may be approved by the Contract Officer. Any increases, taken either separately or cumulatively, that result in the Contract Sum exceeding $25,000 must be approved by the City Council. It is expressly understood by Contractor that the provisions of this Section shall not

apply to services specifically set forth in the Scope of Services or reasonably contemplated therein. Contractor hereby acknowledges that it accepts the risk that the services to be provided pursuant to the Scope of Services may be more costly or time consuming than Contractor anticipates and that Contractor shall not be entitled to additional compensation therefore.

2.10 Prevailing Wage Laws. Contractor represents and warrants that it is registered with the Department of Industrial Relations pursuant to SB 854 and Labor Code 1725.5. Contractor shall ensure that its subcontractors comply with said requirements. In accordance with Labor Code Section 1770 et seq., the Director of the Department of Industrial Relations of the State of California has ascertained a general prevailing rate of wages, which is the minimum amount, which shall be paid to all workers employed to perform the work pursuant to this Agreement. A copy of the general prevailing wage rate determination is on file in the Office of the City Clerk and is hereby incorporated by reference into this Agreement. In accordance with the provisions of Labor Code Section 1810 et seq., eight (8) hours is the legal working day. Contractor must forfeit to the City Twenty Five Dollars ($25.00) a day for each worker who works in excess of the minimum working hours when Contractor does not pay overtime. Contractor is required to post a copy of such wage rates at all times at the contract site. The statutory penalties for failure to pay prevailing wage or to comply with State wage and hour laws will be enforced. Contractor also shall comply with State law requirements to maintain payroll records and shall provide for certified records and inspection of records as required by California Labor Code Section 1770 et. seq., including Section 1776. Contractor shall comply with all statutory requirements relating to the employment of apprentices.

3.0 COMPENSATION

3.1 Contract Sum. For the services rendered pursuant to this Agreement, the Contractor shall be compensated as specified herein, but not exceeding the maximum contract amount of _____ Dollars ($_____) (herein "Contract Sum"), except as provided in Section 2.9. The Contract Sum shall include the attendance of Contractor at all project meetings reasonably deemed necessary by the City; Contractor shall not be entitled to any additional compensation for attending said meetings.

3.2 Progress Payments. Prior to the first day of the month, during the progress of the work, commencing on the day and month specified in the Agreement, Contractor shall submit to the Contract Officer a complete itemized statement of all labor and materials incorporated into the work during the preceding month and the portion of the contract sum applicable thereto. Upon approval in writing by the Contract Officer, payment shall be made in thirty (30) days. City shall pay Contractor a sum based upon ninety-five percent (95%) of the contract price apportionment of the labor and materials incorporated into the work under the contract during the month covered by said statement. The remaining five percent (5%) thereof shall be retained as performance security. Refer to Section 8.4 of this Agreement for retention of funds.

4.0 PERFORMANCE SCHEDULE

4.1 Time of Essence. Time is of the essence in the performance of this Agreement.

4.2 Schedule of Performance. Contractor shall commence the services pursuant to this Agreement upon receipt of a written notice to proceed and shall perform all services within the time period(s) established in Exhibit "A", and incorporated herein by this reference. When requested by the Contractor, extensions to the time period(s) specified in the Scope of Services may be approved in writing by the Contract Officer.

4.3 Force Majeure. The time period(s) specified in the Scope of Services for performance of the services rendered pursuant to this Agreement shall be extended because of any delays due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God or of the public enemy, unusually severe weather, fires, earthquakes, floods, epidemics, quarantine restrictions, riots, strikes, freight embargoes, wars, litigation, and/or acts of any governmental agency, including the City, if the Contractor shall within ten (10) days of the commencement of such delay notify the Contract Officer in writing of the causes for the delay. The Contract Officer shall ascertain the facts and the extent of delay, and extend the time for performing the services for the period of the enforced delay when and if in the judgment of the Contract Officer such delay is justified. The Contract Officer's determination shall be final and conclusive upon the parties to this Agreement.

4.4 Term. Unless earlier terminated in accordance with Section 8.9 of this Agreement, this Agreement shall continue in full force and effect until final approval and acceptance of the project by the Contract Officer. Notwithstanding the foregoing, this Agreement shall terminate no later than _____, 20__, unless the parties mutually agree in writing to extend the term.

5.0 COORDINATION OF WORK

5.1 Representative of Contractor. The following principals of Contractor are hereby designated as being the principals and representatives of Contractor authorized to act in its behalf with respect to the work specified herein and make all decisions in connection therewith:

_____
_____
_____

It is expressly understood that the experience, knowledge, capability and reputation of the foregoing principals were a substantial inducement for City to enter into this Agreement. Therefore, the foregoing principals shall be responsible during the term of this Agreement for directing all activities of Contractor and devoting sufficient time to personally supervise the services hereunder. For purposes of this Agreement, the foregoing principals may not be replaced nor may their responsibilities be substantially reduced by Contractor without the express written approval of City.

5.2 Contract Officer. The Contract Officer shall be such person as may be designated by the City Administrator or City Engineer of City. It shall be the Contractor's responsibility to assure that the Contract Officer is kept informed of the progress of the performance of the services and the Contractor shall refer any decisions that must be made by City to the Contract Officer. Unless otherwise specified herein, any approval of City required hereunder shall mean the approval of the Contract Officer. The Contract Officer shall have authority to sign all documents on behalf of the City required hereunder to carry out the terms of this Agreement.

5.3 Prohibition Against Assignment. The experience, knowledge, capability and reputation of Contractor, its principals and employees were a substantial inducement for the City to enter into this Agreement. Neither this Agreement nor any interest herein may be transferred, assigned, conveyed, hypothecated or encumbered voluntarily or by operation of law, whether for the benefit of creditors or otherwise, without the prior written approval of City. Transfers restricted hereunder shall include the transfer to any person or group of persons acting in concert of more than twenty five percent

(25%) of the present ownership and/or control of Contractor, taking all transfers into account on a cumulative basis. In the event of any such unapproved transfer, including any bankruptcy proceeding, this Agreement shall be void. No approved transfer shall release the Contractor or any surety of Contractor of any liability hereunder without the express consent of City.

5.4 Independent Contractor. Neither the City nor any of its employees shall have any control over the manner, mode or means by which Contractor, its subcontractors, agents or employees, performs the services required herein, except as otherwise set forth herein. City shall have no voice in the selection, discharge, supervision or control of Contractor's employees, subcontractors, servants, representatives or agents, or in fixing their number, compensation or hours of service. Contractor shall perform all services required herein as an independent contractor of City and shall remain at all times as to City a wholly independent contractor with only such obligations as are consistent with that role. Contractor shall not at any time or in any manner represent that it or any of its subcontractors, agents or employees are agents or employees of City. City shall not in any way or for any purpose become or be deemed to be a partner of Contractor in its business or otherwise or a joint venture or a member of any joint enterprise with Contractor.

5.5 Identity of Persons Performing Work. Contractor represents that it employs or will employ at its own expense all personnel required for the satisfactory performance of any and all tasks and services set forth herein. Contractor represents that the tasks and services required herein will be performed by Contractor or under its direct supervision, and that all personnel engaged in such work shall be fully qualified and shall be authorized and permitted under applicable State and local law to perform such tasks and services.

5.6 Utility Relocation. City is responsible for removal, relocation, or protection of existing main or trunkline utilities to the extent such utilities were not identified in the invitation for bids or specifications. City shall reimburse contractor for any costs incurred in locating, repairing damage not caused by contractor and removing or relocating such unidentified utility facilities, including equipment idled during such work. Contractor shall not be assessed liquidated damages for delay arising from the removal or relocation of such unidentified utility facilities.

5.7 Trenches or Excavations. Pursuant to California Public Contract Code Section 7104, in the event the work included in this Agreement requires excavations more than four (4) feet in depth, the following shall apply.

(a) Contractor shall promptly, and before the following conditions are disturbed, notify City, in writing, of any: (1) material that Contractor believes may be material that is 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 provisions of existing law; (2) Subsurface or latent physical conditions at the site different from those indicated; or (3) Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.

(b) City shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do 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 shall issue a change order per Section 2.9 of this Agreement.

(c) That, in the event that a dispute arises between City and Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in Contractor's cost of, or time required for, performance of any part of the work, Contractor shall not be excused from any scheduled completion date provided for by the contract, but shall proceed with all work to be performed under the contract. Contractor shall retain any and all rights provided either by contract or by law, which pertain to the resolution of disputes and protests between the contracting parties.

6.0 INSURANCE, INDEMNIFICATION AND BONDS

6.1 Insurance. The Contractor and all subcontractors, if any, shall procure and maintain, at its sole cost and expense, in a form and content satisfactory to City, during the entire term of this Agreement including any extension thereof, insurance as set forth in Exhibit "B" attached hereto and incorporated herein by this reference.

Conditions:
In accordance with Public Contract Code Section 20170, the insurance of surety companies who provide or issue the policy shall have been admitted to do business in the State of California with a credit rating of A- or better.

This insurance shall not be canceled, limited in scope or coverage or non-renewed until after thirty (30) days prior written notice has been given to the Public Works Director, City of La Habra, 110 E. La Habra Blvd., La Habra, California 90631.

Any insurance maintained by the City of La Habra shall apply in excess of and not combined with insurance provided by this policy.

The City of La Habra, its officers, employees, representatives, attorneys, and volunteers shall be named as additional named insureds.

Prior to commencement of any work under this contract, Contractor shall deliver to the City insurance endorsements confirming the existence of the insurance required by this contract, and including the applicable clauses referenced above.

Such endorsements shall be signed by an authorized representative of the insurance company and shall include the signator's company affiliation and title. Should it be deemed necessary by the City, it shall be Contractor's responsibility to see that the City receives documentation, acceptable to the City, which sustains that the individual signing said endorsements is indeed authorized to do so by the insurance company.

If the Contractor fails to maintain the aforementioned insurance, or secure and maintain the aforementioned endorsement, the City may obtain such insurance, and deduct and retain the amount of the premiums for such insurance from any sums due under the agreement. However, procuring of said insurance by the City is an alternative to other remedies the City may have, and is not the exclusive remedy for failure of Contractor to maintain said insurance or secure said endorsement. In addition to any other remedies the City may have upon Contractor's failure to provide and maintain any insurance or policy endorsements to the extent and within the time herein required, the City shall have the right to order Contractor to stop work hereunder, and/or

withhold any payment(s) which became due to Contractor hereunder until Contractor demonstrates compliance with the requirements hereof.

Nothing herein contained shall be construed as limiting in any way the extent to which Contractor may be held responsible for payments of damages to persons or property resulting from Contractor's or its subcontractor's performance of the work covered under this agreement.

Each contract between the Contractor and any subcontractor shall require the subcontractor to maintain the same policies of insurance that the Contractor is required to maintain pursuant to this Section 6.1.

6.2 Certificates of Insurance. Contractor shall provide to City certificates of insurance showing the insurance coverages and required endorsements described above, in a form and content approved by City, prior to performing any services under this Agreement. The certificates of insurance and endorsements shall be attached to this Agreement as Exhibit "C", and are incorporated herein by this reference.

6.3 Indemnification. Contractor shall defend, indemnify, hold free and harmless the City of La Habra, its elected and appointed officials, officers, agents and employees, at Contractor's sole expense, from and against any and all actions, suits, claims, damages to persons or property, losses, costs, penalties, obligations, errors, omissions or liabilities, (herein "claims or liabilities") that may be asserted or claimed by any person, firm or entity arising or alleged to arise out of or in connection with the performance of the work, operations or activities of Contractor, its agents, employees, subcontractors, or invitees, provided for herein, or arising or alleged to arise from the negligent acts or omissions of Contractor hereunder, or arising or alleged to arise from Contractor's performance of or failure to perform any term, provision, covenant or condition of this Agreement.

(a) Contractor will defend any action or actions filed in connection with any of said claims or liabilities and will pay all costs and expenses, including legal costs and attorneys' fees incurred in connection therewith.

(b) Contractor will promptly pay any judgment rendered against the City, its officers, agents or employees for any such claims or liabilities arising or alleged to arise out of or in connection with Contractor's (or its agents', employees', subcontractors' or invitees') negligent performance of or failure to perform such work, operations or activities hereunder; and Contractor agrees to save and hold the City, its officers, agents, and employees harmless therefrom.

(c) In the event the City, its officers, agents or employees is made a party to any action or proceeding filed or prosecuted against Contractor for such damages or other claims arising or alleged to arise out of or in connection with the performance of or failure to perform the work, operation or activities of Contractor hereunder, Contractor shall pay to the City, its officers, agents or employees, any and all costs and expenses incurred by the City, its officers, agents or employees in such action or proceeding, including but not limited to, legal costs and attorneys' fees for counsel selected by City.

(d) Contractor's duty to defend and indemnify as set out in this Section 6.3 shall include any claims, liabilities, obligations, losses, demands, actions, penalties, suits, costs, expenses or damages or injury to persons or property arising or alleged to arise from, in connection with, as a consequence of or pursuant to any state or federal law or regulation regarding

hazardous substances, including but not limited to the Federal Insecticide, Fungicide and Rodenticide Act ("FIFRA"), Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"), Resource Conservation and Recovery Act of 1976 ("RCRA"), the Hazardous and Solid Waste Amendments of 1984, the Hazardous Material Transportation Act, the Toxic Substances control Act, the Clean Air Act, the Clean Water Act, the California Hazardous Substance Account Act, the California Hazardous Waste Control Law or the Porter-Cologne Water Quality Control Act, as any of those statutes may be amended from time to time.

Notwithstanding the foregoing, Contractor shall not be liable for the defense or indemnification of the City for claims, actions, complaints or suits arising out of the sole active negligence or willful misconduct of the City.

The Contractor's indemnification obligations pursuant to this Section 6.3 shall survive the termination of this Agreement. Contractor shall require the same indemnification from all subcontractors.

6.4 Labor and Materials and Performance Bonds. Concurrently with execution of this Agreement, Contractor shall deliver to City a labor and materials bond and a performance bond each in the sum of the amount of this Agreement, in the forms provided by the City Clerk, which secures the faithful performance of this Agreement. The bonds shall contain the original notarized signature of an authorized officer of the surety and affixed thereto shall be a certified and current copy of his power of attorney. The bonds shall be unconditional and remain in force during the entire term of the Agreement and shall be null and void only if the Contractor promptly and faithfully performs all terms and conditions of this Agreement.

6.5 Sufficiency of Insurer or Surety. Insurance required by this Agreement shall be satisfactory only if issued by companies qualified to do business in California, rated "A" or better in the most recent edition of Best Rating Guide, The Key Rating Guide or in the Federal Register, and only if they are of a financial category Class VII or better, unless such requirements are waived by the Risk Manager of the City due to unique circumstances. In the event the Senior Management Analyst of City ("Senior Management Analyst") determines that the work or services to be performed under this Agreement creates an increased risk of loss to the City, the Contractor agrees that the minimum limits of the insurance policies required by this Section 6 may be changed accordingly upon receipt of written notice from the Senior Management Analyst; provided that the Contractor shall have the right to appeal a determination of increased coverage by the Senior Management Analyst to the City Council of City within ten (10) days of receipt of notice from the Senior Management Analyst.

6.6 Substitution of Securities. Pursuant to California Public Contract Code Section 22300, substitution of eligible equivalent securities for any monies withheld to ensure performance under the contract for the work to be performed will be permitted at the request and expense of the successful bidder.

7.0 RECORDS AND REPORTS

7.1 Reports. Contractor shall periodically prepare and submit to the Contract Officer such reports concerning the performance of the services required by this Agreement as the Contract Officer shall require. Contractor hereby acknowledges that the City is greatly concerned about the cost of work and services to be performed pursuant to this Agreement. For this reason, Contractor agrees that if Contractor becomes aware of any facts, circumstances, techniques, or events that may or will materially increase or decrease the cost of the work or services contemplated herein or, if Contractor is providing design services, the cost of the project being designed, Contractor shall promptly notify the

Contract Officer of said fact, circumstance, technique or event and the estimated increased or decreased cost related thereto and, if Contractor is providing design services, the estimated increased or decreased cost estimate for the project being designed.

7.2 Records. Contractor shall keep, and require subcontractors to keep, such books and records (including but not limited to payroll records as required herein) as shall be necessary to perform the services required by this Agreement and enable the Contract Officer to evaluate the performance of such services. The Contract Officer shall have full and free access to such books and records at all times during normal business hours of City, including the right to inspect, copy, audit and make records and transcripts from such records. Such records shall be maintained for a period of three (3) years following completion of the services hereunder, and the City shall have access to such records in the event any audit is required.

7.3 Ownership of Documents. All drawings, specifications, reports, records, documents and other materials prepared by Contractor, its employees, subcontractors and agents in the performance of this Agreement shall be the property of City and shall be delivered to City upon request of the Contract Officer or upon the termination of this Agreement, and Contractor shall have no claim for further employment or additional compensation as a result of the exercise by City of its full rights of ownership of the documents and materials hereunder. Contractor may retain copies of such documents for its own use. Contractor shall have an unrestricted right to use the concepts embodied therein. All subcontractors shall provide for assignment to City of any documents or materials prepared by them, and in the event Contractor fails to secure such assignment, Contractor shall indemnify City for all damages resulting therefrom.

7.4 Public Records Act Disclosure. Contractor has been advised and is aware that this Agreement and all reports, documents, information and data, including, but not limited to, computer tapes, discs or files furnished or prepared by Contractor, or any of its subcontractors, pursuant to this Agreement and provided to City may be subject to public disclosure as required by the California Public Records Act (California Government Code Section 6250 *et seq*.). Exceptions to public disclosure may be those documents or information that qualify as trade secrets, as that term is defined in the California Government Code Section 6254.7, and of which Contractor informs City of such trade secret. The City will endeavor to maintain as confidential all information obtained by it that is designated as a trade secret. The City shall not, in any way, be liable or responsible for the disclosure of any trade secret including, without limitation, those records so marked if disclosure is deemed to be required by law or by order of the Court.

8.0 GENERAL PROVISIONS

8.1 Governing Law. This Agreement shall be construed and interpreted both as to validity and to performance of the parties in accordance with the laws of the State of California. Legal actions concerning any dispute, claim or matter arising out of or in relation to this Agreement shall be instituted in the Superior Court of the County of Orange, State of California, or any other appropriate court in such county, and Contractor covenants and agrees to submit to the personal jurisdiction of such court in the event of such action.

8.2 Representatives. The City Administrator or his or her designee shall be the representative of City for purposes of this Agreement and may issue all consents, approvals, directives and agreements on behalf of the City, called for by this Agreement, except as otherwise expressly provided in this Agreement.

The Principal set forth in Section 5.1 above shall be the representative for Contractor for purposes of this Agreement, and shall be authorized to issue all consents, approvals, directives and agreements on behalf of Contractor called for by this Agreement, except as otherwise expressly provided in this Agreement.

8.3 Disputes. In the event either party fails to perform its obligations hereunder, the nondefaulting party shall provide the defaulting party written notice of such default. The defaulting party shall have ten (10) days to cure the default; provided that, if the default is not reasonably susceptible to being cured within said ten (10) day period, the defaulting party shall have a reasonable time to cure the default, not to exceed a maximum of thirty (30) days, so long as the defaulting party commences to cure such default within ten (10) days of service of such notice and diligently prosecutes the cure to completion; provided further that if the default is an immediate danger to the health, safety and general welfare, the defaulting party shall take such immediate action as may be necessary. Notwithstanding the foregoing, the nondefaulting party may, in its sole and absolute discretion, grant a longer cure period. Should the defaulting party fail to cure the default within the time period provided in this Section, the nondefaulting party shall have the right, in addition to any other rights the nondefaulting party may have at law or in equity, to terminate this Agreement. Compliance with the provisions of this Section 8.3 shall be a condition precedent to bringing any legal action, and such compliance shall not be a waiver of any party's right to take legal action in the event that the dispute is not cured.

8.4 Retention of Funds. Progress payments shall be made in accordance with the provisions of Section 3.2 of this Agreement. In accordance with said section, City shall pay Contractor a sum based upon ninety-five percent (95%) of the contract price apportionment of the labor and materials incorporated into the work under the contract during the month covered by said statement. The remaining five percent (5%) thereof shall be retained as performance security to be paid to the Contractor within sixty (60) days after final acceptance of the work by the City Council, after Contractor shall have furnished City with a release of all undisputed contract amounts if required by City. In the event there are any claims specifically excluded by Contractor from the operation of the release, the City may retain proceeds (per Public Contract Code 7107) of up to 150% of the amount in dispute. City’s failure to deduct or withhold shall not affect Contractor’s obligations hereunder.

8.5 Waiver. No delay or omission in the exercise of any right or remedy by a nondefaulting party on any default shall impair such right or remedy or be construed as a waiver. A party's consent to or approval of any act by the other party requiring the party's consent or approval shall not be deemed to waive or render unnecessary the other party's consent to or approval of any subsequent act. Any waiver by either party of any default must be in writing and shall not be a waiver of any other default concerning the same or any other provision of this Agreement.

8.6 Rights and Remedies. Rights and Remedies are cumulative except with respect to rights and remedies expressly declared to be exclusive in this Agreement, the rights and remedies of the parties are cumulative and the exercise by either party of one or more of such rights or remedies shall not preclude the exercise by it, at the same or different times, of any other rights or remedies for the same default or any other default by the other party.

8.7 Legal Action. In addition to any other rights or remedies, either party may take legal action, in law or in equity, to cure, correct or remedy any default, to recover damages for any default, to compel specific performance of this Agreement, to obtain declaratory or injunctive relief, or to obtain any other remedy consistent with the purposes of this Agreement.

8.8 Liquidated Damages. Since the determination of actual damages for any delay in performance of this Agreement would be extremely difficult or impractical to determine in the event of a breach of this Agreement, the Contractor and its sureties shall be liable for and shall pay to the City _____ Dollars ($_____.00) as liquidated damages for each working day of delay in the performance of any service required hereunder, as specified in the Scope of Services (Exhibit A). The City may withhold from any monies payable on account of services performed by the Contractor any accrued liquidated damages.

8.9 Termination for Default of Contractor. If termination is due to the failure of the Contractor to fulfill its obligations under this Agreement, Contractor shall vacate any City owned property which Contractor is permitted to occupy hereunder and City may, after compliance with the provisions of Section 8.3, take over the work and prosecute the same to completion by contract or otherwise, and the Contractor shall be liable to the extent that the total cost for completion of the services required hereunder exceeds the compensation herein stipulated (provided that the City shall use reasonable efforts to mitigate such damages), and City may withhold any payments to the Contractor for the purpose of setoff or partial payment of the amounts owed the City as previously stated.

8.10 Notice. Any notice, demand, request, document, consent, approval, or communication either party desires or is required to give to the other party or any other person shall be in writing and shall be deemed to be given when served personally or deposited in the US Mail, prepaid, first-class mail, return receipt requested, addressed as follows:

To City: City of La Habra
110 E. La Habra Blvd
La Habra, California 90631
Attn.: Albert Mendoza

To Contractor:

8.11 Non-liability of City Officers and Employees. No officer or employee of the City shall be personally liable to the Contractor, or any successor in interest, in the event of any default or breach by the City or for any amount which may become due to the Contractor or to its successor, or for breach of any obligation of the terms of this Agreement.

8.12 Conflict of Interest. The Contractor warrants that it has not paid or given and will not pay or give any third party any money or other consideration for obtaining this Agreement.

Contractor and its officers, employees, associates and subcontractors, if any, will comply with all conflict of interest statutes of the State of California applicable to Contractor's services under this agreement, including, but not limited to, the Political Reform Act (Government Code Sections 81000, *et seq*.) and Government Code Section 1090. During the term of this Agreement, Contractor and its officers, employees, associates and subcontractor shall not, without the prior written approval of the City Representative, perform work for another person or entity for whom Contractor is not currently performing work that would require Contractor or one of its officers, employees, associates or

subcontractors to abstain from a decision under this Agreement pursuant to a conflict of interest statute.

8.13 Covenant Against Discrimination. Contractor covenants that, by and for itself, its heirs, executors, assigns, and all persons claiming under or through them, that there shall be no discrimination against or segregation of, any person or group of persons on account of race, color, creed, religion, sex, marital status, national origin, or ancestry in the performance of this Agreement. To the extent required by law, contractor shall take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to their race, color, creed, religion, sex, marital status, national origin, or ancestry.

8.14 Interpretation. The terms of this Agreement shall be construed in accordance with the meaning of the language used and shall not be construed for or against either party by reason of the authorship of this Agreement or any other rule of construction which might otherwise apply.

8.15 Severability. In the event that any one or more of the phrases, sentences, clauses, paragraphs, or sections contained in this Agreement shall be declared invalid or unenforceable by a valid judgment or decree of a court of competent jurisdiction, such invalidity or unenforceability shall not affect any of the remaining phrases, sentences, clauses, paragraphs, or sections of this Agreement which are hereby declared as severable and shall be interpreted to carry out the intent of the parties hereunder unless the invalid provision is so material that its invalidity deprives either party of the basic benefit of their bargain or renders this Agreement meaningless.

8.16 [reserved]

8.17 Unfair Business Practices Claims. In entering into a public works contract or a subcontract to supply goods, services or materials pursuant to a public works contract, the contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2, (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body renders final payment to the contractor without further acknowledgment by the parties. (Sec. 7103.5, California Public Contract Code).

8.18 Corporate Authority. The persons executing this Agreement on behalf of the parties hereto warrant that (i) such party is duly organized and existing, (ii) they are duly authorized to execute and deliver this Agreement on behalf of said party, (iii) by so executing this Agreement, such party is formally bound to the provisions of this Agreement, and (iv) the entering into this Agreement does not violate any provision of any other Agreement to which said party is bound.

8.19 PERS Eligibility Indemnification. In the event that Contractor or any employee, agent, or subcontractor of Contractor providing services under this Agreement claims or is determined by a court of competent jurisdiction or the California Public Employees Retirement System (PERS) to be eligible for enrollment in PERS as an employee of the City, Contractor shall indemnify, defend, and hold harmless City for the payment of any employee and/or employer contributions for PERS benefits on behalf of Contractor or its employees, agents, or subcontractors, as well as for the payment of any penalties and interest on such contributions, which would otherwise be the responsibility of City.

Notwithstanding any other agency, state or federal policy, rule, regulation, law or ordinance to the contrary, Contractor and any of its employees, agents, and subcontractors providing service under this

Agreement shall not qualify for or become entitled to, and hereby agree to waive any claims to, any compensation, benefit, or any incident of employment by City, including but not limited to eligibility to enroll in PERS as an employee of City and entitlement to any contribution to be paid by City for employer contribution and/or employee contributions for PERS benefits.

8.20 Cooperation. In the event any claim or action is brought against City relating to Contractor's performance or services rendered under this Agreement, Contractor shall render any reasonable assistance and cooperation which City might require.

8.21 Legal Responsibilities. The Contractor shall keep itself informed of City, State, and Federal laws, ordinances and regulations, which may in any manner affect the performance of its services pursuant to this Agreement. The Contractor shall at all times observe and comply with all such laws, ordinances and regulations. Neither the City, nor its officers, agents, or employees shall be liable at law or in equity as a result of the Contractor's failure to comply with this section.

8.22 Termination for Convenience. The City may terminate this Agreement without cause for convenience of the City upon giving contractor 30 days prior written notice of termination of the Agreement. Upon receipt of the notice of termination the Contractor shall cease all further work pursuant to the Agreement. Upon such termination by the City the Contractor shall not be entitled to any other remedies, claims, actions, profits, or damages except as provided in this paragraph. Upon the receipt of such notice of termination Contractor shall be entitled to the following compensation:

1. The contract value of the work completed to and including the date of receipt of the notice of termination, less the amount of progress payments received by contractor.

2. Actual move-off costs including labor, rental fees, equipment transportation costs, the costs of maintaining on-site construction office for supervising the mover-off.

3. The cost of materials custom made for this Agreement which cannot be used by the Contractor in the normal course of his business, and which have not been paid for by City in progress payments.

4. All costs shall not include any markups as might otherwise be allowed by any plans or specifications which were a part of the Agreement.

The provisions of this paragraph shall supersede any other provision of the Agreement or any provision of any plans, specification, addendums or other documents which are or may become a part of this Agreement. City and Contractor agree that the provisions of this paragraph are a substantive part of the consideration for this Agreement.

8.23 Responsibility for Errors. Contractor shall be responsible for its work and results under this Agreement. Contractor, when requested, shall furnish clarification and/or explanation as may be required by the City's representative, regarding any services rendered under this Agreement at no additional cost to City. In the event that an error or omission attributable to Contractor occurs, then Contractor shall, at no cost to City, provide all necessary design drawings, estimates and other Contractor professional services necessary to rectify and correct the matter to the sole satisfaction of City and to participate in any meeting required with regard to the correction.

8.24 Order of Precedence. In the event of an inconsistency in this Agreement and any of the attached Exhibits, the terms set forth in this Agreement shall prevail. If, and to the extent this Agreement incorporates by reference any provision of any document, such provision shall be deemed a part of this Agreement. Nevertheless, if there is any conflict among the terms and conditions of this Agreement and those of any such provision or provisions so incorporated by reference, this Agreement shall govern over the document referenced.

8.25 Costs. Each party shall bear its own costs and fees incurred in the preparation and negotiation of this Agreement and in the performance of its obligations hereunder except as expressly provided herein.

8.26 No Third Party Beneficiary Rights. This Agreement is entered into for the sole benefit of City and Contractor and no other parties are intended to be direct or incidental beneficiaries of this Agreement and no third party shall have any right in, under or to this Agreement.

8.27 Headings. Paragraphs and subparagraph headings contained in this Agreement are included solely for convenience and are not intended to modify, explain or to be a full or accurate description of the content thereof and shall not in any way affect the meaning or interpretation of this Agreement.

8.28 Construction. The parties have participated jointly in the negotiation and drafting of this Agreement. In the event an ambiguity or question of intent or interpretation arises with respect to this Agreement, this Agreement shall be construed as if drafted jointly by the parties and in accordance with its fair meaning. There shall be no presumption or burden of proof favoring or disfavoring any party by virtue of the authorship of any of the provisions of this Agreement.

8.29 Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original. All counterparts shall be construed together and shall constitute one agreement.

8.30 Funding Source Conditions – Contractor's Obligation. Contractor acknowledges that the City may be paying for the Project by using funds it receives or will receive from various funding sources in the form of grants and/or subsidies, and the like under certain terms and conditions. Contractor acknowledges and agrees that any failure of the Contractor and/or its subcontractors to perform its obligations under the Contract, including, but not limited to, timely submitting accurate reports and records, that in any way results in the City not meeting the terms and conditions placed on the funds by the funding source, or forfeiting its entitlement to or, otherwise, not receiving, the funds, then the Contractor shall be liable to pay the City for the funds not granted to the City on the Project.

8.31 Entire Agreement. This Agreement constitutes the entire agreement between the parties with respect to any matter referenced herein and supersedes any and all other prior writings and oral negotiations. This Agreement may be modified only in writing, and signed by the parties in interest at the time of such modification. The terms of this Agreement shall prevail over any inconsistent provision in any other contract document appurtenant hereto, including exhibits to this Agreement.

IN WITNESS WHEREOF, the parties have executed and entered into this Agreement as of the date first written above.

CITY OF LA HABRA,
A municipal corporation

_____ Date: _____
Jim Sadro, City Manager

CONTRACTOR

_____ Date: _____
Signature

_____
Name and Title

_____
Social Security or Taxpayer ID Number

ATTEST:

_____ Date: _____
Rhonda J. Barone, City Clerk

APPROVED AS TO FORM:

_____ Date: _____
Richard D. Jones, City Attorney

(Use of City Bond Form is Required)

LABOR AND MATERIAL PAYMENT BOND
PUBLIC WORK (CALIFORNIA)

KNOW ALL MEN BY THESE PRESENT:

WHEREAS, _____, as Principal, has entered into a contract dated _____, with the City of La Habra (Obligee) referred to and made a part hereof to perform the following work, to wit: _____ and all appurtenant work in accordance with PROJECT NO. _____, which requires Principal to file this bond to secure claims made in relation to the project.

NOW THEREFORE, we, _____, as Principal, and _____, a corporation organized under the laws of _____ and duly authorized to transact business in the State of California, as Surety, are held firmly bound unto the City of La Habra, as Obligee, and all sub-contractors, laborers, material persons and other persons employed in the performance of the referenced agreement, in the sum of _____ Dollars ($ .00), lawful money of the United States of America, for the payment whereof well and truly to be made the Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

If the above bounden PRINCIPAL, his or its heirs, executors, administrators, successors, assigns, or any of his or its sub-contractors, fails to pay for any materials, provisions, provender, or other supplies, or teams, implements or machinery, used in, upon, for or about the performance of the work contracted to be done, or for any work or labor to persons named in Section 9100 or the Civil Code, thereon of any kind, or for amounts due under the Unemployment Insurance Code with respect to such work or labor deducted, withheld and paid over to the Employment Development Department from the wages of employees of the contractor and sub-contractors pursuant to Section 13020 of the Unemployment Insurance Code, that the SURETY on this bond will pay the same, in an amount not exceeding the sum specified in this bond, AND ALSO, in case suit is brought upon this bond, a reasonable attorney's fee, which shall be awarded by the court to the prevailing party in said suit, said attorney's fee to be taxed as costs in said suit and to be included in the judgment herein rendered.

As part of the obligation secured hereby, the SURETY shall not be exonerated or released from the obligation of the bond by any change, alteration, or modification in or of any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement or pertaining or relating to the furnishing of labor, materials, or equipment therefor, nor by any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any scheme of work of improvement, nor by any rescission or attempted rescission of the contract, agreement or bond, nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under

any such contract or agreement, or under the bond, nor, where the bond is given for the benefit of claimants, by any fraud practiced by any person other than the claimant seeking to recover on the bond.

This bond shall inure to the benefit of any and all persons, companies and corporations entitled to file claims under the Civil Code so as to give them a right of action in a suit on this bond.

This bond is executed for the purpose of complying with the laws of the State of California and shall inure to the benefit of any of the persons named in Section 9100 of the Civil Code of the State of California.

IN WITNESS THEREOF, we have hereunto set our hands and seals this _____ day of _____, 20__.

(Corporate Seal)

_____
Principal

By_____

.....
Title

(Corporate Seal)

_____
Principal

By_____

.....
Title

APPROVED AS TO FORM:
/s/ Richard D. Jones
City Attorney

FAITHFUL PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That we,_____

_____hereinafter referred to as

"Contractor", as principal, and_____

_____as surety, are held and firmly

bound unto City of La Habra in the sum of _____

_____

Lawful money of the United States of America for the payment of which sum well and truly to be made we bind ourselves jointly and severally, firmly by these presents.

The condition of the foregoing obligation is such that WHEREAS, said Contract has been awarded and is about to enter into the annexed contract with City of La Habra for construction of Street Improvements as specifically set forth in the documents entitled:

VISTA GRANDE PARK IMPROVEMENT PROJECT
CITY PROJECT NO. 2-P-22

and is required under the terms of the Contract to give this bond in connection with the execution of said contract.

NOW, THEREFORE, if the said Contractor shall well and truly do and perform all of the covenants and obligations of said contract on his part to be done and performed at the times and in the manner specified herein, then this obligation shall be null and void, otherwise it shall be and remain in full force and effect.

PROVIDED, that any alterations in the work to be done or the materials to be furnished which may be made pursuant to the terms of said Contract shall not in any way release either the Contractor or the surety thereunder nor shall any extensions of time granted under the provisions of said Contract release either the Contractor or the surety, and notice of such alterations or extensions of the Contract is hereby waived by the surety.

WITNESS our hands this_____day of_____, 2023.

_____
Contractor

BY: _____

(Seal)

_____
Title

APPROVED:

_____
Surety

_____ BY: _____
(Seal)

Mailing Address of Surety:

_____

_____

_____

_____
Telephone Number of Surety

(Use of City form is required)

SUPPLEMENTAL INFORMATION TO BE COMPLETED BY PRINCIPAL

If an individual, so state. If a firm or co-partnership, state the firm and give the names of all individual co-partners composing the partnership. If a Corporation, state legal name of corporation; state also the names of the president, secretary, treasurer and manager thereof.

_____
_____
_____

Business Address: _____
_____
_____

Telephone Number: _____

Date: _____

Print Name: _____
Principal

Signature: _____
Title

(Use of City form
is required)

TAX IDENTIFICATION NUMBER

The Tax Equity and Fiscal Responsibility Act of 1982 requires the payer (City of La Habra) to report to the Internal Revenue Service taxable payments to payees.

You (as a payee) are required by law to provide us with your Taxpayer Identification Number (if an individual or partnership, your Social Security Number). If you do not provide us with your correct identification number, you may be subject to a penalty imposed by the Internal Revenue Service. The payments subject to withholdings may include, but are not limited to, interest, dividends, or other payments the City of La Habra made to you. Other payments may include rents, royalties, commissions and fees for service of non-employees.

If you are exempt from income tax, we are still required, by law, to maintain a Tax Identification Number on file. **PLEASE PROVIDE YOUR TAX IDENTIFICATION NUMBER next to the appropriate listing below, sign, date and return to:**

CITY OF LA HABRA FINANCE DEPARTMENT
110 E. La Habra Blvd
La Habra, CA 90631

Exempt: Yes___ No___ Telephone ( ) _____

CORPORATION:_____

U.S.A. OR ANY AGENCIES THEREOF:_____

IRS CODE #501 TAX-EXEMPT ORGANIZATION:_____

A NON-COMMISSIONED CITY OF LA HABRA EMPLOYEE:_____

SOLE PROPRIETOR:_____

A PARTNERSHIP:_____

OTHER: _____(Explain)

Signature/Title: _____ Date:_____

BID GUARANTEE

TO THE CITY OF LA HABRA
PROJECT NO. 2-P-22

As a material inducement to the City to award the contract for Project No. _____to _____, the undersigned ("Guarantor") has agreed to enter into this guarantee. The Guarantor hereby unconditionally guarantees to the fullest extent allowed by law the following work included in this project: _____("the work").

Guarantor guarantees that the materials and equipment used by itself and its subcontractors will be free from defects and that the work will conform to the plans and specifications. Should any of the materials or equipment prove defective or should the work as a whole, or any part thereof, prove defective for any reason whatsoever (except due to intentional torts by the City), or should the work as a whole or any part thereof fail to operate properly or fail to comply with the plans and specifications, Guarantor will, at the City's sole election: 1) reimburse the City, upon written demand, for all of the City's expenses incurred replacing or restoring any such equipment or materials, including the cost of any work necessary to make such replacement or repairs; or 2) replace any such defective material or equipment and repair said work completely, all without any cost to the City. Guarantor further guarantees that any such repair work will conform to the plans and specifications for the project. This guarantee will remain in effect for five years from the date on which the contracted for work is accepted for use by the City.

Guarantor understands and agrees that the City shall have the unqualified option to make any replacements or repairs itself or to have such replacement, repair, performed by the undersigned. The City shall have no obligation to consult with Guarantor before the City proceeds to perform any repair, replacement, or work itself. If the City elects to have Guarantor perform said repair, replacement, or work, Guarantor agrees that the repair, replacement, or work shall be performed within 15 days after receipt of a written demand from the City.

If the City elects to perform the replacement, repairs itself, Guarantor agrees to make reimbursement payment within 15 days after receipt of a written demand for payment from the City.

If the Guarantor fails or refuses to comply with this guarantee, the City shall be entitled to all costs and expenses, including attorneys and expert fees, reasonably incurred by reason of Guarantor's failure or refusal.

Guarantor Date:_____

Contractor:_____ By:_____

Title:_____

STATEMENT OF NON COLLUSION BY CONTRACTOR

The undersigned who submits herewith to the City of La Habra a bid or proposal does hereby certify:

a. That all statements of fact in such bid or proposal are true;
b. That such bid or proposal was not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization or corporation;
c. That such bid or proposal is genuine and not collusive or sham;
d. That said bidder has not, directly or indirectly by agreement, communication or conference with anyone, attempted to induce action prejudicial to the interest of the City of La Habra or of any other bidder or anyone else interested in the proposed procurement;
e. Did not, directly or indirectly, collude, conspire, connive or agree with anyone else that said bidder or anyone else would submit a false or sham bid or proposal, or that anyone should refrain from bidding or withdraw his bid or proposal;
f. Did not in any manner, directly or indirectly seek by agreement, communication or conference with anyone to raise or fix the bid or proposal price of said bidder or of anyone else, or to raise or fix any overhead, profit or cost element of his bid or proposal price, or that of anyone else;
g. Did not, directly or indirectly, submit his bid or proposal price or any breakdown thereof, or the contents thereof, or divulge information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member agent thereof, or to any individual or group of individuals, except to the City of La Habra, or to any person or persons who have a partnership or their financial interest with said bidder in his business.
h. Did not provide, directly or indirectly to any officer or employee of the City of La Habra any gratuity, entertainment, meals, or anything of value, whatsoever, which could be objectively construed as intending to invoke any form of reciprocation or favorable treatment.
i. That no officer or principal of the undersigned firm is related to any officer or employee of the city by blood or marriage within the third degree or is employed, either full or part time, by the City of La Habra either currently or within the last two (2) years.
j. That no officer or principal of the undersigned firm nor any subcontractor to be engaged by the principal has been convicted by a court of competent jurisdiction of any charge of fraud, bribery, collusion, conspiracy or any other act in violation of any state or federal antitrust law in connection with the bidding upon award of, or performance of, any public work contract, with any public entity, within the last three years.

I certify, under penalty of perjury under the laws of the State of California, that the foregoing is true and correct and that this certification was executed:

On_____at_____California.

Firm_____ _____
(Signature)

Street_____ _____
(Print Name & Title)

City_____State_____Zip_____

CERTIFICATION OF COMPLIANCE

AFFIRMATIVE ACTION REQUIREMENTS

EQUAL EMPLOYMENT OPPORTUNITY

For
VISTA GRANDE PARK IMPROVEMENT
CITY PROJECT NO. 2-P-22

_____Certifies that:
(Contractor)

It has adopted and approved affirmative action plan in compliance with Title VII of the Civil Rights Act and the Equal Employment Opportunity Act of 1972 and agrees to submit a copy of that plan to the Assistant to the City Manager/Personnel of the City of La Habra for inspection prior to the award of contract.

Signed: _____

By: _____

Title: _____

Date: _____

EXHIBIT A

SCOPE OF SERVICES

EXHIBIT B
INSURANCE REQUIREMENTS

Contractor shall maintain and shall require all of its subcontractors, consultants, and other agents to maintain the insurance listed below. Any requirement for insurance to be maintained after completion of the work shall survive this agreement.

CITY reserves the right to review any and all of the required insurance policies and/or endorsements, but has no obligation to do so. Failure to demand evidence of full compliance with the insurance requirements set forth in this agreement or failure to identify any insurance deficiency shall not relieve Contractor from, nor be construed or deemed a waiver of, its obligation to maintain the required insurance at all times during the performance of this agreement.

A. Workers Compensation & Employers Liability Insurance

- Workers Compensation insurance with statutory limits as required by the Labor Code of the State of California.
- Employers Liability with limits of $1,000,000 per Accident; $1,000,000 Disease per employee; $1,000,000 Disease per policy.
- The policy shall include a written waiver of the insurer's right to subrogate against CITY.
- Required Evidence Of Coverage:
    1. Subrogation waiver endorsement; and
    2. Properly completed Certificate of Insurance.

B. General Liability Insurance

- Commercial General Liability Insurance no less broad than Insurance Services Office (ISO) form CG 00 01.
- Coverage shall be on a standard occurrence form. Claims-Made forms are not acceptable without prior written consent. Modified, limited or restricted Occurrence forms are not acceptable without prior written consent.
- Minimum Limits: $5,000,000 per Occurrence; $10,000,000 General Aggregate; $10,000,000 Products/Completed Operations Aggregate. The General Aggregate shall apply separately to each project. The required limits may be provided by a combination of General Liability Insurance and Commercial Excess or Umbrella Liability Insurance. If contractor maintains higher limits than the specified minimum limits, CITY requires and shall be entitled to coverage for the higher limits maintained by contractor.
- Any deductible or self-insured retention shall be shown on the Certificate of Insurance. If the deductible or self-insured retention exceeds $25,000 it must be approved in advance by CITY. Contractor is responsible for any deductible or self-insured retention and shall fund it upon CITY'S written request, regardless of whether Contractor has a claim against the insurance or is named as a party in any action involving CITY.
- Coverage shall be continued for one (1) year after completion of the work.
- CITY shall be endorsed as an additional insured for liability arising out of ongoing and completed operations by or on behalf of the contractor. CITY shall

continue to be an additional insured for completed operations for (1) year after completion of the work.

- The policy definition of "insured contract" shall include assumptions of liability arising out of both ongoing operations and the products-completed operations hazard ("f" definition of insured contract in ISO form CG 00 01, or equivalent).
- The insurance provided to the additional insureds shall be primary to, and non-contributory with, any insurance or self-insurance program maintained by them.
- The policy shall cover inter-insured suits and include a "Separation of Insureds" or "severability" clause which treats each insured separately.
- The policy shall be endorsed to include a written waiver of the insurer's right to subrogate against all persons or entities that are, or are required to be, additional insureds.
- The policy shall not contain a Contractors' Warranty or other similar language which eliminates or restricts insurance because of a subcontractor's failure to carry specific insurance or to supply evidence of such insurance.
- Required Evidence of Coverage:
    1. Copy of the additional insured endorsement or policy language granting additional insured status;
    2. Copy of the endorsement or policy language indicating that coverage applicable to the additional insureds is primary and non-contributory;
    3. Properly completed Certificate of Insurance; and
    4. Completed and signed Agent/Broker Questionnaire with supporting documentation as required.

C. Automobile Liability Insurance

- Minimum Limit: $5,000,000 combined single limit per accident.
- Coverage shall apply to all owned, hired and non-owned vehicles.
- CITY shall qualify as an insured.
- Required Evidence of Coverage:
    1. Copy of the endorsement or policy language indicating that CITY is an insured; and
    2. Properly completed Certificate of Insurance.

D. Contractors Pollution Liability Insurance

- Minimum Limits: $5,000,000 per Pollution Incident; $10,000,000 Aggregate;
- Coverage shall apply to pollution incidents at or from any location at which Contractor is performing work under this agreement.
- Any deductible or self-insured retention shall be shown on the Certificate of Insurance. If the deductible or self-insured retention exceeds $25,000 it shall be approved in advance by CITY. Contractor is responsible for any deductible or self-insured retention and shall fund it upon CITY written request, regardless of whether Contractor has a claim against the insurance or is named as a party in any action involving CITY.
- CITY shall be endorsed as an additional insured for liability arising out of ongoing and completed operations by or on behalf of the Contractor. Additional

insured status shall continue for one (1) year after completion of the work.

- The insurance provided to the additional insureds shall apply on a primary and non-contributory basis with respect to any insurance or self-insurance program maintained by them.
- If the insurance is on a Claims-Made basis, the retroactive date shall be no later than the commencement of work.
- The insurance shall be continued for one (1) year after completion of the work. If the insurance is on a Claims-Made basis, the continuation coverage may be provided by: (a) renewal of the existing policy; (b) an extended reporting period endorsement; or (c) replacement insurance with a retroactive date no later than the commencement of the work.
- Required Evidence of Coverage:
    1. Copy of the additional insured endorsement or policy language granting additional insured status;
    2. Copy of the endorsement or policy language indicating that coverage for the additional insureds is primary and non-contributory;
    3. Properly completed Certificate of Insurance.

E. Surety Bonds

- Bid bond.
- Performance and payment bonds for the entire contract price.
- The surety must be authorized to issue these bonds in the State of California.

F. Standards for Insurance Companies

- Insurers, other than the California State Compensation Insurance Fund, shall have an A.M. Best's rating of at least A:VII.

G. Documentation

- The Certificate of Insurance shall include the following reference: [_____]
- The name and address for Additional Insured endorsements and Certificates of Insurance is: City of La Habra
- Contractor shall provide immediate written notice if: (1) any of the required insurance policies is terminated; (2) the limits of any of the required policies are reduced; or (3) the deductible or self-insured retention is increased.
- Current Evidence of Coverage shall be provided for the entire required period of insurance.
- Upon written request, certified copies of required insurance policies shall be provided within thirty (30) days.

EXHIBIT C

CERTIFICATES OF INSURANCE AND ENDORSEMENTS

EXHIBIT D

CLAIMS PROCEDURE

SUMMARY OF PUBLIC CONTRACT CODE § 9204

The following procedure will apply to any claims by the Contractor on the City:

A "claim" is a separate demand on the City by a contractor on a public works project and sent by registered mail or certified mail with return receipt requested, for one or more of the following:

- A time extension, including relief from penalties for delay
- Payment by the City of money damages under the terms of the contract
- Payment of an amount that is disputed by the City

Initial Review

The claim must be supported by appropriate documentation. The City has 45 days within which to review the claim and provide the contractor with a written statement identifying the disputed and undisputed portions of the claim. If the City does not issue a written statement, the claim is deemed rejected in its entirety. The City will pay any undisputed portion of the claim within 60 days of issuing the statement.

Meet & Confer

If the contractor disputes the City's written response, or if the City does not issue one, the contractor may request in writing an informal conference to meet and confer for possible settlement of the claim. The City will schedule the meet and confer conference within 30 days of this request and provide a written statement identifying the remaining disputed and undisputed portions of the claim within 10 business days of the meet and confer. The City will pay the undisputed portion within 60 days of issuing this statement.

Mediation

With respect to any disputed portion remaining after the meet and confer, the City and contractor will submit the matter to nonbinding mediation, agree to a mediator within 10 business days after issuing the written statement, and share mediation costs equally. If mediation is unsuccessful, then the terms of the public works agreement and applicable law will govern resolution of the dispute.

Miscellaneous Provisions

Amounts not paid by the City in a timely manner bear interest at 7% per annum. Subcontractors may submit claims via this procedure through the general contractor. The City and contractor may waive the requirement to mediate, but cannot otherwise waive these claim procedures.

APPENDIX “A”

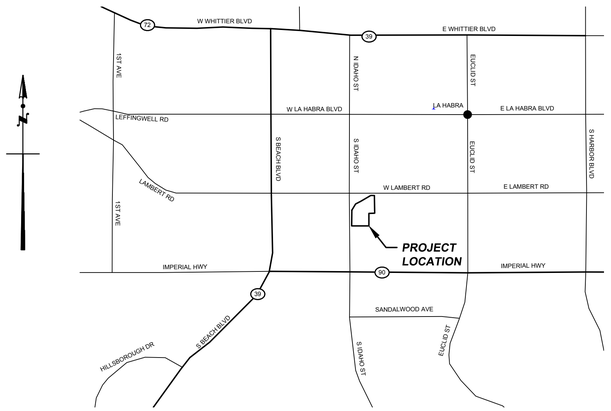
VISTA GRANDE IMPROVEMENTS PROJECT PLANS
PROJECT NO. 2-P-22

APPENDIX "A"

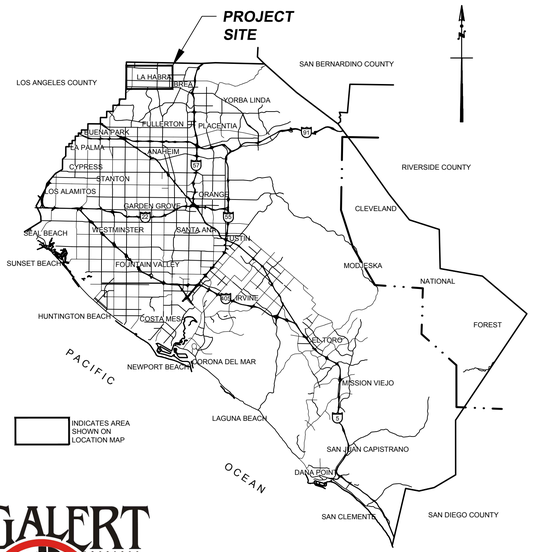
CITY OF LA HABRA

VISTA GRANDE PARK IMPROVEMENTS

LA HABRA, CA
PROJECT NO. 2-P-22
JUNE 2023



LOCATION MAP
NTS



VICINITY MAP

NTS

DIGALERT®
DIAL BEFORE YOU DIG 811
TWO WORKING DAYS BEFORE YOU DIG
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

INDEX OF SHEETS

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D-101	DEMO PLAN	L-300	OVERALL TREE PLAN & KEY MAP	E-103	ENLARGED SITE PLAN - SOUTH
C-101	GRADING PLAN	L-301	TREE PLANTING PLAN	E-201	ENLARGED NEW ELECTRICAL PLANS
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L-202	IRRIGATION PLAN	L-505	SPECIFICATIONS		
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L-205	IRRIGATION PLAN	E-002	TITLE 24 EXTERIOR		
L-206	IRRIGATION PLAN	E-003	TITLE 24 EXTERIOR		

EARTHWORK VOLUMES:

CUT: 18,902 YDS
FILL: 17,495 YDS

NOTIFICATIONS

CITY OF LA HABRA PUBLIC WORKS	(562) 383-4170
SOUTHERN CALIFORNIA EDISON	(714) 835-5200
CITY OF LA HABRA WATER AND SEWER	(562) 383-4170
CITY OF LA HABRA BUILDING & SAFETY	(562-383-4100
CITY OF LA HABRA RECREATION DIVISION	(562) 383-4205

OWNER:

CITY OF LA HABRA
110 EAST LA HABRA BLVD
LA HABRA, CA 90631
TEL: 562-383-7777

CIVIL ENGINEER:

GREG SAUL
TETRA TECH BAS
21700 COPLEY DRIVE, SUITE 200
DIAMOND BAR, CA 91765
TEL: 909-860-7777

SITE ADDRESS:

1001 WEST LAS LOMAS DRIVE
LA HABRA
CA 90631

THERE SHALL BE NO TRENCHES OR EXCAVATIONS 5 FEET OR MORE IN DEPTH INTO WHICH A PERSON IS REQUIRED TO DESCEND, OR OBTAIN PERMIT FROM STATE OF CALIFORNIA, DIVISION OF OCCUPATIONAL SAFETY AND HEALTH (CAL/OSHA). THIS PERMIT AND ANY OTHER SAFETY PERMIT SHALL BE OBTAINED PRIOR TO COMMENCE OF ANY WORK.

CONTACT CAL/OSHA AT 714-558-4451 FOR ADDITIONAL INFORMATION.

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

NO.	NAME	REVISION DESCRIPTION	DATE

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

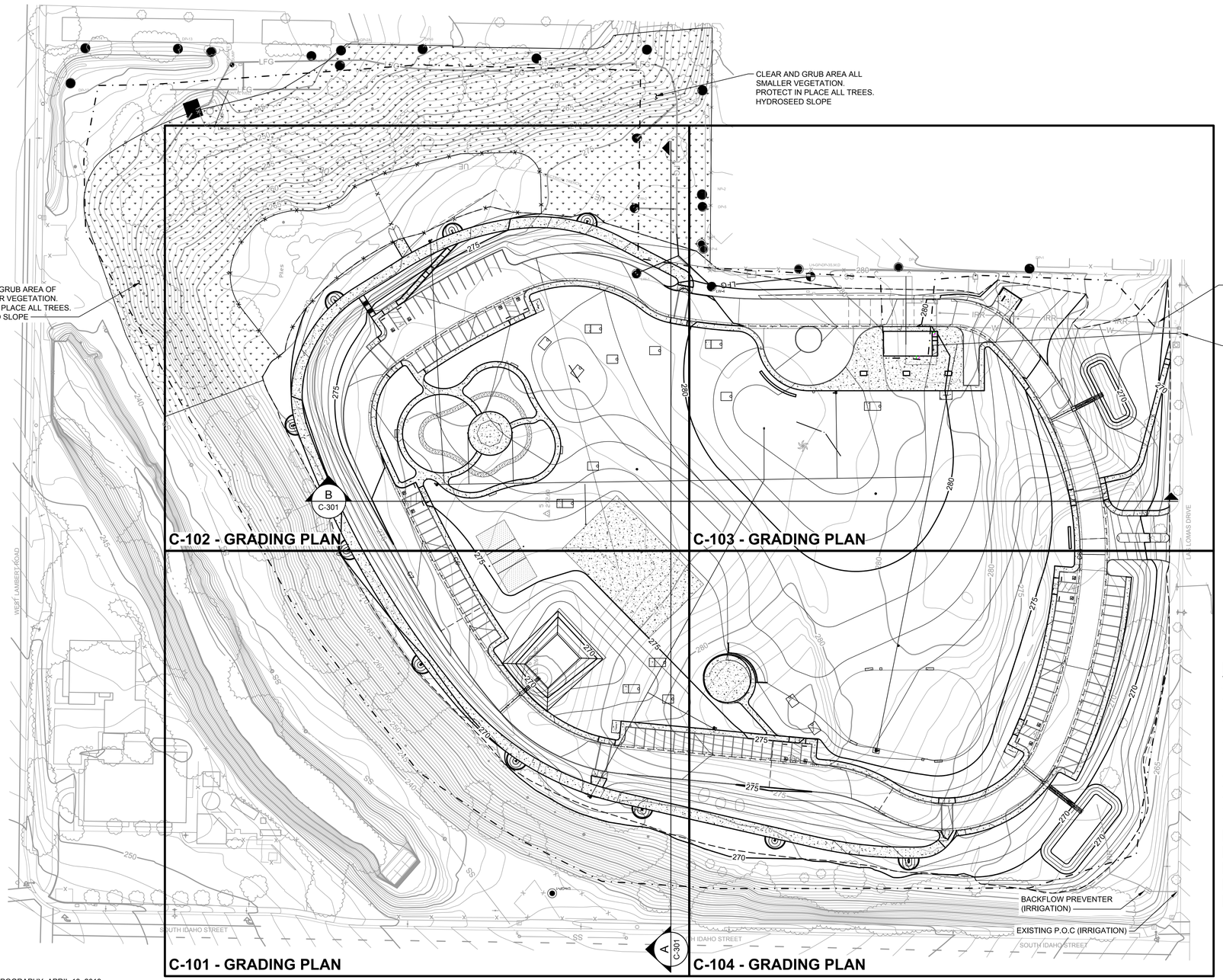
REGISTERED PROFESSIONAL ENGINEER GREG EDWIN SAUL 95500 CIVIL STATE OF CALIFORNIA

CITY OF LA HABRA - VISTA GRANDE PARK

COVER SHEET

DESIGNED BY :	G.E.S.	FILE : C-001 Cover Sheet.dwg			
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN		
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-001	SHEET	1 OF 89
APPROVED BY :	G.E.S.	DATE : 06-2023			

P:\La Habra\Vista Grande Park\CAD\SheetFiles\C-001 Cover Sheet.dwg 6/14/2023 3:48 PM



DEMOLITION NOTES

1. PROTECT IN PLACE
2. REMOVE AND DISPOSE
3. CLEAR AND GRUB
4. REMOVE AND RELOCATE

LEGEND

- APPROXIMATE LIMIT OF PROPERTY LINE
- LIMIT OF GRADING / DAYLIGHT
- CONCRETE WALK
- AC PAVEMENT ROAD
- 10 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 10 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- LIMIT OF REFUSE
- FLOWLINE
- W PROPOSED WATER LINE
- W EXISTING WATER LINE
- SS EXISTING SEWER LINE
- PAVED AC ROAD
- PAVED AC ROAD
- PAVED AC ROAD
- PAVED AC ROAD
- PCC
- SURVEY CONTROL POINT

0 25 50 100

GRAPHIC SCALE:1"= 50'

CONSTRUCTION NOTES

1. PROTECT IN PLACE
2. CUT OR FILL TO GRADES SHOWN
3. CONSTRUCT A1-6 (150) CURB PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 120-3
4. CONSTRUCT A2-6 (150) CURB AND GUTTER PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 120-3
5. CONSTRUCT 3" AC OVER 5.5" CAB - STRUCTURAL SUBGRADE PER 1 C-501
6. CONSTRUCT LONGITUDINAL GUTTER PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 122-3
7. CONSTRUCT DRIVEWAY PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 110-2
8. CONSTRUCT TYPE 3 CURB RAMP PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 111-5 AND PER 4 C-501
9. CONSTRUCT TYPE 4 CURB RAMP PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 111-5 AND PER 5 C-501
10. CONSTRUCT 3" AC OVER 5.5" CAB - STRUCTURAL SUBGRADE PER 8 C-501
11. CONSTRUCT PARKING STALL PER 3 C-501
12. CONSTRUCT ACCESSIBLE PARKING STALL AND SIGNAGE PER 2 C-501
13. CONSTRUCT CROSS GUTTER PER 1 C-502
14. CONSTRUCT CROSS GUTTER PER 3 C-502
15. CONSTRUCT CROSS GUTTER PER 5 C-502
16. CONSTRUCT 4" THICK CONCRETE SIDEWALK; WIDTH PER PLAN
17. CONSTRUCT BIORETENTION BASIN PER 1 C-503
18. CONSTRUCT STAIRS AND WALKWAY PER 1 C-505
19. CONSTRUCT 6" TO 0" CURB TRANSITION
20. CONSTRUCT 3.5" AC OVER 9" CAB - STRUCTURAL SUBGRADE PER 1 C-501
21. CONSTRUCT 10" WIDE WHITE STRIPE
22. CONSTRUCT CONCRETE WALKING PATH PER SHEETS L-101 AND L-102
23. CONSTRUCT SETTLEMENT MONUMENT PER 2 C-502
24. CONSTRUCT STAGE, RAMPS, WALLS AND APPURTENANCES PER STRUCTURAL PLANS
25. INSTALL 18" ID PVC PIPE PER 6 C-501
26. CONSTRUCT 3.5" AC OVER 9" CAB - STRUCTURAL SUBGRADE PER 8 C-501
27. CONSTRUCT CLEANOUT PER 3 C-503
28. CONSTRUCT OVERFLOW STRUCTURE PER 1 C-504
29. CONSTRUCT PARKWAY DRAIN PER SPPWC STD PLAN 151-3 AND PER 4 C-503
30. CONSTRUCT MANHOLE PER 4 C-505
31. INSTALL 2" SCH 40 PVC WATER LINE PER 6 C-501
32. INSTALL HOSE BIBB PER 7 C-501
33. NOT USED
34. INSTALL 6" SEWER LATERAL PER 3 C-604
35. INSTALL HANDRAILS PER 9 C-501

DATE OF TOPOGRAPHY: APRIL 18, 2019

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

NO.	NAME	REVISION DESCRIPTION	DATE

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

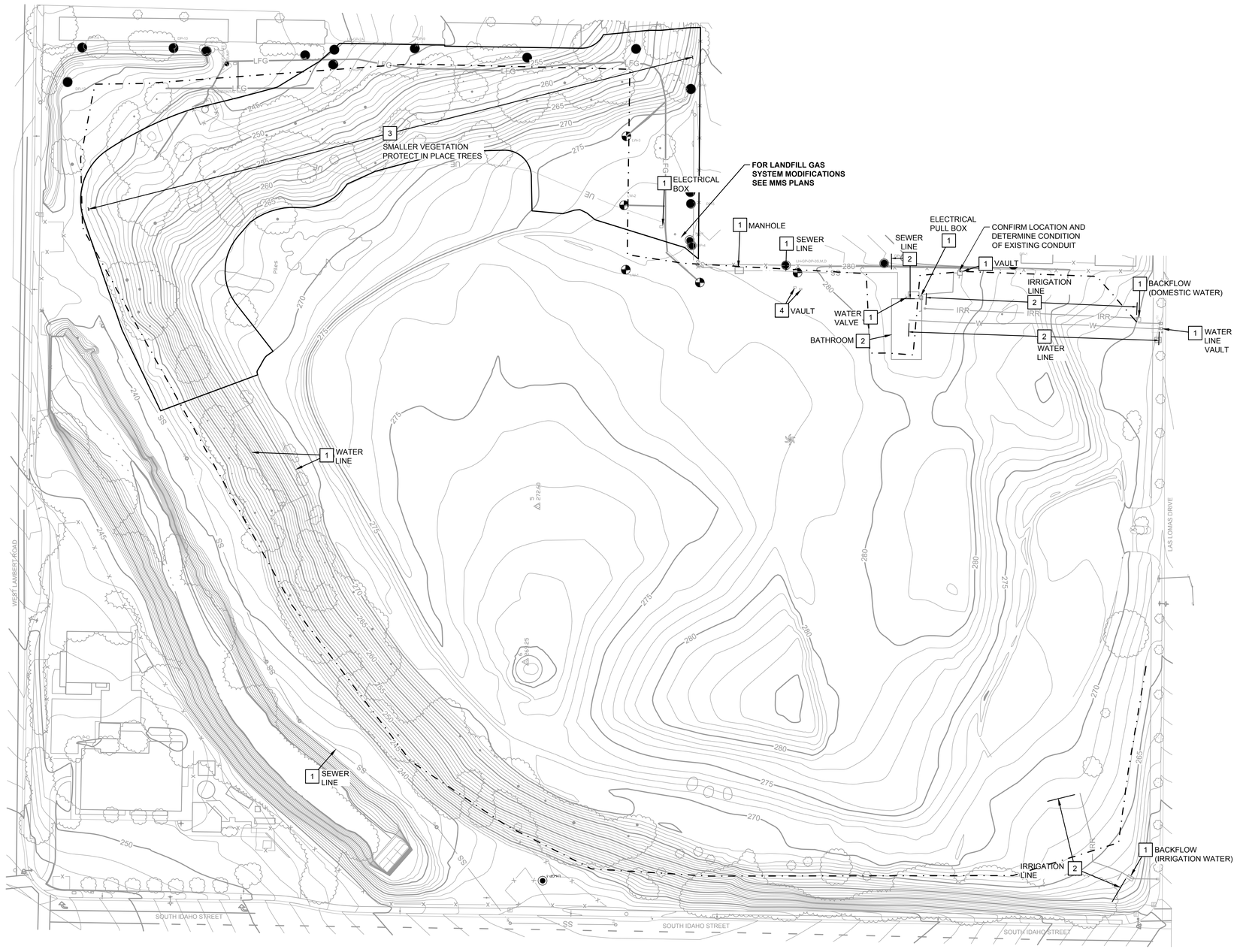
REGISTERED PROFESSIONAL ENGINEER GREG EDWIN SAUL 87580 CIVIL STATE OF CALIFORNIA

CITY OF LA HABRA - VISTA GRANDE PARK

SITE PLAN

DESIGNED BY :	G.E.S.	FILE : C-100 Site Plan.dwg			
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN		
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-100	SHEET 2 OF 89	
APPROVED BY :	G.E.S.	DATE : 06-2023			

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0 25 50 100

GRAPHIC SCALE:1"= 50'

DEMOLITION NOTES

1. PROTECT IN PLACE
2. REMOVE AND DISPOSE
3. CLEAR AND GRUB
4. REMOVE AND RELOCATE

LEGEND

- APPROXIMATE LIMIT OF PROPERTY LINE
- LIMIT OF GRADING / DAYLIGHT
- CONCRETE WALK
- AC PAVEMENT ROAD
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- LIMIT OF REFUSE
- FLOWLINE
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING UNDERGROUND ELECTRICAL
- SURVEY CONTROL POINT

DATE OF TOPOGRAPHY: APRIL 18, 2019

NO.	NAME	REVISION DESCRIPTION	DATE

TETRA TECH
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CITY OF LA HABRA - VISTA GRANDE PARK

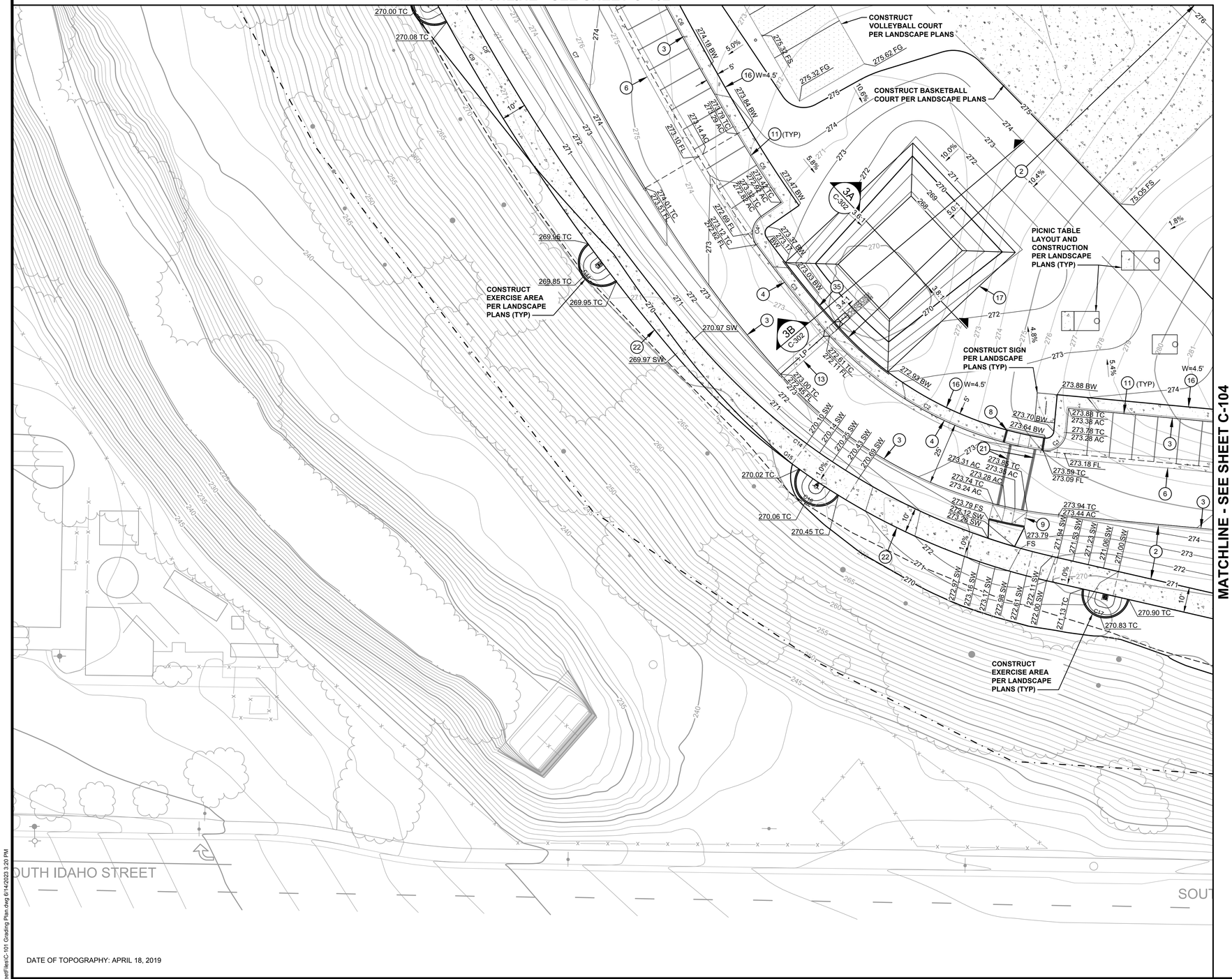
DEMO PLAN

DESIGNED BY :	G.E.S.	FILE : D-101 Demo Plan.dwg			
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN		
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	D-101	SHEET 3 OF 89	
APPROVED BY :	G.E.S.	DATE : 06-2023			

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

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MATCHLINE - SEE SHEET C-102



MATCHLINE - SEE SHEET C-104

DATE OF TOPOGRAPHY: APRIL 18, 2019

0 10 20 40

GRAPHIC SCALE:1"= 20'

CONSTRUCTION NOTES

(2) CUT OR FILL TO GRADES SHOWN

(3) CONSTRUCT A1-6 (150) CURB PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 120-3

(4) CONSTRUCT A2-6 (150) CURB AND GUTTER PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 120-3

(6) CONSTRUCT LONGITUDINAL GUTTER PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 122-3

(8) CONSTRUCT TYPE 3 CURB RAMP PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 111-5 AND PER — 4 C-501

(9) CONSTRUCT TYPE 4 CURB RAMP PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 111-5 AND PER — 5 C-501

(11) CONSTRUCT PARKING STALL PER — 3 C-501

(13) CONSTRUCT CROSS GUTTER PER — 1 C-502

(16) CONSTRUCT 4" THICK CONCRETE SIDEWALK; WIDTH PER PLAN

(17) CONSTRUCT BASIN PER — 1 C-503

(21) CONSTRUCT 10" WIDE WHITE STRIPE

(22) CONSTRUCT CONCRETE WALKING PATH PER SHEETS L-101 AND L-102

(35) INSTALL HANDRAILS PER — 9 C-501

LEGEND

- APPROXIMATE LIMIT OF PROPERTY LINE
- LIMIT OF GRADING / DAYLIGHT
- CONCRETE WALK
- AC PAVEMENT ROAD
- 10 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 10 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- LIMIT OF REFUSE
- FLOWLINE
- W PROPOSED WATER LINE
- W EXISTING WATER LINE
- SS EXISTING SEWER LINE
- PCC
- SURVEY CONTROL POINT

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C1	13.03'	8.00'	93°20'52"
C2	100.49'	145.00'	39°42'31"
C3	45.37'	450.00'	5°46'35"
C4	12.71'	8.00'	91°02'14"
C5	32.65'	432.00'	4°19'49"
C6	129.35'	1437.00'	5°09'27"
C8	285.64'	800.00'	20°27'26"
C9	289.21'	810.00'	20°27'26"
C11	29.96'	9.50'	180°40'19"
C14	170.72'	265.00'	36°54'40"

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C15	177.16'	275.00'	36°54'40"
C16	30.20'	9.50'	182°07'30"
C17	29.85'	9.50'	180°00'00"

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

NO.	NAME	REVISION DESCRIPTION	DATE

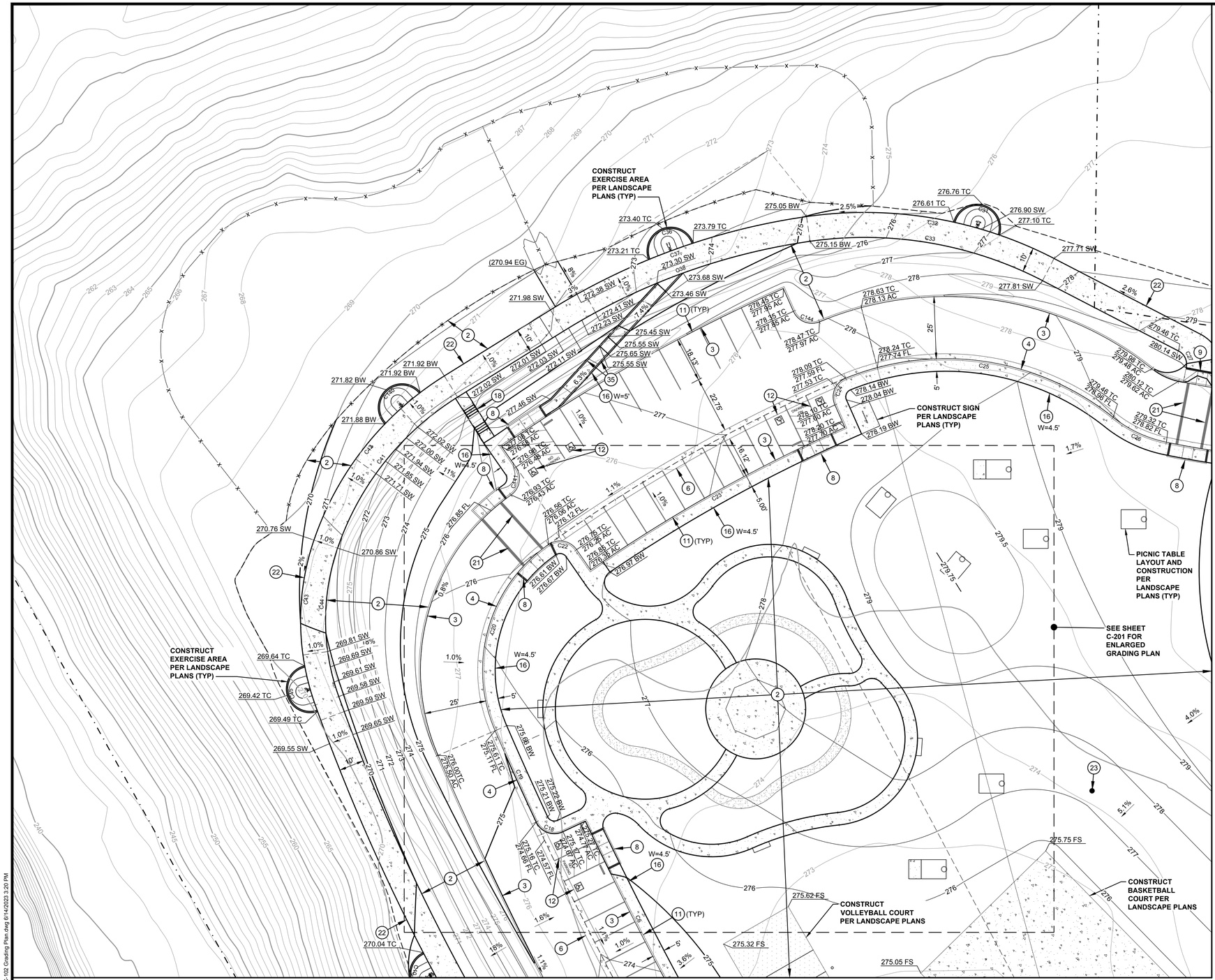
TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
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CITY OF LA HABRA - VISTA GRANDE PARK

GRADING PLAN

DESIGNED BY :	G.E.S.	FILE : C-101 Grading Plan.dwg			
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN		
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-101	SHEET 4 OF 89	
APPROVED BY :	G.E.S.	DATE : 06-2023			

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DATE OF TOPOGRAPHY: APRIL 18, 2019

0 10 20 40

GRAPHIC SCALE:1"= 20'

CONSTRUCTION NOTES

2. CUT OR FILL TO GRADES SHOWN
3. CONSTRUCT A1-6 (150) CURB PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 120-3
4. CONSTRUCT A2-6 (150) CURB AND GUTTER PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 120-3
6. CONSTRUCT LONGITUDINAL GUTTER PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 122-3
8. CONSTRUCT TYPE 3 CURB RAMP PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 111-5 AND PER — 4 / C-501
9. CONSTRUCT TYPE 4 CURB RAMP PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 111-5 AND PER — 5 / C-501
11. CONSTRUCT PARKING STALL PER — 3 / C-501
12. CONSTRUCT ACCESSIBLE PARKING STALL AND SIGNAGE PER — 2 / C-501
16. CONSTRUCT 4" THICK CONCRETE SIDEWALK; WIDTH PER PLAN
18. CONSTRUCT STAIRS AND WALKWAY PER — 1 / C-505
21. CONSTRUCT 10" WIDE WHITE STRIPE
22. CONSTRUCT CONCRETE WALKING PATH PER SHEETS L-101 AND L-102
23. CONSTRUCT SETTLEMENT MONUMENT PER — 2 / C-502
35. INSTALL HANDRAILS PER — 9 / C-501

LEGEND

- APPROXIMATE LIMIT OF PROPERTY LINE
- LIMIT OF GRADING / DAYLIGHT
- CONCRETE WALK
- AC PAVEMENT ROAD
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- LIMIT OF REFUSE
- FLOWLINE
- W — PROPOSED WATER LINE
- W — EXISTING WATER LINE
- SS — EXISTING SEWER LINE
- PCC
- SURVEY CONTROL POINT

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C6	129.35'	1437.00'	5°09'27"
C18	12.61'	8.00'	90°19'00"
C19	40.11'	1455.00'	1°34'46"
C20	83.99'	61.00'	78°53'18"
C22	12.55'	8.00'	89°51'17"
C23	117.00'	621.50'	10°47'10"
C24	12.82'	8.00'	91°50'20"
C25	113.41'	107.00'	60°43'38"
C26	23.79'	50.00'	27°15'57"
C27	7.95'	6.01'	75°48'13"
C31	30.39'	9.50'	183°17'57"

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C32	102.15'	165.00'	35°28'15"
C33	95.96'	155.00'	35°28'15"
C36	30.19'	9.50'	182°03'15"
C37	109.94'	265.00'	23°46'09"
C38	105.79'	255.00'	23°46'09"
C41	78.75'	115.00'	39°14'07"
C42	85.60'	125.00'	39°14'17"
C43	67.31'	100.00'	38°34'06"
C44	60.58'	90.00'	38°34'06"
C45	30.71'	9.50'	185°14'45"
C46	18.89'	15.00'	72°09'26"

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C140	30.57'	9.50'	184°21'20"
C141	12.47'	8.00'	89°18'28"
C144	12.38'	8.00'	88°41'30"

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

NO.	NAME	REVISION DESCRIPTION	DATE

TETRA TECH
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TEL 909.860.7777 FAX 909.860.8017

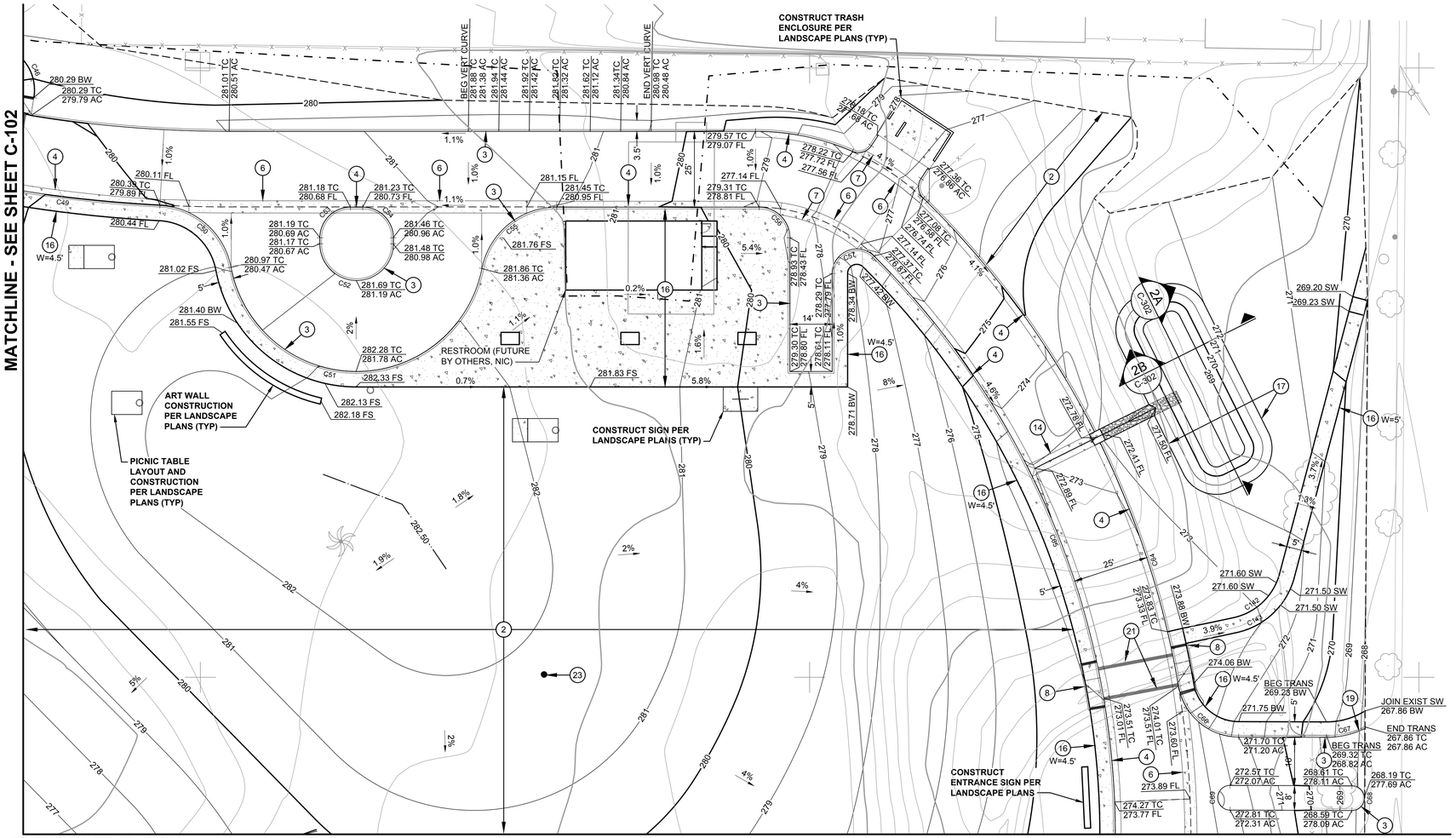
REGISTERED PROFESSIONAL ENGINEER GREG EDWIN SAUL 87500 CIVIL STATE OF CALIFORNIA

CITY OF LA HABRA - VISTA GRANDE PARK

GRADING PLAN

DESIGNED BY :	G.E.S.	FILE : C-102 Grading Plan.dwg	
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-102
APPROVED BY :	G.E.S.	DATE : 06-2023	SHEET 5 OF 89

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0 3 6 12

GRAPHIC SCALE:1"= 6'

0 10 20 40

GRAPHIC SCALE:1"= 20'

CONSTRUCTION NOTES

2. CUT OR FILL TO GRADES SHOWN
3. CONSTRUCT A1-6 (150) CURB PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 120-3
4. CONSTRUCT A2-6 (150) CURB AND GUTTER PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 120-3
6. CONSTRUCT LONGITUDINAL GUTTER PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 122-3
7. CONSTRUCT DRIVEWAY PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 110-2
8. CONSTRUCT TYPE 3 CURB RAMP PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 111-5 AND PER — 4 C-501 — 3 C-502
14. CONSTRUCT CROSS GUTTER PER — 3 C-502
16. CONSTRUCT 4" THICK CONCRETE SIDEWALK; WIDTH PER PLAN
17. CONSTRUCT BASIN PER — 1 C-503
19. CONSTRUCT 6" TO 0" CURB TRANSITION
21. CONSTRUCT 10" WIDE WHITE STRIPE
23. CONSTRUCT SETTLEMENT MONUMENT PER — 2 C-502

LEGEND

- APPROXIMATE LIMIT OF PROPERTY LINE
- LIMIT OF GRADING / DAYLIGHT
- CONCRETE WALK
- AC PAVEMENT ROAD
- 10 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 10 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- LIMIT OF REFUSE
- FLOWLINE
- W PROPOSED WATER LINE
- W EXISTING WATER LINE
- SS EXISTING SEWER LINE
- PCC
- SURVEY CONTROL POINT

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C46	18.89'	15.00'	72°09'26"
C49	63.66'	433.00'	8°25'23"
C50	33.30'	25.00'	76°19'22"
C51	115.90'	42.00'	158°06'29"
C52	37.70'	12.00'	180°00'00"
C53	15.71'	10.00'	90°00'14"
C54	15.71'	10.00'	89°59'46"
C55	34.37'	25.00'	78°46'47"
C56	15.71'	10.00'	90°00'00"
C57	18.81'	8.00'	134°45'02"

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C64	84.27'	292.50'	16°30'23"
C65	223.41'	267.50'	47°51'08"
C66	28.00'	20.00'	80°12'49"
C67	12.95'	28.75'	25°48'28"
C68	12.57'	4.00'	180°00'00"
C69	12.57'	4.00'	180°00'00"
C142	22.03'	20.00'	63°06'52"
C143	27.54'	25.00'	63°06'52"

DATE OF TOPOGRAPHY: APRIL 18, 2019

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

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NO.	NAME	REVISION DESCRIPTION	DATE

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21700 Copley Drive, Suite 200
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TEL 909.860.7777 FAX 909.860.8017

REGISTERED PROFESSIONAL ENGINEER GREG EDWIN SAUL 26500 CIVIL STATE OF CALIFORNIA

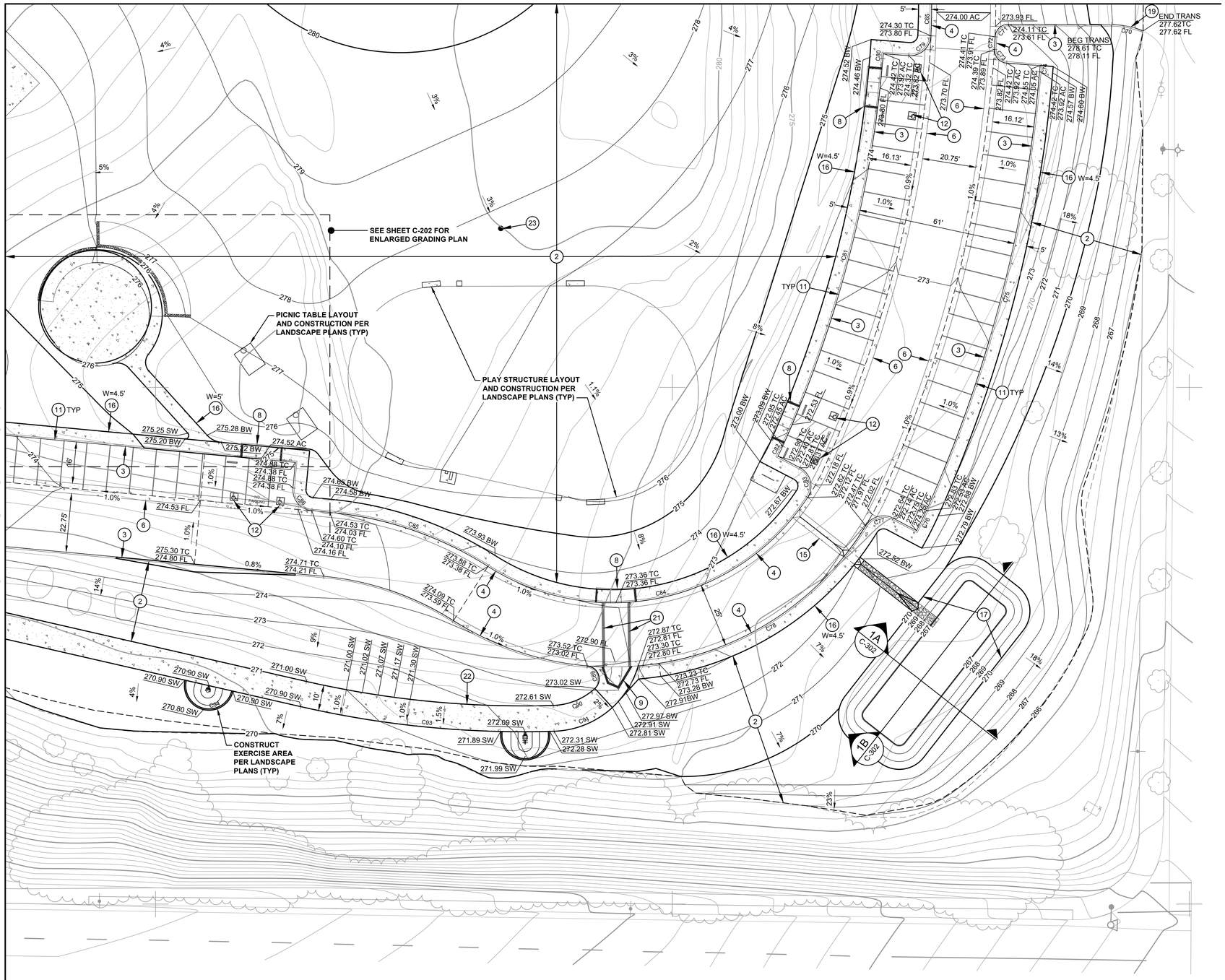
CITY OF LA HABRA - VISTA GRANDE PARK

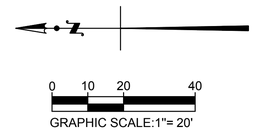
GRADING PLAN

DESIGNED BY :	G.E.S.	FILE : C-103 Grading Plan.dwg	
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-103
APPROVED BY :	G.E.S.	DATE : 06-2023	SHEET 6 OF 89

MATCHLINE - SEE SHEET C-103

MATCHLINE - SEE SHEET C-101





CONSTRUCTION NOTES

2. CUT OR FILL TO GRADES SHOWN
3. CONSTRUCT A1-6 (150) CURB PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 120-3
4. CONSTRUCT A2-6 (150) CURB AND GUTTER PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 120-3
6. CONSTRUCT LONGITUDINAL GUTTER PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 122-3
8. CONSTRUCT TYPE 3 CURB RAMP PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 111-5 AND PER 4 C-501
9. CONSTRUCT TYPE 4 CURB RAMP PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, STANDARD PLAN 111-5 AND PER 5 C-501
11. CONSTRUCT PARKING STALL PER 3 C-501
12. CONSTRUCT ACCESSIBLE PARKING STALL AND SIGNAGE PER 2 C-501
15. CONSTRUCT CROSS GUTTER PER 4 C-502
16. CONSTRUCT 4" THICK CONCRETE SIDEWALK; WIDTH PER PLAN
17. CONSTRUCT BASIN PER 1 C-503
19. CONSTRUCT 6" TO 0" CURB TRANSITION
21. CONSTRUCT 10" WIDE WHITE STRIPE
22. CONSTRUCT CONCRETE WALKING PATH PER SHEETS L-101 AND L-102
23. CONSTRUCT SETTLEMENT MONUMENT PER 2 C-502

LEGEND

- APPROXIMATE LIMIT OF PROPERTY LINE
- LIMIT OF GRADING / DAYLIGHT
- CONCRETE WALK
- AC PAVEMENT ROAD
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- LIMIT OF REFUSE
- FLOWLINE
- PCC
- SURVEY CONTROL POINT

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C65	223.41'	267.50'	47°51'08"
C70	12.48'	34.30'	20°51'11"
C71	7.65'	5.00'	87°42'40"
C72	4.83'	292.50'	0°56'48"
C73	7.77'	4.98'	89°28'31"
C74	2.42'	310.50'	0°26'49"
C75	176.24'	523.00'	19°18'28"
C76	8.72'	133.00'	3°45'24"
C77	12.05'	8.00'	86°16'15"
C78	107.41'	115.00'	53°30'46"

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C79	12.81'	8.00'	91°46'01"
C80	1.95'	249.50'	0°26'49"
C81	155.69'	462.00'	19°18'28"
C82	4.36'	72.00'	3°28'16"
C83	13.35'	8.00'	95°35'55"
C84	140.20'	90.00'	89°15'23"
C85	65.28'	138.00'	27°06'16"
C86	12.57'	8.00'	90°00'00"
C89	9.05'	5.00'	103°44'07"
C90	17.76'	25.00'	40°42'20"

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C91	24.87'	35.00'	40°42'20"
C93	98.74'	385.00'	14°41'38"
C94	29.85'	9.50'	180°00'00"

DATE OF TOPOGRAPHY: APRIL 18, 2019

NOT FOR CONSTRUCTION
FOR BIDDING PURPOSES - NO

NO.	NAME	REVISION DESCRIPTION	DATE

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

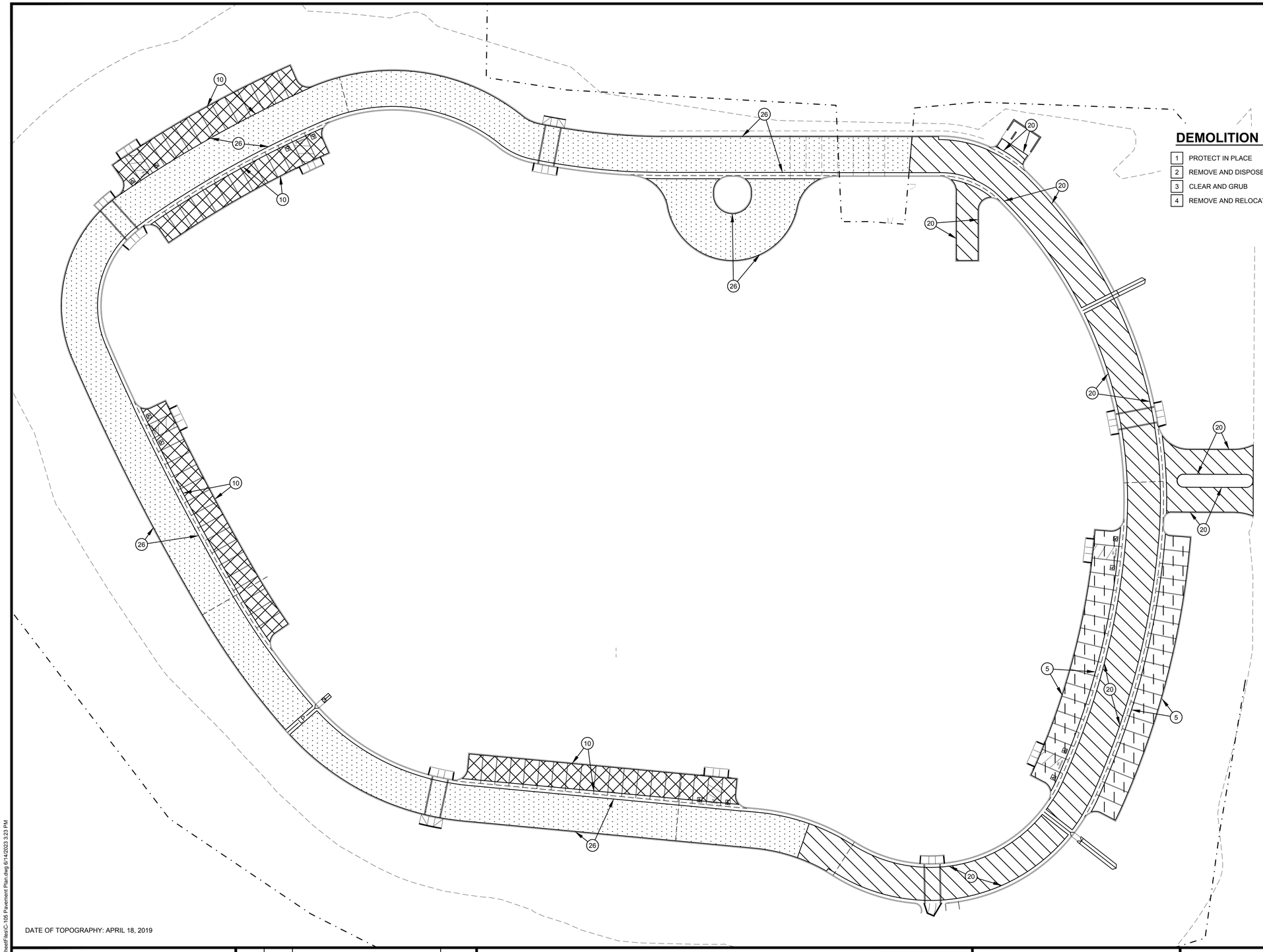
REGISTERED PROFESSIONAL ENGINEER GREG EDWIN SAUL 80600 CIVIL STATE OF CALIFORNIA

CITY OF LA HABRA - VISTA GRANDE PARK

GRADING PLAN

DESIGNED BY :	G.E.S.	FILE : C-104 Grading Plan.dwg	
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-104
APPROVED BY :	G.E.S.	DATE : 06-2023	SHEET 7 OF 89

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DEMOLITION NOTES

1. PROTECT IN PLACE
2. REMOVE AND DISPOSE
3. CLEAR AND GRUB
4. REMOVE AND RELOCATE

CONSTRUCTION NOTES

5. CONSTRUCT 3" AC OVER 5.5" CAB - STRUCTURAL SUBGRADE PER 1 / C-501
10. CONSTRUCT 3" AC OVER 5.5" CAB - STRUCTURAL SUBGRADE PER 8 / C-501
20. CONSTRUCT 3.5" AC OVER 9" CAB - STRUCTURAL SUBGRADE PER 1 / C-501
26. CONSTRUCT 3.5" AC OVER 9" CAB - STRUCTURAL SUBGRADE PER 8 / C-501

0 25 50 100

GRAPHIC SCALE:1"= 50'

LEGEND

- APPROXIMATE LIMIT OF PROPERTY LINE
- LIMIT OF GRADING / DAYLIGHT
- CONCRETE WALK
- AC PAVEMENT ROAD
- 10 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 10 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- LIMIT OF REFUSE
- FLOWLINE
- W PROPOSED WATER LINE
- W EXISTING WATER LINE
- SS EXISTING SEWER LINE
- UE EXISTING UNDERGROUND ELECTRICAL
- PAVED AC ROAD
- PAVED AC ROAD
- PAVED AC ROAD
- PAVED AC ROAD

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

NO.	NAME	REVISION DESCRIPTION	DATE

CITY OF LA HABRA - A CARING COMMUNITY - EST. 1925

TETRA TECH
21700 Copley Drive, Suite 200
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TEL 909.860.7777 FAX 909.860.8017

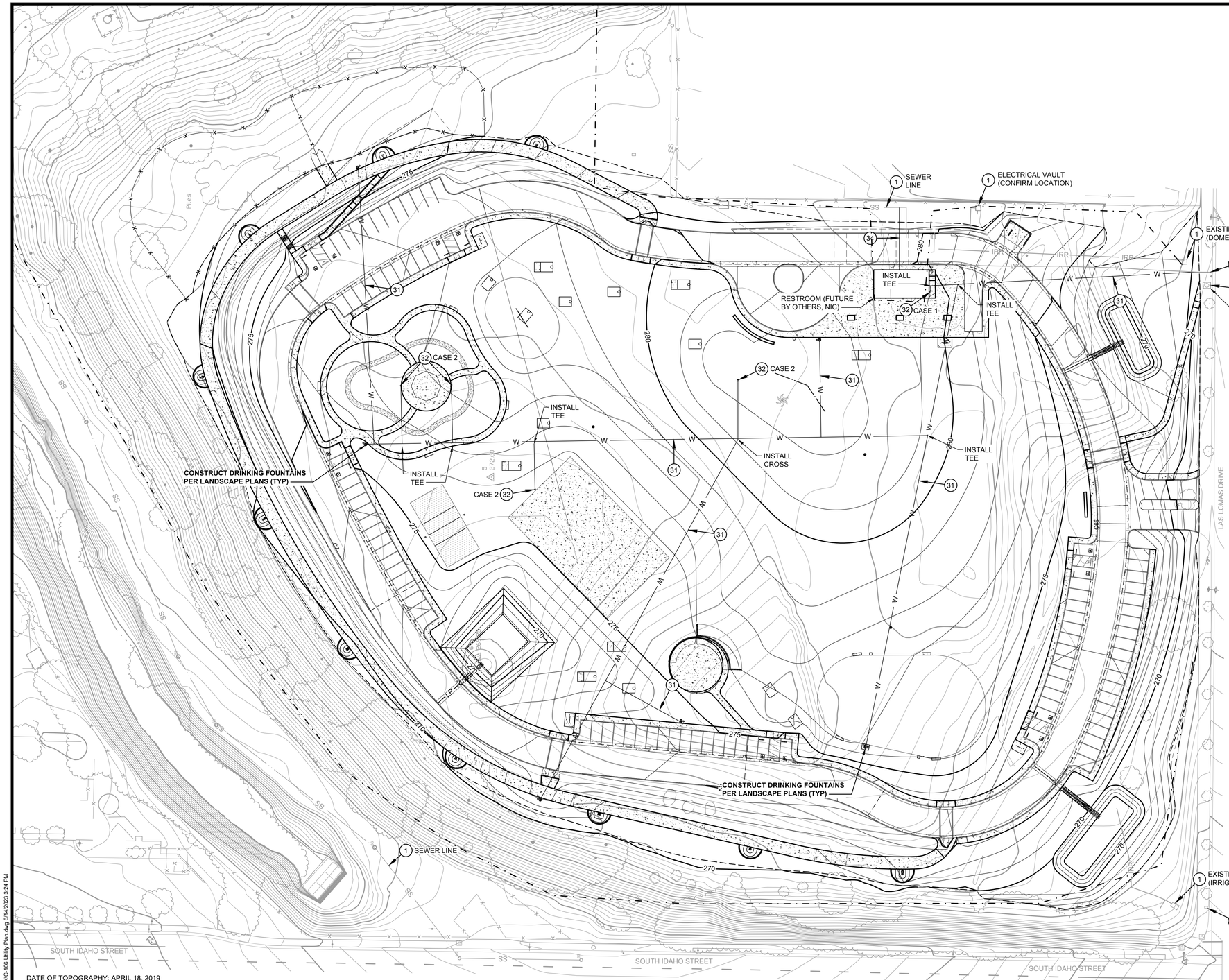
REGISTERED PROFESSIONAL ENGINEER - GREG EDWIN SAUL - 20500 - CIVIL - STATE OF CALIFORNIA

CITY OF LA HABRA - VISTA GRANDE PARK

PAVEMENT PLAN

DESIGNED BY :	G.E.S.	FILE : C-105 Pavement Plan.dwg			
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN		
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-105	SHEET 8 OF 89	
APPROVED BY :	G.E.S.	DATE : 06-2023			

P:\La Habra\Vista Grande Park\CAD\SheetFiles\C- 105 Pavement Plan.dwg 6/14/2023 3:23 PM



0 20 40 80

GRAPHIC SCALE:1"= 40'

CONSTRUCTION NOTES

1. PROTECT IN PLACE
31. INSTALL 2" SCH 40 PVC WATER LINE PER 6/C-501
32. INSTALL HOSE BIBB PER 7/C-501
34. INSTALL 6" SEWER LATERAL PER 3/C-504

LEGEND

- APPROXIMATE LIMIT OF PROPERTY LINE
- LIMIT OF GRADING / DAYLIGHT
- CONCRETE WALK
- AC PAVEMENT ROAD
- 10 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 10 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- LIMIT OF REFUSE
- FLOWLINE
- W PROPOSED WATER LINE
- W EXISTING WATER LINE
- SS EXISTING SEWER LINE
- PCC
- SURVEY CONTROL POINT

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

NO.	NAME	REVISION DESCRIPTION	DATE

TETRA TECH
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TEL 909.860.7777 FAX 909.860.8017

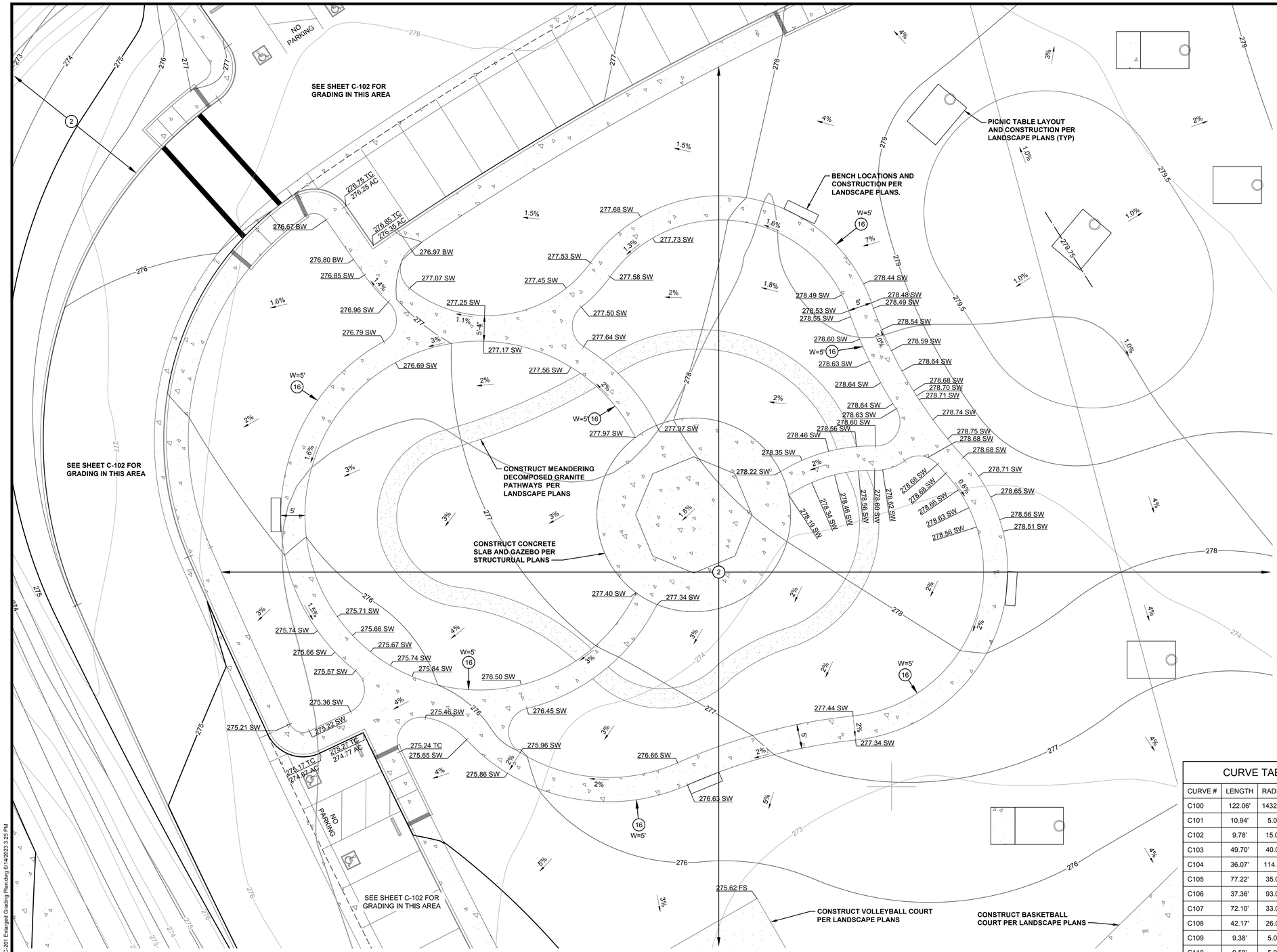
REGISTERED PROFESSIONAL ENGINEER GREG EDWIN SAUL 56600 CIVIL STATE OF CALIFORNIA

CITY OF LA HABRA - VISTA GRANDE PARK

UTILITY PLAN

DESIGNED BY :	G.E.S.	FILE : C-106 Utility Plan.dwg			
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN		
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-106	SHEET 9 OF 89	
APPROVED BY :	G.E.S.	DATE : 06-2023			

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DATE OF TOPOGRAPHY: APRIL 18, 2019

0 5 10 20

GRAPHIC SCALE:1"= 10'

CONSTRUCTION NOTES

(2) CUT OR FILL TO GRADES SHOWN

(16) CONSTRUCT 4" THICK CONCRETE SIDEWALK; WIDTH PER PLAN

LEGEND

- APPROXIMATE LIMIT OF PROPERTY LINE
- LIMIT OF GRADING / DAYLIGHT
- CONCRETE WALK
- AC PAVEMENT ROAD
- 10 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 10 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- LIMIT OF REFUSE
- FLOWLINE
- W PROPOSED WATER LINE
- W EXISTING WATER LINE
- SS EXISTING SEWER LINE
- PCC

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C100	122.06'	1432.00'	4°53'02"
C101	10.94'	5.00'	125°21'33"
C102	9.78'	15.00'	37°22'22"
C103	49.70'	40.00'	71°11'19"
C104	36.07'	114.00'	18°07'34"
C105	77.22'	35.00'	126°24'24"
C106	37.36'	93.00'	23°01'10"
C107	72.10'	33.00'	125°11'26"
C108	42.17'	26.00'	92°56'25"
C109	9.38'	5.00'	107°28'51"
C110	9.58'	5.00'	109°44'48"

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C111	7.48'	31.08'	13°47'55"
C112	4.70'	3.00'	89°51'17"
C113	77.10'	56.00'	78°53'17"
C114	4.73'	3.00'	90°19'00"
C115	10.13'	5.00'	116°03'09"
C116	80.58'	41.00'	112°36'17"
C117	193.03'	36.00'	307°13'13"
C118	11.76'	5.00'	134°42'58"
C119	33.88'	35.00'	55°27'30"
C120	37.64'	119.00'	18°07'30"
C121	66.19'	30.00'	126°24'24"

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C122	7.49'	5.00'	85°49'27"
C123	6.61'	10.00'	37°52'36"
C124	18.77'	31.00'	34°41'45"
C125	20.53'	36.00'	32°40'22"
C126	10.79'	5.00'	123°42'04"
C127	22.55'	98.00'	13°10'52"
C128	61.19'	28.00'	125°12'32"
C129	8.63'	31.00'	15°57'00"
C130	9.58'	5.00'	109°44'48"
C131	22.41'	41.00'	31°18'56"
C139	115.10'	616.50'	10°41'50"

NO.	NAME	REVISION DESCRIPTION	DATE

TETRA TECH
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REGISTERED PROFESSIONAL ENGINEER GREG EDWIN SAUL 68600 CIVIL STATE OF CALIFORNIA

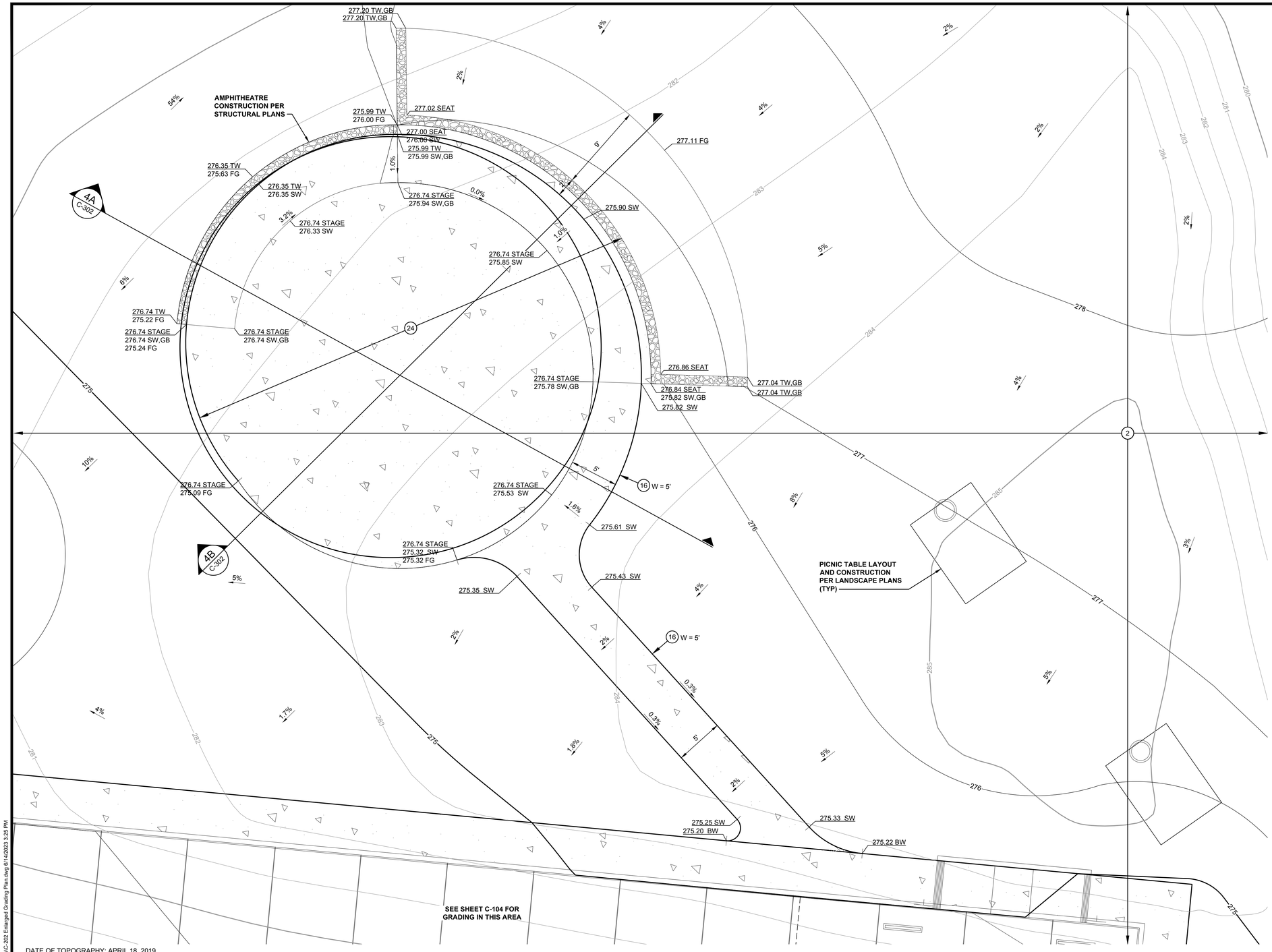
CITY OF LA HABRA - VISTA GRANDE PARK

ENLARGED GRADING PLAN

DESIGNED BY :	G.E.S.	FILE : C-201 Enlarged Grading Plan.dwg	
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-201
APPROVED BY :	G.E.S.	DATE : 06-2023	SHEET 10 OF 89

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

P:\La Habra\Vista Grande Park\CAD\SheetFiles\C-201 Enlarged Grading Plan.dwg 6/14/2023 3:25 PM



0 2.5 5 10

GRAPHIC SCALE:1"= 5'

CONSTRUCTION NOTES

(2) CUT OR FILL TO GRADES SHOWN

(16) CONSTRUCT 4" THICK CONCRETE SIDEWALK; WIDTH PER PLAN

(24) CONSTRUCT STAGE, RAMPS, WALLS AND APPURTENANCES PER STRUCTURAL PLANS

LEGEND

- APPROXIMATE LIMIT OF PROPERTY LINE
- LIMIT OF GRADING / DAYLIGHT
- CONCRETE WALK
- AC PAVEMENT ROAD
- 10 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 10 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- LIMIT OF REFUSE
- FLOWLINE
- W PROPOSED WATER LINE
- W EXISTING WATER LINE
- SS EXISTING SEWER LINE
- PCC
- SURVEY CONTROL POINT

CURVE TABLE			
CURVE #	LENGTH	RADIUS	DELTA
C132	3.20'	1.33'	137°31'08"
C133	6.80'	6.00'	64°58'16"
C134	49.92'	21.58'	132°31'01"
C135	56.23'	25.00'	128°52'25"
C136	7.02'	5.00'	80°24'21"
C137	6.30'	8.50'	42°28'52"

NOT FOR CONSTRUCTION

FOR BIDDING PURPOSES - NO

NO.	NAME	REVISION DESCRIPTION	DATE

A CARING COMMUNITY EST. 1925 CITY OF LA HABRA

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

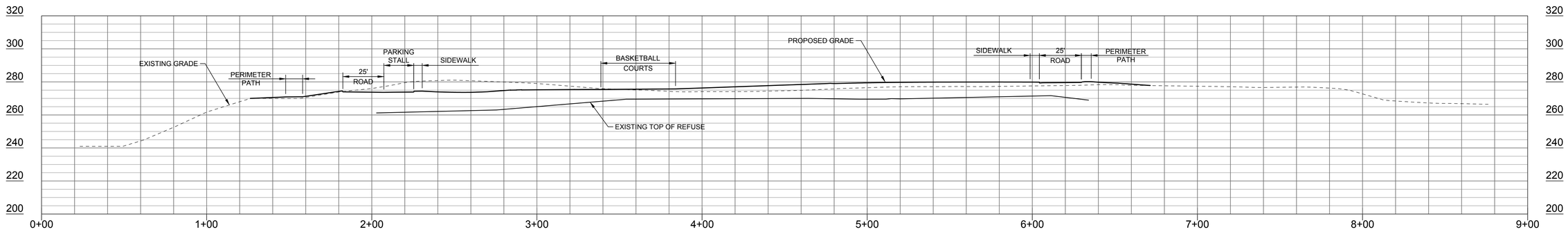
REGISTERED PROFESSIONAL ENGINEER GREG EDWIN SAUL 20580 CIVIL STATE OF CALIFORNIA

CITY OF LA HABRA - VISTA GRANDE PARK

ENLARGED GRADING PLAN

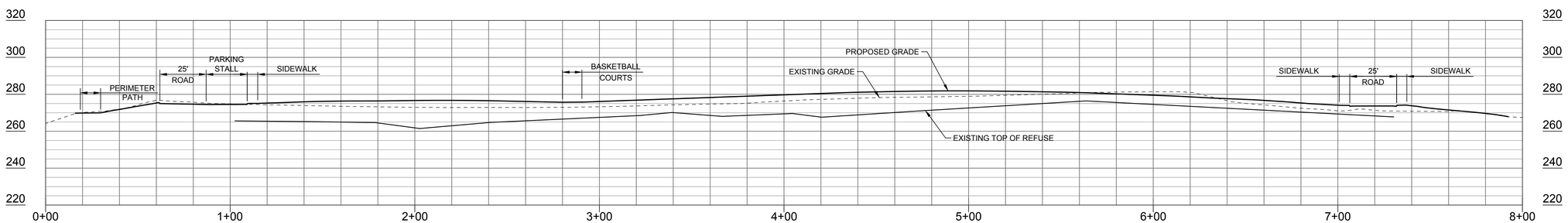
DESIGNED BY :	G.E.S.	FILE : C-202 Enlarged Grading Plan.dwg			
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN		
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-202	SHEET 11 OF 89	
APPROVED BY :	G.E.S.	DATE : 06-2023			

P:\La Habra\Vista Grande Park\CAD\SheetFiles\C-202 Enlarged Grading Plan.dwg 6/14/2023 3:25 PM



A C-100 **SECTION**

SCALE: Horizontal: 1"=30' Vertical: 1"=30'



B C-100 **SECTION**

SCALE: Horizontal: 1"=30' Vertical: 1"=30'

NO.	NAME	REVISION DESCRIPTION	DATE

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CIVIL
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CITY OF LA HABRA - VISTA GRANDE PARK

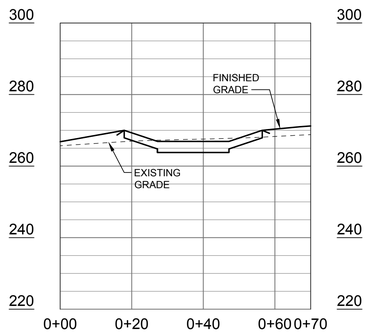
SECTIONS

DESIGNED BY :	G.E.S.	FILE : C-301 Sections.dwg			
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN		
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-301	SHEET 12 OF 89	
APPROVED BY :	G.E.S.	DATE : 06-2023			

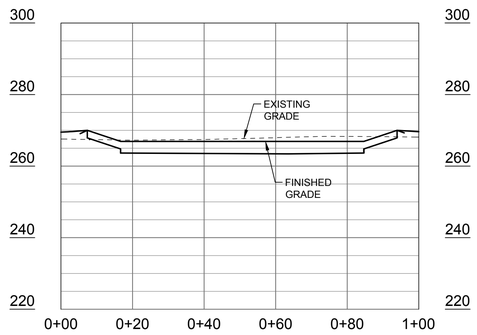
NOT FOR CONSTRUCTION

FOR BIDDING PURPOSES - NO

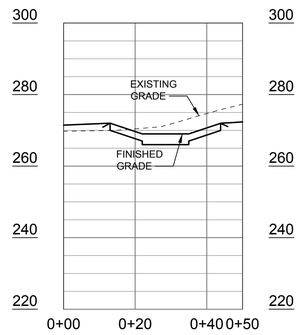
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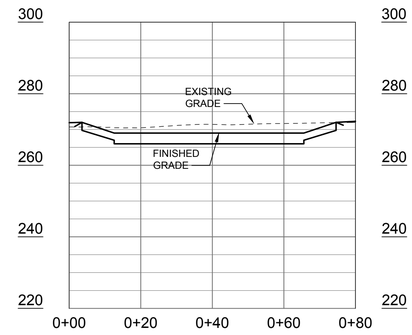
1A C-104 SECTION BASIN 1A
SCALE: 1" = 20'



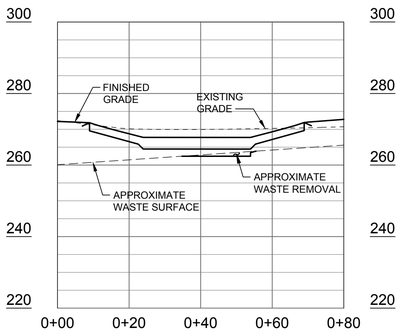
1B C-104 SECTION BASIN 1B
SCALE: 1" = 20'



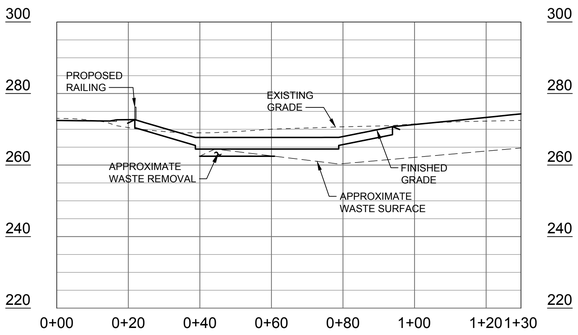
2A C-103 SECTION BASIN 2A
SCALE: 1" = 20'



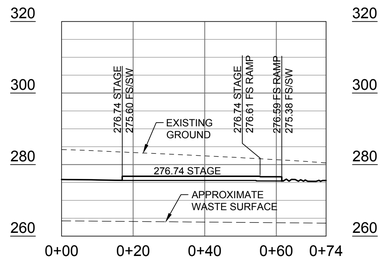
2B C-103 SECTION BASIN 2B
SCALE: 1" = 20'



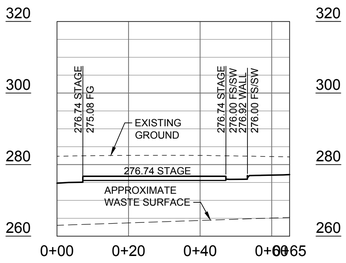
3A C-101 SECTION BASIN 3A
SCALE: 1" = 20'



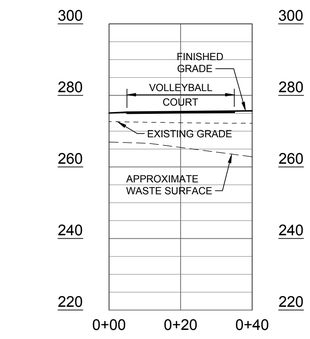
3B C-104 SECTION BASIN 3B
SCALE: 1" = 20'



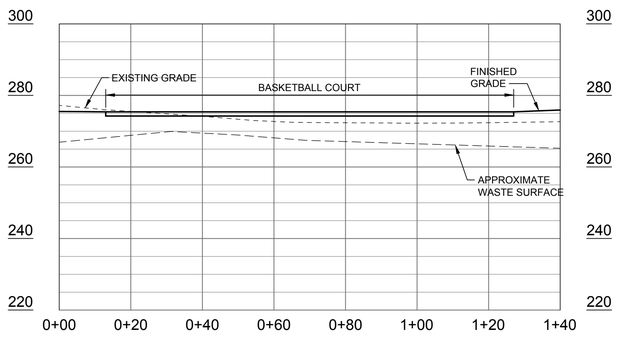
4A C-202 SECTION STAGE
SCALE: 1" = 20'



4B C-202 SECTION STAGE
SCALE: 1" = 20'



5 C-101 SECTION VOLLEYBALL COURT
SCALE: 1" = 20'



6 C-101 SECTION BASKETBALL COURT
SCALE: 1" = 20'

NO.	NAME	REVISION DESCRIPTION	DATE

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REGISTERED PROFESSIONAL ENGINEER
GREG EDWIN SAUL
90500
CIVIL
STATE OF CALIFORNIA

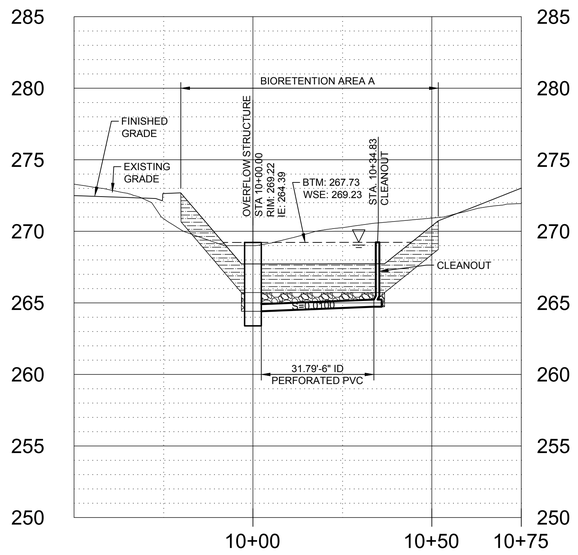
CITY OF LA HABRA - VISTA GRANDE PARK

SECTIONS

DESIGNED BY :	G.E.S.	FILE : C-302 Sections.dwg	
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-302
APPROVED BY :	G.E.S.	DATE : 06-2023	SHEET 13 OF 89

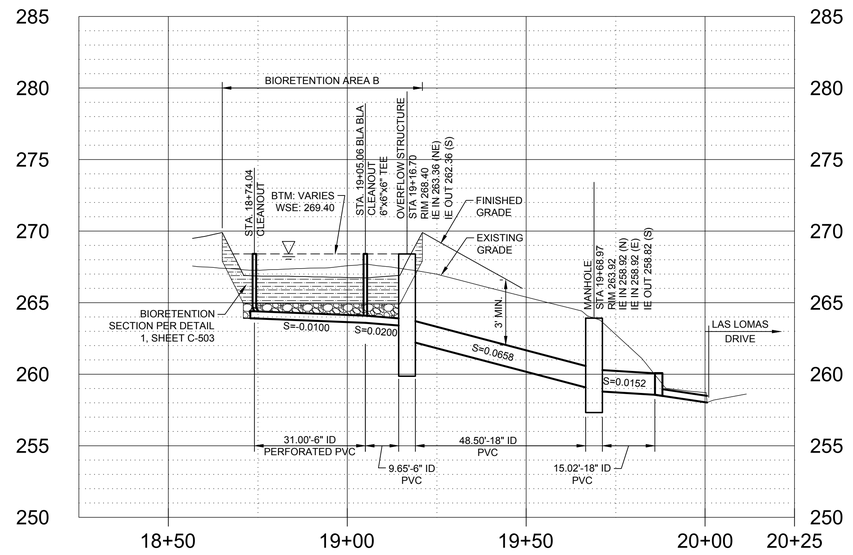
FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

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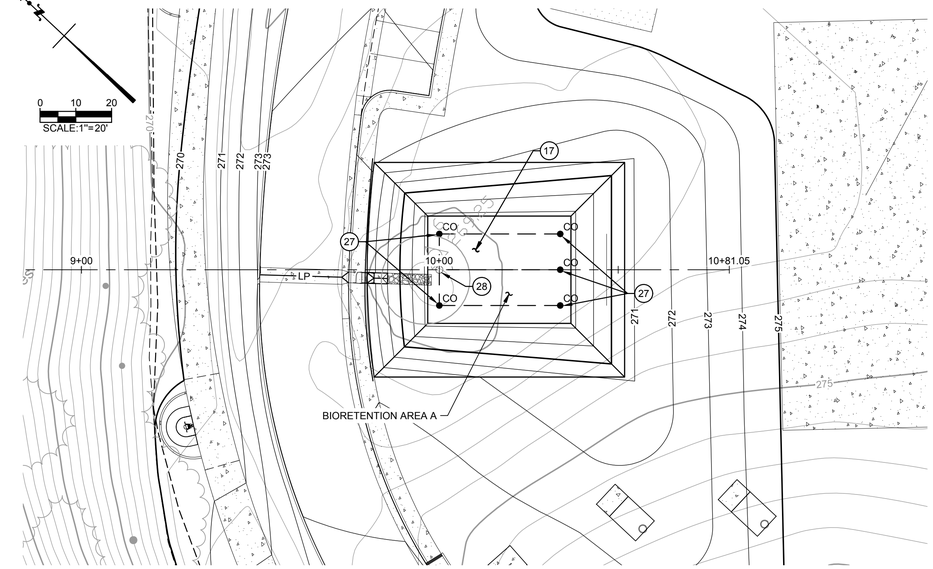
A PROFILE - STORM DRAIN LINE A

Horizontal: 1" = 20' Vertical: 1" = 5'

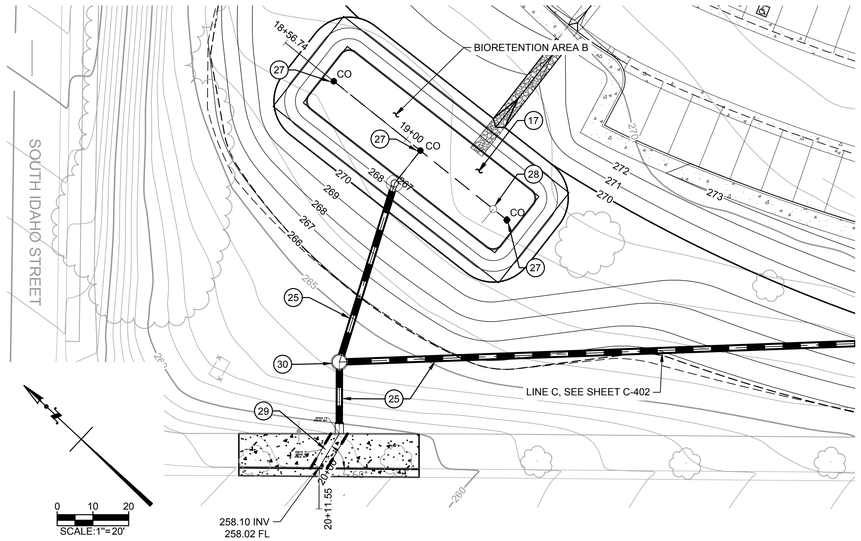


B PROFILE - STORM DRAIN LINE B

Horizontal: 1" = 20' Vertical: 1" = 5'



PLAN VIEW - STORM DRAIN LINE A



PLAN VIEW - STORM DRAIN LINE B

CONSTRUCTION NOTES

17 CONSTRUCT BIORETENTION BASIN PER 1 C-503
25 INSTALL 18" ID PVC PIPE PER 6 C-501
27 CONSTRUCT CLEANOUT PER 3 C-503
28 CONSTRUCT OVERFLOW STRUCTURE PER 1 C-504
29 CONSTRUCT SIDEWALK UNDERDRAIN PER 4 C-503
30 CONSTRUCT MANHOLE PER 4 C-505

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

NO.	NAME	REVISION DESCRIPTION	DATE

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

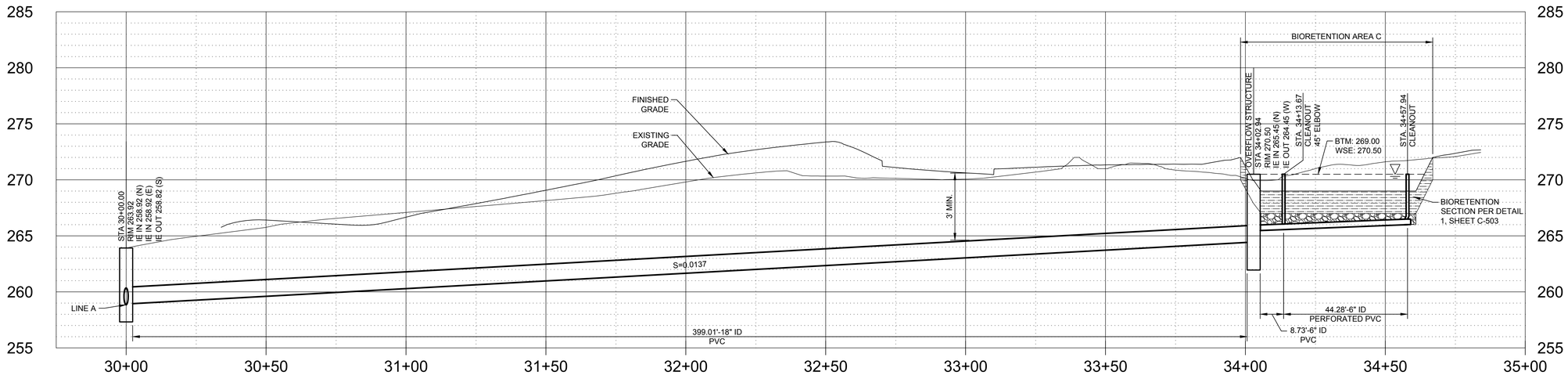
REGISTERED PROFESSIONAL ENGINEER GREG EDWIN SAUL 56600 CIVIL STATE OF CALIFORNIA

CITY OF LA HABRA - VISTA GRANDE PARK

STORM DRAIN PLAN AND PROFILE

DESIGNED BY :	C.Z.	FILE : C-401 Storm Drain Plan And Profile.dwg			
DRAWN BY :	A.R.	DATE : 06-2023	SCALE: AS SHOWN		
CHECKED BY :	C.Z.	DATE : 06-2023	C-401	SHEET 14 OF 89	
APPROVED BY :	G.E.S.	DATE : 06-2023			

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B
-

PROFILE - STORM DRAIN LINE C

Horizontal: 1" = 20' Vertical: 1" = 5'

PLAN VIEW - STORM DRAIN LINE C

CONSTRUCTION NOTES

17	CONSTRUCT BIORETENTION BASIN PER	1 / C-503
25	INSTALL 18" ID PVC PIPE PER	6 / C-501
27	CONSTRUCT CLEANOUT PER	3 / C-503
28	CONSTRUCT OVERFLOW STRUCTURE PER	1 / C-504

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

NO.	NAME	REVISION DESCRIPTION	DATE

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

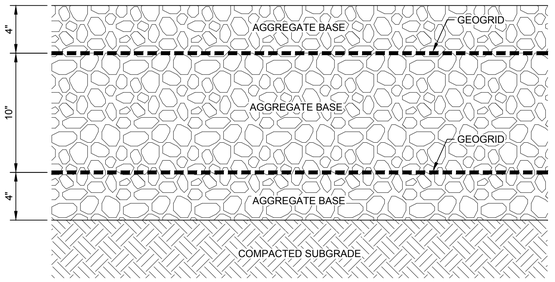
REGISTERED PROFESSIONAL ENGINEER
GREG EDWIN SAUL
No. 25500
CIVIL
STATE OF CALIFORNIA

CITY OF LA HABRA - VISTA GRANDE PARK

STORM DRAIN PLAN AND PROFILE

DESIGNED BY : C.Z.	FILE : C-402 Storm Drain Plan And Profile.dwg		
DRAWN BY : A.R.	DATE : 06-2023	SCALE: AS SHOWN	
CHECKED BY : C.Z.	DATE : 06-2023	C-402	SHEET 15 OF 89
APPROVED BY : G.E.S.	DATE : 06-2023		

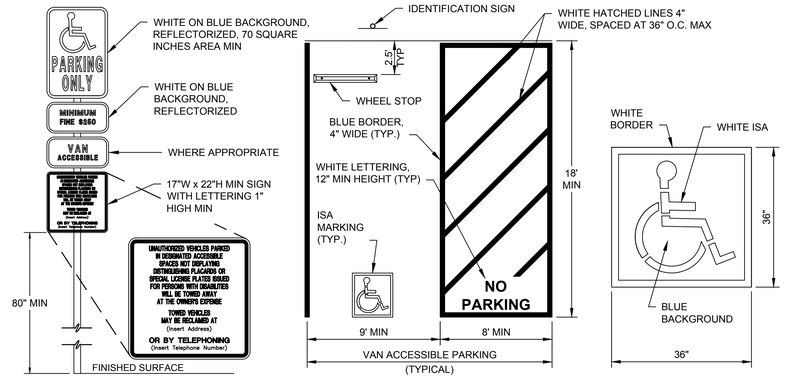
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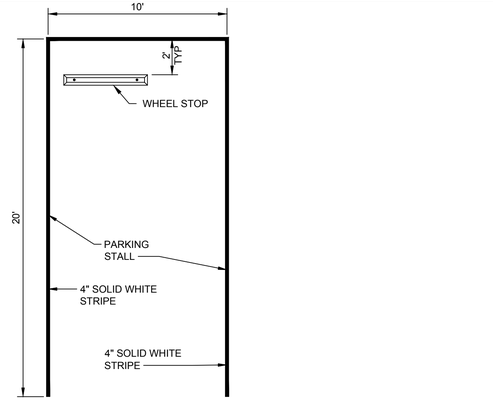
NOTE:

1. EXTEND STRUCTURAL SUBGRADE SECTION 5' MINIMUM BEYOND THE PERIMETER OF THE PAVEMENT, IN EACH DIRECTION

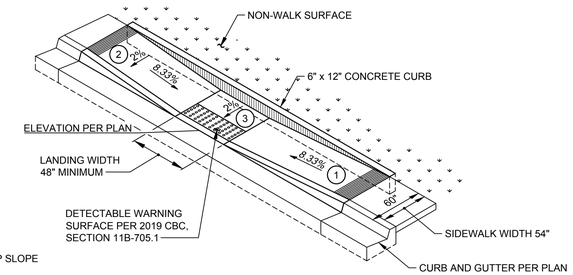
1	STRUCTURAL SUBGRADE CASE 1
NTS	REFERENCE SHEET:



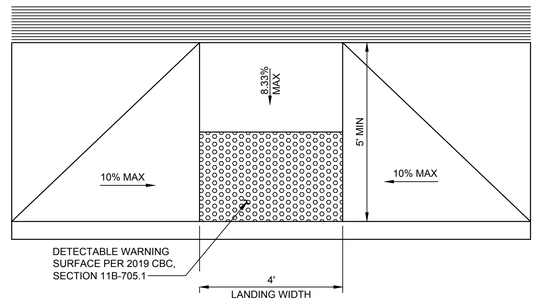
2	ACCESSIBLE PARKING STALL AND SIGNAGE
NTS	REFERENCE SHEET:



3	PARKING STALL
NTS	REFERENCE SHEET:



4	PARALLEL CURB RAMP
NTS	REFERENCE SHEET:



5	CURB RAMP
NTS	REFERENCE SHEET:

NOTES:

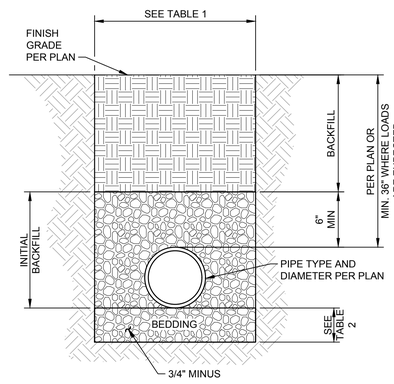
1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS," LATEST EDITION.
2. MEASURES SHALL BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: PER PROJECT SPECIFICATIONS.
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE 3/4" MINUS (SELECT NATIVE) IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED.
6. MINIMUM COVER: MINIMUM COVER IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, WHERE SHOWN, IS 12" FOR UP TO 48" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.
7. FOR 2"-12" PIPE, SAND MAY BE SUBSTITUTED FOR 3/4" MINUS BEDDING & BACKFILL WITHIN THE PIPE ZONE.

TABLE 1: TRENCH WIDTH

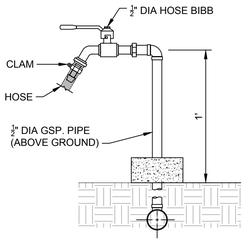
PIPE DIA.	MIN. WIDTH
1"-6"	18"
12"	36"
15"	39"
18"	39"
24"	48"
36"	64"
48"	72"
60"	84"

TABLE 2: BEDDING THICKNESS

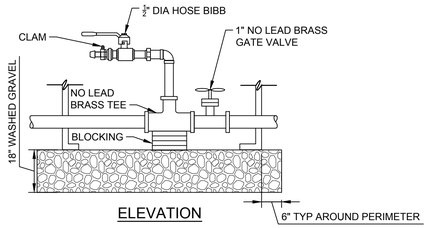
PIPE DIA.	THICKNESS
2"-6"	4"
12"-24"	4"
30"-60"	6"



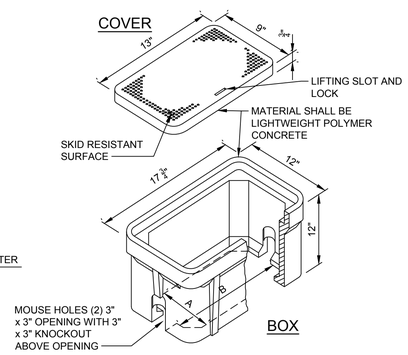
6	PIPE BEDDING AND TRENCHING
NTS	REFERENCE SHEET:



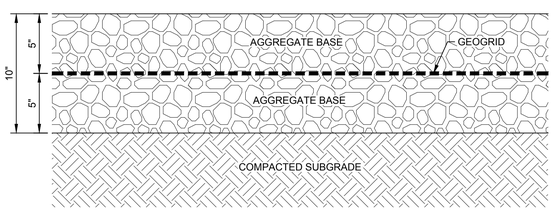
CASE 1



CASE 2



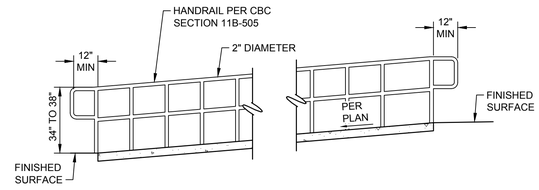
7	HOSE BIBB
NTS	REFERENCE SHEET:



NOTE:

1. EXTEND GEOGRID 5' MINIMUM BEYOND THE PERIMETER OF THE PAVEMENT, IN EACH DIRECTION

8	STRUCTURAL SUBGRADE CASE 2
NTS	REFERENCE SHEET:



ELEVATION - ADA HANDRAILING
NTS

9	HANDRAILING
NTS	REFERENCE SHEET:

NO.	NAME	REVISION DESCRIPTION	DATE

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

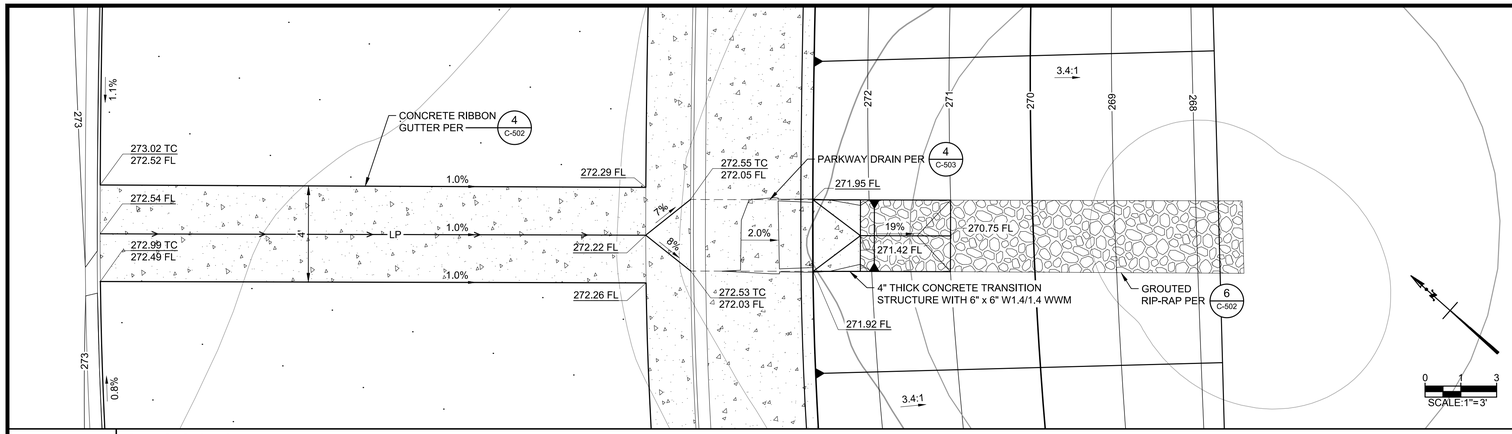
CITY OF LA HABRA - VISTA GRANDE PARK

DETAILS

DESIGNED BY : G.E.S.		FILE : C-501 Details.dwg	
DRAWN BY : A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN	
CHECKED BY : D.L.L. & N.G.P.	DATE : 06-2023	C-501	SHEET 16 OF 89
APPROVED BY : G.E.S.	DATE : 06-2023		

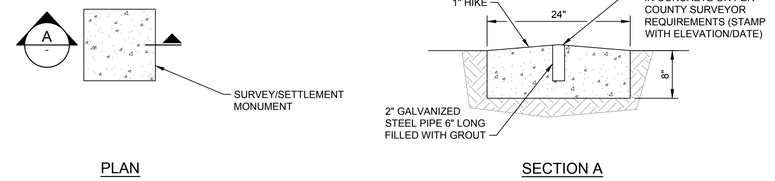
FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

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1 CROSS GUTTER

NTS | REFERENCE SHEET:

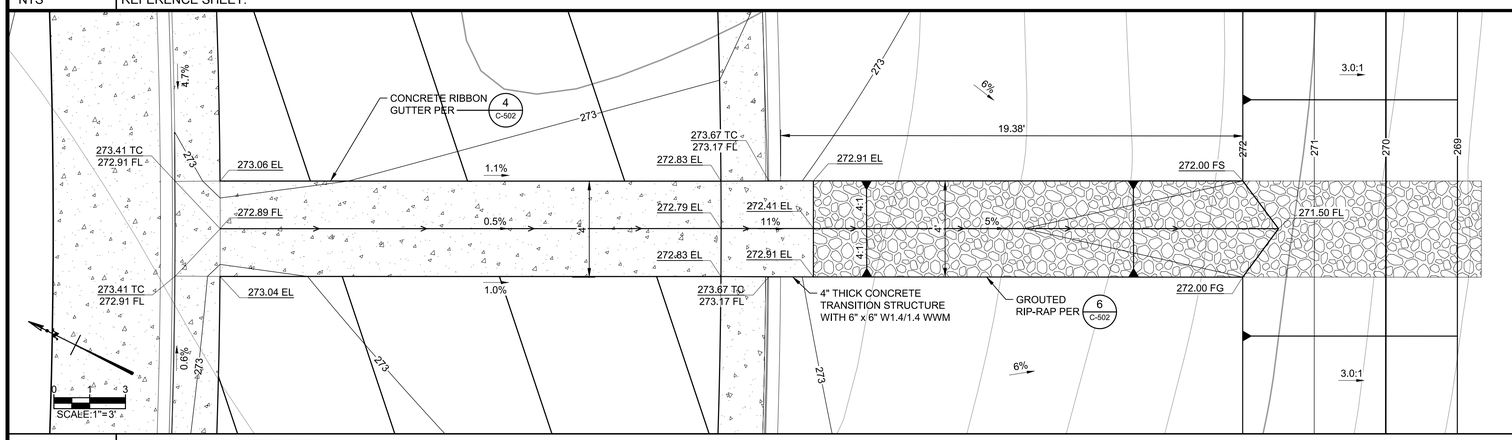


PLAN

SECTION A

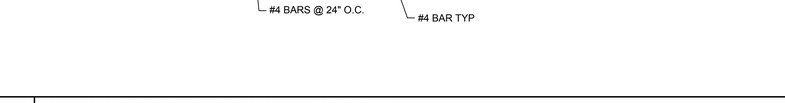
2 SETTLEMENT MONUMENT

NTS | REFERENCE SHEET:



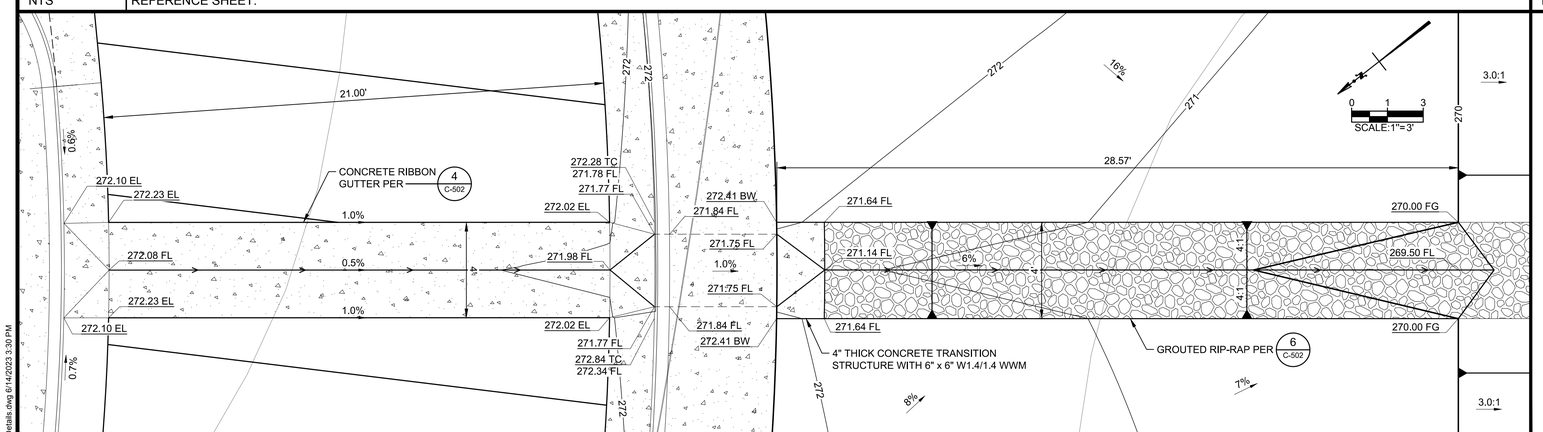
3 CROSS GUTTER

NTS | REFERENCE SHEET:



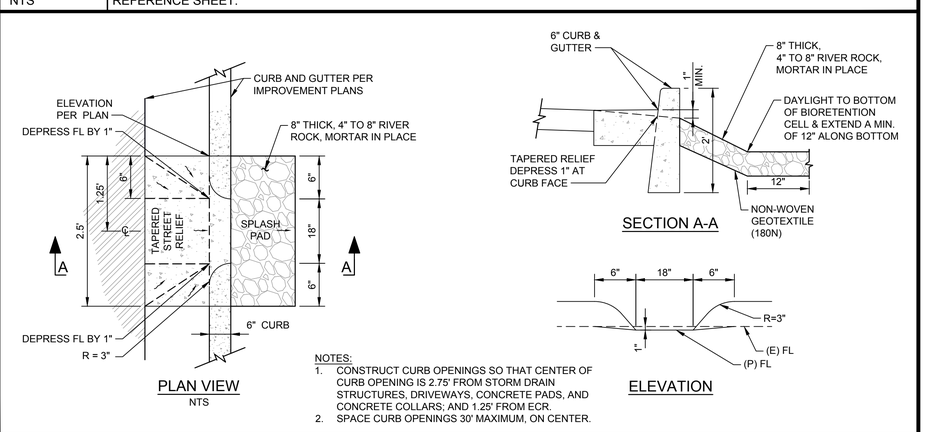
4 CONCRETE RIBBON GUTTER

NTS | REFERENCE SHEET:



5 CROSS GUTTER

NTS | REFERENCE SHEET:



6 GROUTED RIP-RAP

NTS | REFERENCE SHEET:

NO.	NAME	REVISION DESCRIPTION	DATE

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED PROFESSIONAL ENGINEER GREG EDWIN SAUL 20500 CIVIL STATE OF CALIFORNIA

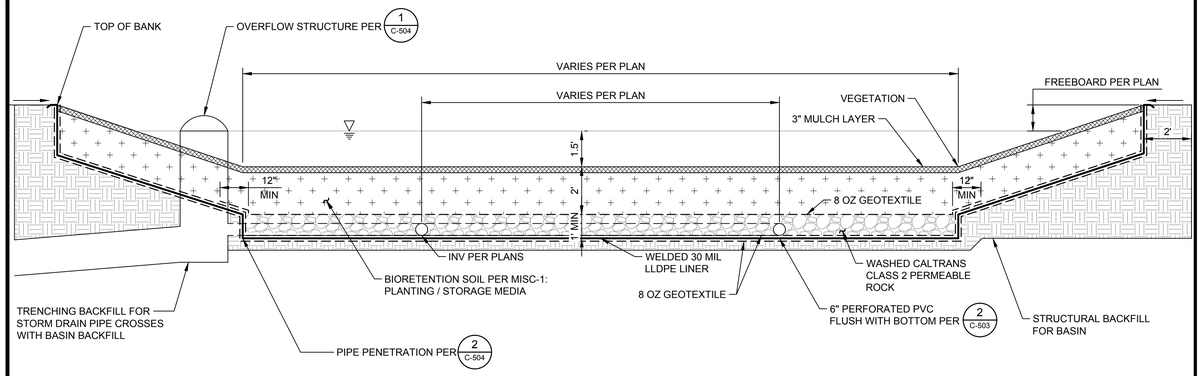
CITY OF LA HABRA - VISTA GRANDE PARK

DETAILS

DESIGNED BY :	G.E.S.	FILE : C-502 Details.dwg			
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN		
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-502	SHEET 17 OF 89	
APPROVED BY :	G.E.S.	DATE : 06-2023			

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

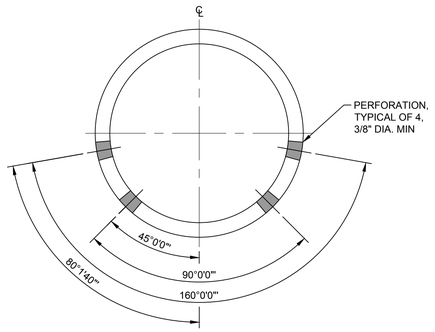
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NOTES:
1. BOTTOM WIDTH OF BIORETENTION CELLS PER GRADING PLAN.
2. SIDE SLOPES PER GRADING PLANS. MAXIMUM 3:1 SLOPE.
3. PIPE JOINTS ARE TO BE WATER TIGHT.
4. PERFORATED PVC UNDERDRAIN CONFIGURATIONS PER PLAN.
5. VEGETATION TO BE A MIX OF PURPLE THREE-AWN (ARISTAFA PURPUREA), GREY DAWN CREEPING WILD RYE (LEYMUS TRITICOIDS 'GREY DAWN'), AND TUFTED HAIRGRASS (DESCHAMPSIA CESPITOSA).

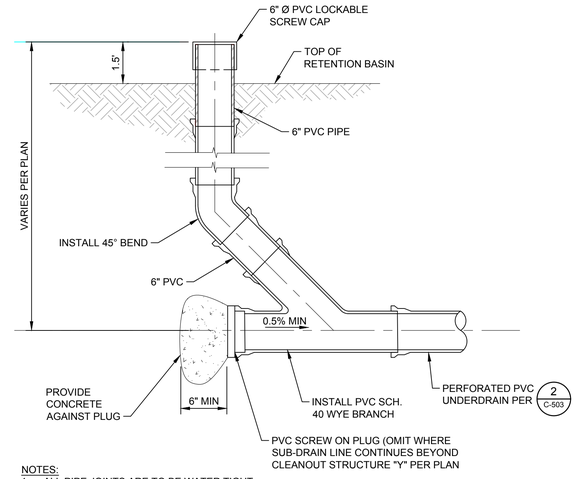
NOTE:
IF WASTE IS ENCOUNTERED DURING THE EXCAVATION, WASTE SHALL BE REMOVED TO A DEPTH OF 3.5' BELOW BASIN GRADE AND COVER SOILS BE PLACED IN ACCORDANCE WITH PLANS AND SPECIFICATIONS

1	BIORETENTION BASIN
NTS	REFERENCE SHEET:



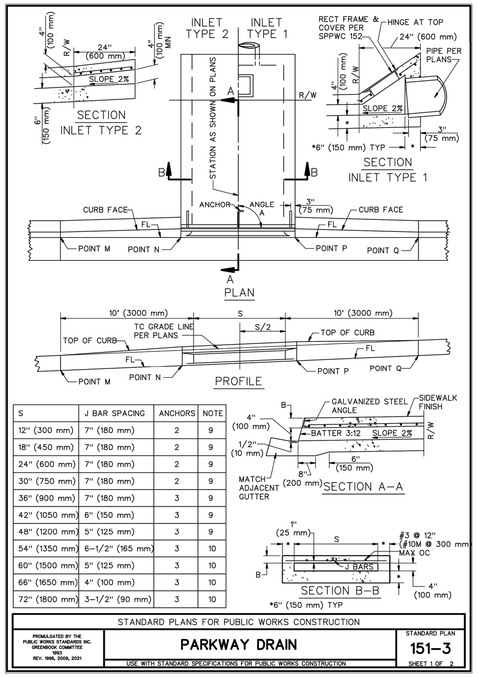
NOTES:
1. HOLES SHALL BE SPACED 5" MAX. ON CENTER DOWN THE LENGTH OF THE PIPE.
2. EACH ROW OF PERFORATIONS SHALL BE ARRANGED AS SHOWN IN THIS CROSS SECTION.
3. PVC PIPE AS PER SECTION 207-18 OF THE 2015 SSPWC "GREEN BOOK."
4. ALL PIPE JOINTS ARE TO BE WATER TIGHT
5. THE MAXIMUM SDR SHALL BE 35.

2	PERFORATED PVC PIPE
NTS	REFERENCE SHEET:



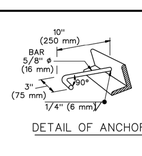
NOTES:
1. ALL PIPE JOINTS ARE TO BE WATER TIGHT

3	CLEANOUT
NTS	REFERENCE SHEET:



S	J BAR SPACING	ANCHORS	NOTE
12" (300 mm)	7" (180 mm)	2	9
18" (450 mm)	7" (180 mm)	2	9
24" (600 mm)	7" (180 mm)	2	9
30" (750 mm)	7" (180 mm)	2	9
36" (900 mm)	7" (180 mm)	3	9
42" (1050 mm)	6" (150 mm)	3	9
48" (1200 mm)	5" (125 mm)	3	9
54" (1350 mm)	6–1/2" (165 mm)	3	10
60" (1500 mm)	5" (125 mm)	3	10
66" (1650 mm)	4" (100 mm)	3	10
72" (1800 mm)	3–1/2" (90 mm)	3	10

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION		
PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1953 REV. 1998, 2009, 2021	PARKWAY DRAIN USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION	STANDARD PLAN 151–3 SHEET 1 OF 2

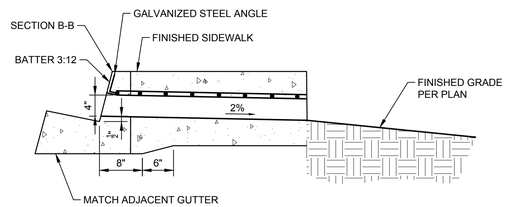


DETAIL OF ANCHOR

NOTES

1. FLOOR OF BOX SHALL BE TROWLED SMOOTH.
2. IF THE TOE OF SLOPE IS ALLOWED WITHIN THE R/W, INLET TYPE 1 BEGINS AT THE TOE RATHER THAN AT THE R/W LINE.
3. FOR OPEN DITCH (TYPE 2), THE 24" (600 mm) EXTENSION BEYOND THE R/W LINE IS NOT REQUIRED WHEN BACK OF WALK IS 24" (600 mm) OR MORE FROM THE R/W LINE; HOWEVER, THE PARKWAY DRAIN SHALL EXTEND TO THE R/W LINE IN ANY EVENT.
4. TOP OF INLET STRUCTURE (TYPE 1 & 2) SHALL BE FLUSH WITH ADJACENT SURFACE WHERE PRACTICAL.
5. A HEADED STEEL STUD 5/8" x 6–3/8" WITH A 1" HEAD (16 x 160 mm, 25 mm HEAD) ATTACHED BY A FULL PENETRATION BUTT WELD MAY BE USED AS AN ALTERNATE ANCHOR.
6. NORMAL CURB FACE AT POINT M AND Q. CURB FACE IS B + 5" (125 mm) AT POINT N AND P.
7. THE 3" (75 mm) LEG OF THE 5/8" (16 mm) DIA ANCHORS SHALL BE PARALLEL TO THE TOP OF SIDEWALK.
8. J BARS ARE #3 (#10M).
9. FOR S = 48" (1200 mm) AND LESS, B = 3" (75 mm). USE 2–1/2" x 2" x 3/8" (64 x 51 x 9.5 mm) GALVANIZED STEEL ANGLE.
10. FOR S = 54" (1350 mm) OR MORE, B = 4" (100 mm). USE 3–1/2" x 3" x 1/2" (89 x 76 x 12.7 mm) GALVANIZED STEEL ANGLE.
11. ANGLE A EQUALS 90° UNLESS OTHERWISE SPECIFIED.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION		
PARKWAY DRAIN		STANDARD PLAN 151–3 SHEET 2 OF 2



SECTION A-A
NTS

NOTE:
SECTION A-A REVISED TO DEPICT DRAINAGE TOWARDS ON-SITE BASIN INSTEAD OF TYPICAL DRAINAGE TOWARDS GUTTER.

NOTES:
1. FLOW VELOCITY IS 8.14 FT/SEC, USE PARKWAY CULVERT TYPE - "B"

4	SIDEWALK UNDERDRAIN
NTS	REFERENCE SHEET:

5	DETAIL
NTS	REFERENCE SHEET:

NO.	NAME	REVISION DESCRIPTION	DATE

A CARING COMMUNITY EST. 1925 CITY OF LA HABRA

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED PROFESSIONAL ENGINEER GREG EDWIN SAUL 89580 CIVIL STATE OF CALIFORNIA

CITY OF LA HABRA - VISTA GRANDE PARK

DETAILS

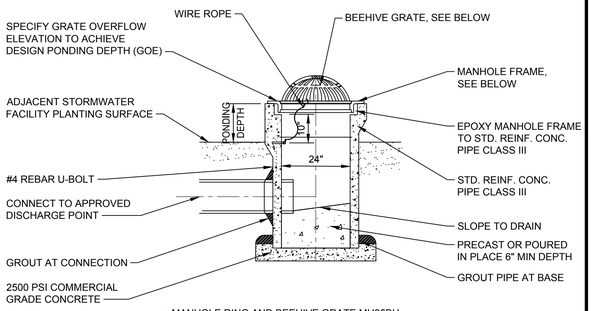
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DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-503 SHEET 18 OF 89
APPROVED BY :	G.E.S.	DATE : 06-2023	

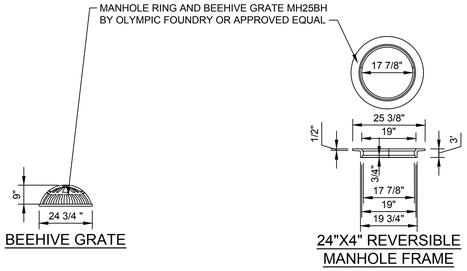
FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

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1 OVERFLOW STRUCTURE

NTS | REFERENCE SHEET:





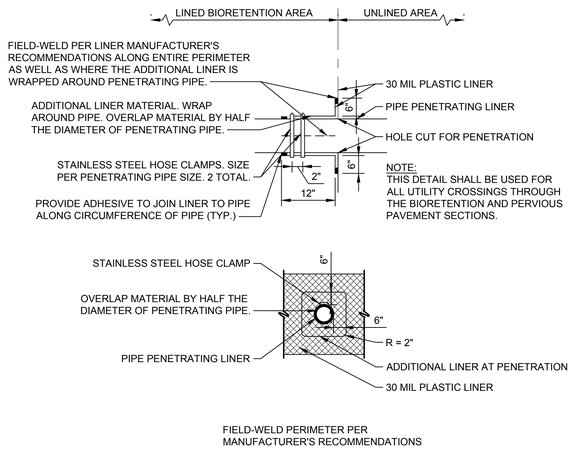
BEEHIVE GRATE

24"X4" REVERSIBLE MANHOLE FRAME

NOTES:
1. PROVIDE GRATE OVERFLOW ELEVATION ON PLANS.
2. TO INCORPORATE FLEXIBILITY INTO DESIGN OVERFLOW ELEVATION OR CORRECT ELEVATION OF AN EXISTING STRUCTURE, INSTALL OVERFLOW COLLAR, PER DETAIL SW-22A.
3. IN PRIVATE SITES NOT IN CITY R/W THE PROJECT CIVIL ENGINEER MAY PROPOSE ALTERNATIVES FOR GRATE INSTALLATIONS USING ALTERNATIVE MANUFACTURER'S PRODUCT/CONFIGURATION.
4. DO NOT ADJUST OVERFLOW GRATE ELEVATION, CONSTRUCT AS SHOWN ON PLANS.

2 PIPE PENETRATION

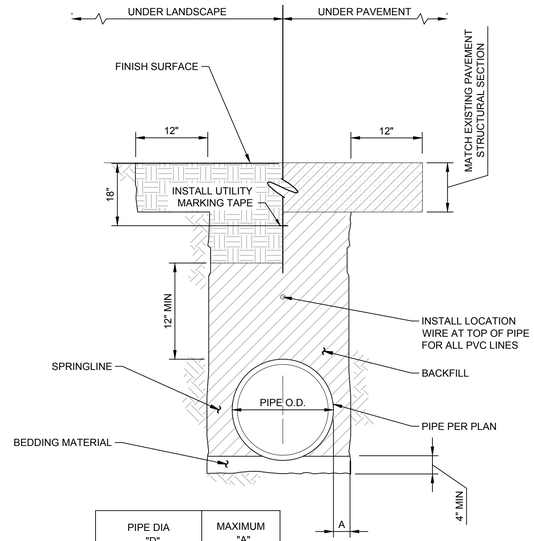
NTS | REFERENCE SHEET:



SECTION

3 PIPE TRENCHING

NTS | REFERENCE SHEET:



PIPE DIA "D"	MAXIMUM "A"
6" TO 15"	8"
16" TO 21"	10"
24" TO 30"	12"
33" TO 42"	15"
48" & LARGER	18"

4 NOT USED

NTS | REFERENCE SHEET:

5 NOT USED

NTS | REFERENCE SHEET:

6 NOT USED

NTS | REFERENCE SHEET:

7 NOT USED

NTS | REFERENCE SHEET:

8 NOT USED

NTS | REFERENCE SHEET:

NO.	NAME	REVISION DESCRIPTION	DATE

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED PROFESSIONAL ENGINEER GREG EDWIN SAUL 90500 CIVIL STATE OF CALIFORNIA

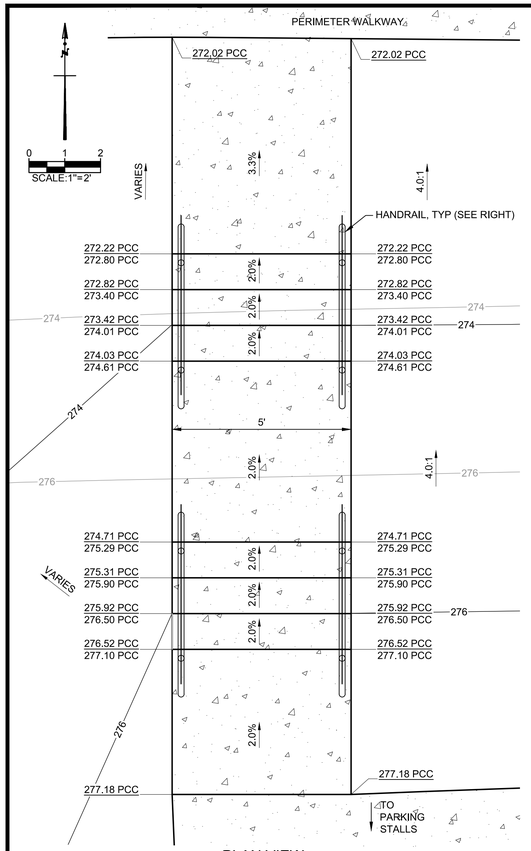
CITY OF LA HABRA - VISTA GRANDE PARK

DETAILS

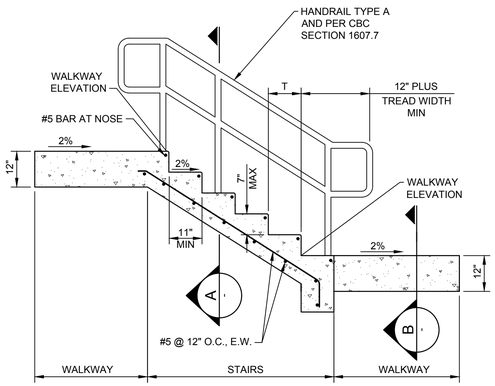
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DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE: AS SHOWN
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-504
APPROVED BY :	G.E.S.	DATE : 06-2023	SHEET 19 OF 89

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

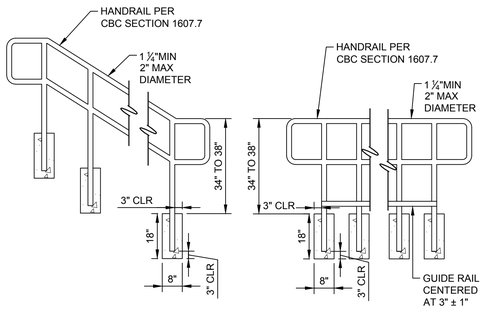
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PLAN VIEW

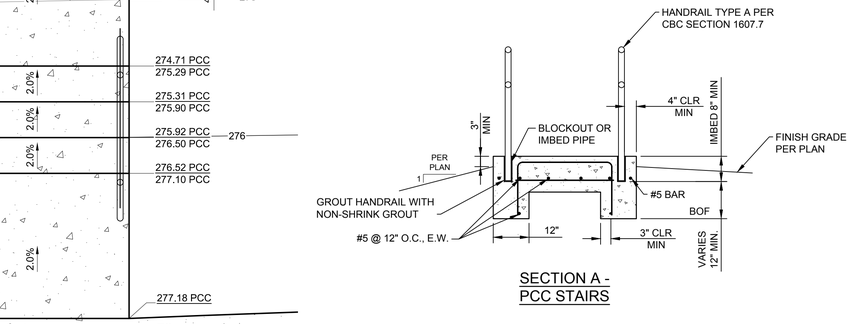


ELEVATION

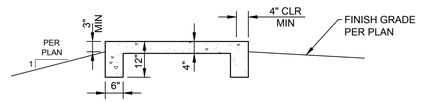


TYPE A TYPE B

HANDRAILING



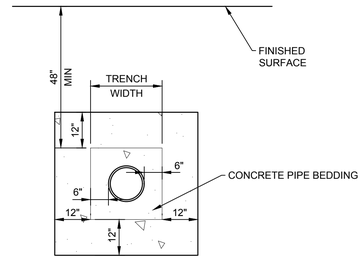
SECTION A - PCC STAIRS



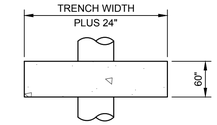
SECTION B - PCC WALKWAY

NOTE:
PROVIDE SAFETY STAIR TREADS ON ALL CONCRETE STAIRS AND LANDINGS

1	STAIRS AND WALKWAY
NTS	REFERENCE SHEET: C-306

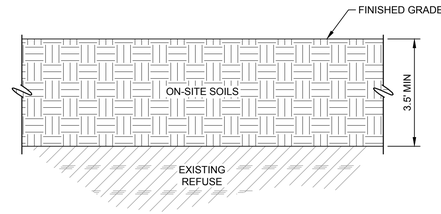


SECTION
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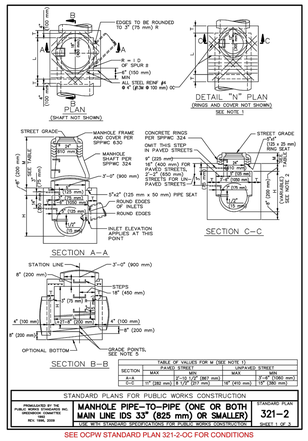


PLAN

2	TRENCH DAM
NTS	REFERENCE SHEET:



3	TYPICAL COVER SECTION
NTS	REFERENCE SHEET:



SEE OCPW STANDARD PLAN 321-2-OC FOR CONDITIONS

NOTES

1. WHEN DEPTH M FROM STREET GRADE TO THE TOP OF THE BOX IS LESS THAN 2'-10 1/2" (867 mm) FOR PAVED STREETS OR 3'-6" (1060 mm) FOR UNPAVED STREETS, CONSTRUCT SHAFT PER SECTION C-C AND DETAIL "N". DEPTH M MAY BE REDUCED TO AN ABSOLUTE LIMIT OF 6" (150 mm) WHEN THE MIN. VALUES OF M WOULD REDUCE H IN SECTION C-C TO 3'-6" (1060 mm) OR LESS.
2. H (IN SECTION A—A AND B—B) SHALL NOT BE LESS THAN 4'-0" (1.2 m), BUT MAY BE INCREASED PROVIDED THAT THE VALUE OF M SHALL NOT BE LESS THAN THE MINIMUM SPECIFIED AND THAT THE REDUCER SHALL BE USED. FOR H (IN SECTION C—C) SEE NOTE 1.
3. L SHALL BE 4'-0" (1.2 m) UNLESS OTHERWISE SHOWN. L MAY BE INCREASED OR LOCATION OF MANHOLE SHIFTED TO MEET PIPE ENDS, BUT ANY CHANGE IN LOCATION OF THE SPUR MUST BE APPROVED BY THE ENGINEER.
4. T SHALL BE 8" (200 mm) FOR VALUES OF H UP TO AND INCLUDING 8'-0" (2.4 m) AND 10" (250 mm) FOR VALUES OF H OVER 8'-0" (2.4 m).
5. STATIONS OF MANHOLES SHOWN ON PLANS APPLY AT CENTERLINE OF SHAFT. ELEVATIONS ARE SHOWN AT CENTERLINE OF SHAFT AND REFER TO THE PROLONGED INVERT GRADE LINES. SEE NOTE 3.
6. REINFORCEMENT SHALL CONFORM TO ASTM A 615, GRADE 40 (ASTM A 615M, GRADE 300), AND SHALL TERMINATE 1 1/2" (40 mm) CLEAR OF CONCRETE SURFACES UNLESS OTHERWISE SHOWN.
7. FLOOR OF MANHOLE SHALL BE STEEL TROWELED TO SPRING LINE.
8. BODY OF MANHOLE SHALL BE POURED IN ONE CONTINUOUS OPERATION EXCEPT THAT A CONSTRUCTION JOINT WITH A LONGITUDINAL KEYWAY MAY BE PLACED AT SPRING LINE.
9. THICKNESS OF THE DECK SHALL VARY WHEN NECESSARY TO PROVIDE A LEVEL SEAT BUT SHALL NOT BE LESS THAN 8" (200 mm).
10. STEPS SHALL CONFORM TO SPPWC 635 OR 636, UNLESS OTHERWISE SHOWN. STEPS SHALL BE UNIFORMLY SPACED 14" (350 mm) TO 15" (375 mm) OC. THE LOWEST STEP SHALL NOT BE MORE THAN 24" (600 mm) ABOVE THE LEDGE AT THE SIDE OF THE MANHOLE.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
MANHOLE PIPE—TO—PIPE (ONE OR BOTH MAIN LINE IDS 33" (825 mm) OR SMALLER)
STANDARD PLAN 321-2
SHEET 2 OF 2

SEE OCPW STANDARD PLAN 321-2-OC FOR CONDITIONS

11. THE FOLLOWING CRITERIA SHALL BE USED FOR THIS MANHOLE:
    A. MAIN LINE = 33" (825 mm) INSIDE DIAMETER OR LESS. (EXCEPTION — IF THE MAIN LINE RCP DOWNSTREAM OF THE MANHOLE IS 36" (900 mm) TO 42" (1050 mm) INSIDE DIAMETER AND THE MAIN LINE RCP UPSTREAM IS 33" (825 mm) OR LESS.) SPPWC 320 OR 322 IS NOT APPLICABLE WHERE THE MAIN LINE CONDUIT IS LESS THAN 36" (900 mm) IN DIAMETER.
    B. SEE SECTION A — A. THE MAXIMUM SIZE LATERAL THAT MAY BE CONNECTED TO THIS MANHOLE IS SUCH THAT THE DISTANCE FROM THE OUTSIDE (TOP) OF THE LATERAL TO THE BOTTOM OF THE 8" (200 mm) THICK TOP OF THE MANHOLE CHAMBER, MEASURED VERTICALLY FROM THE END OF THE RCP, SHALL BE A MINIMUM OF 6" (150 mm).
    C. IF THE SIZE OF THE LATERAL IS SUCH THAT THE ABOVE-SPECIFIED MINIMUM DISTANCES CANNOT BE MAINTAINED, THEN ONE OF THE FOLLOWING ALTERNATE SOLUTIONS MUST BE USED.
        1. PROVIDE A SPECIAL STRUCTURE.
        2. PROVIDE TWO STANDARD STRUCTURES, CONSISTING OF THIS MANHOLE PLACED UPSTREAM OR DOWNSTREAM FROM THE APPLICABLE JUNCTION STRUCTURE OR TRANSITION STRUCTURE.
12. MANHOLE FRAME AND COVER SHALL CONFORM TO SPPWC 630 UNLESS OTHERWISE SHOWN.
13. MANHOLE SHAFT SHALL CONFORM TO SPPWC 324 UNLESS OTHERWISE SHOWN.
14. WHERE A MANHOLE SHAFT — 36" (900 mm) WITHOUT REDUCER IS SPECIFIED REFER TO SPPWC 336.
15. WHERE A PRESSURE MANHOLE SHAFT — WITH ECCENTRIC REDUCER IS SPECIFIED REFER TO SPPWC 328.
16. WHERE A PRESSURE MANHOLE SHAFT — 36" (900 mm) WITHOUT REDUCER IS SPECIFIED REFER TO SPPWC 329.
17. THE FOLLOWING SPPWC ARE INCORPORATED HEREIN:
    324 MANHOLE SHAFT — WITH ECCENTRIC REDUCER
    326 MANHOLE SHAFT — 36" (900 mm) WITHOUT REDUCER
    328 PRESSURE MANHOLE SHAFT — WITH ECCENTRIC
    329 PRESSURE MANHOLE SHAFT — 36" (900 mm) WITHOUT REDUCER
    630 24" (600 mm) MANHOLE FRAME AND COVER
    633 36" (900 mm) MANHOLE FRAME AND COVER
    635 STEEL STEP
    636 POLYPROPYLENE PLASTIC STEP

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
MANHOLE PIPE—TO—PIPE (ONE OR BOTH MAIN LINE IDS 33" (825 mm) OR SMALLER)
STANDARD PLAN 321-2
SHEET 3 OF 3

SEE OCPW STANDARD PLAN 321-2-OC FOR CONDITIONS

THE FOLLOWING STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, 2009 EDITION, OF THE PUBLIC WORKS STANDARDS, INC. HAVE BEEN ADOPTED BY OCPW WITH CONDITIONS WHICH SHALL APPLY TO OCPW USE. THE CONDITIONS ARE LISTED BELOW.

SPPWC #	OCPW #	NAME AND CONDITIONS
321-2	321-2-OC	MANHOLE PIPE-TO-PIPE (ONE OR BOTH MAIN LINE IDS 33" (825 mm) OR LARGER)

1. REVISE THE NAME OF SPPWC STD. PLAN 321-2 TO 1. "JUNCTION STRUCTURE—TYPE I".
2. SECTION A—A, B—B, & C—C:
    - REVISE THE TOP THICKNESS OF THE BASE FROM 8 INCHES TO 10 INCHES.
    - REVISE THE PIPE EMBEDMENT INTO THE BASE FROM 4 INCHES TO 5 INCHES.
    - A 4 INCHES X 4 INCHES MORTAR FILLET SHALL BE PLACED BETWEEN THE BASE AND THE RINGS IF THE STRUCTURE IS NOT LOCATED IN A PAVED STREET. (SECTION C—C)
3. MANHOLE SHAFT SHALL CONFORM TO STD. PLAN 1503.
4. CONCRETE RINGS SHALL CONFORM TO STD. PLAN 1502.
5. REPLACE NOTE 3 WITH THE FOLLOWING: "LENGTH L SHALL BE 4 FEET FOR LATERALS OF 20 INCHES OR LESS AND 5 FEET FOR LATERALS GREATER THAN 20 INCHES, UNLESS OTHERWISE SHOWN ON THE IMPROVEMENT PLAN. LENGTH L MAY BE INCREASED A MAXIMUM OF ONE FOOT AT EACH END TO MEET PIPE ENDS. CONTINUE #4 REBARS AT 4 INCHES ON—CENTER."
6. REPLACE NOTE 10 WITH THE FOLLOWING: "STEPS SHALL CONFORM TO SPPWC STD. PLAN 635 OR STD. PLAN 1507. UNLESS OTHERWISE, SHOWN, STEPS SHALL BE UNIFORMLY SPACED 14 INCHES (350 MM) TO 15 INCHES (375 MM) ON—CENTER. THE LOWEST STEP SHALL NOT BE MORE THAN 24 INCHES (600 MM) ABOVE THE LEDGE AT THE SIDE OF THE MANHOLE."
7. DELETE NOTES 10 AND 13—17.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT
Adopted: Revision: August 2018
Approved: Mitch Barns, County Engineer
STD. PLAN 321-2-OC
SPPWC STANDARD PLAN - MANHOLE PIPE-TO-PIPE (ONE OR BOTH MAIN LINE IDS 33" (825 mm) OR SMALLER) (JUNCTION STRUCTURE - TYPE I)
SHT. 1 OF 2

THE FOLLOWING STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION, 2009 EDITION, OF THE PUBLIC WORKS STANDARDS, INC. HAVE BEEN ADOPTED BY OCPW WITH CONDITIONS WHICH SHALL APPLY TO OCPW USE. THE CONDITIONS ARE LISTED BELOW.

SPPWC #	OCPW #	NAME AND CONDITIONS
321-2	321-2-OC	MANHOLE PIPE-TO-PIPE (ONE OR BOTH MAIN LINE IDS 33" (825 MM) OR LARGER)

8. ADD NOTES:
    18. RINGS, REDUCER AND PIPE FOR ACCESS SHAFT SHALL BE SEATED IN 1:2 MORTAR AND NEATLY POINTED OR WIPED INSIDE THE SHAFT. GROUT BETWEEN THE SHAFT AND THE PIPE OR RING SEAT.
    19. LEDGE SHALL BE SLOPED AT 2 INCHES PER FOOT.
    20. THE ANGLE BETWEEN THE LATERAL AND THE MAIN LINE SHALL NOT BE GREATER THAN 45 PERCENT WHEN THE FLOW IN THE LATERAL EXCEEDS 10 PERCENT OF THE FLOW IN THE MAIN LINE.
    21. CONSTRUCT DEEP MANHOLE LANDING(S) PER STD. PLAN 1508 AND INCREASE JUNCTION STRUCTURE BOTTOM WIDTH TO 4 FEET MINIMUM WHEN THE COMBINED DEPTH OF THE PIPE DIAMETER AND MANHOLE SHAFT DIV IS 20 FEET OR GREATER AND THE MANHOLE SHAFT IS GREATER THAN 12 FEET OR, AS DIRECTED BY THE ENGINEER.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT
Revision: August 2018
Approved: Mitch Barns, County Engineer
STD. PLAN 321-2-OC
SPPWC STANDARD PLAN - MANHOLE PIPE-TO-PIPE (ONE OR BOTH MAIN LINE IDS 33" (825 mm) OR SMALLER) (JUNCTION STRUCTURE - TYPE I)
SHT. 2 OF 2

4	MANHOLE
NTS	REFERENCE SHEET: C-401

NO.	NAME	REVISION DESCRIPTION	DATE

A CARING COMMUNITY EST. 1925 CITY OF LA HABRA

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED PROFESSIONAL ENGINEER GREG EDWIN SAUL 60600 STATE OF CALIFORNIA CIVIL

CITY OF LA HABRA - VISTA GRANDE PARK

DETAILS

DESIGNED BY :	G.E.S.	FILE : C-505 Details.dwg			
DRAWN BY :	A.N.P & R.C.W.	DATE : 06-2023	SCALE:	AS SHOWN	
CHECKED BY :	D.L.L. & N.G.P.	DATE : 06-2023	C-505	SHEET 20 OF 89	
APPROVED BY :	G.E.S.	DATE : 06-2023			

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

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CITY OF LA HABRA
VISTA GRANDE PARK
METHANE MITIGATION SYSTEM (MMS)
MODIFICATION

SHEET INDEX

M-100	TITLE SHEET
M-101	EXISTING MMS SYSTEM
M-102	MMS MODIFICATION OVERVIEW
M-103	MMS MODIFICATION
M-104	WELL MODIFICATION DETAIL
M-105	HEADER DETAILS



LOCAL MAP

NOTES

1. THE CONTRACTOR SHALL VERIFY LOCATIONS OF UNDERGROUND AND ABOVE GROUND APPURTENANCES AND UTILITIES WITH NORTH WEST UTILITY NOTIFICATION CENTER AND THE SITE COORDINATOR TO VERIFY LOCATIONS PRIOR TO DIGGING OR CONSTRUCTION. LOCATIONS WILL BE ADJUSTED TO AVOID UTILITIES & APPURTENANCES, AND THE ADJUSTED ALIGNMENT SHALL BE CHECKED AND APPROVED BY THE ENGINEER.
2. ALL NECESSARY PERMITS FROM THE REGULATORY AGENCIES INCLUDING FEDERAL, STATE, REGIONAL, AND LOCAL MUST BE OBTAINED PRIOR TO START OF ANY CONSTRUCTION WORK.
3. CONTRACTOR WILL EXECUTE THE WORK SAFELY, CONSISTENT WITH EXCAVATING AND WORKING IN A POTENTIALLY EXPLOSIVE ENVIRONMENT.
4. ANY DRILLING, TRENCHING, EXCAVATION, OR OTHER WORK BELOW GRADE IS SUBJECT TO METHANE GAS INFILTRATION FROM THE SOIL WHICH COULD CREATE A POTENTIAL HAZARD TO PERSONNEL. SPECIAL SAFETY PRECAUTIONS SHALL BE INCLUDED IN THE CONTRACTORS HEALTH AND SAFETY PLAN TO ADDRESS THIS ISSUE.
5. EXCEPT WHEN BEING ACTIVELY WORKED ON, EXCAVATIONS OR HOLES SHALL BE COVERED TO PREVENT UNAUTHORIZED ENTRY.
6. ALL CONSTRUCTION SHALL BE CONDUCTED USING LATEST INTERNATIONAL BUILDING CODE.
7. ANY DRILLING, TRENCHING, EXCAVATION, OR OTHER WORK BELOW GRADE IS SUBJECT TO METHANE GAS INFILTRATION FROM THE SOIL WHICH COULD CREATE A POTENTIAL HAZARD TO PERSONNEL. SPECIAL SAFETY PRECAUTIONS SHALL BE INCLUDED IN THE CONTRACTORS HEALTH AND SAFETY PLAN TO ADDRESS THIS ISSUE.
8. CONTRACTOR SHALL CONTACT USA (UNDERGROUND SERVICE ALERT) AT (800) 642-2444 AT LEAST TWO WORKING DAYS BUT NOT MORE THAN 14 DAYS PRIOR TO COMMENCING EXCAVATION WORK.

DETAIL SCALE: 1 / C-4 — THIS DETAIL NO. / THIS SHEET NO.

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MONTROSE ENVIRONMENTAL

NO.	REVISION DESCRIPTION	DATE

TETRA TECH
21700 Copley Drive, Suite 200
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TEL 909.860.7777 FAX 909.860.8017

REGISTERED PROFESSIONAL ENGINEER — DANIEL D. WALKER — NO. 59722 — DIGITAL SIGNATURE — CIVIL — STATE OF CALIFORNIA

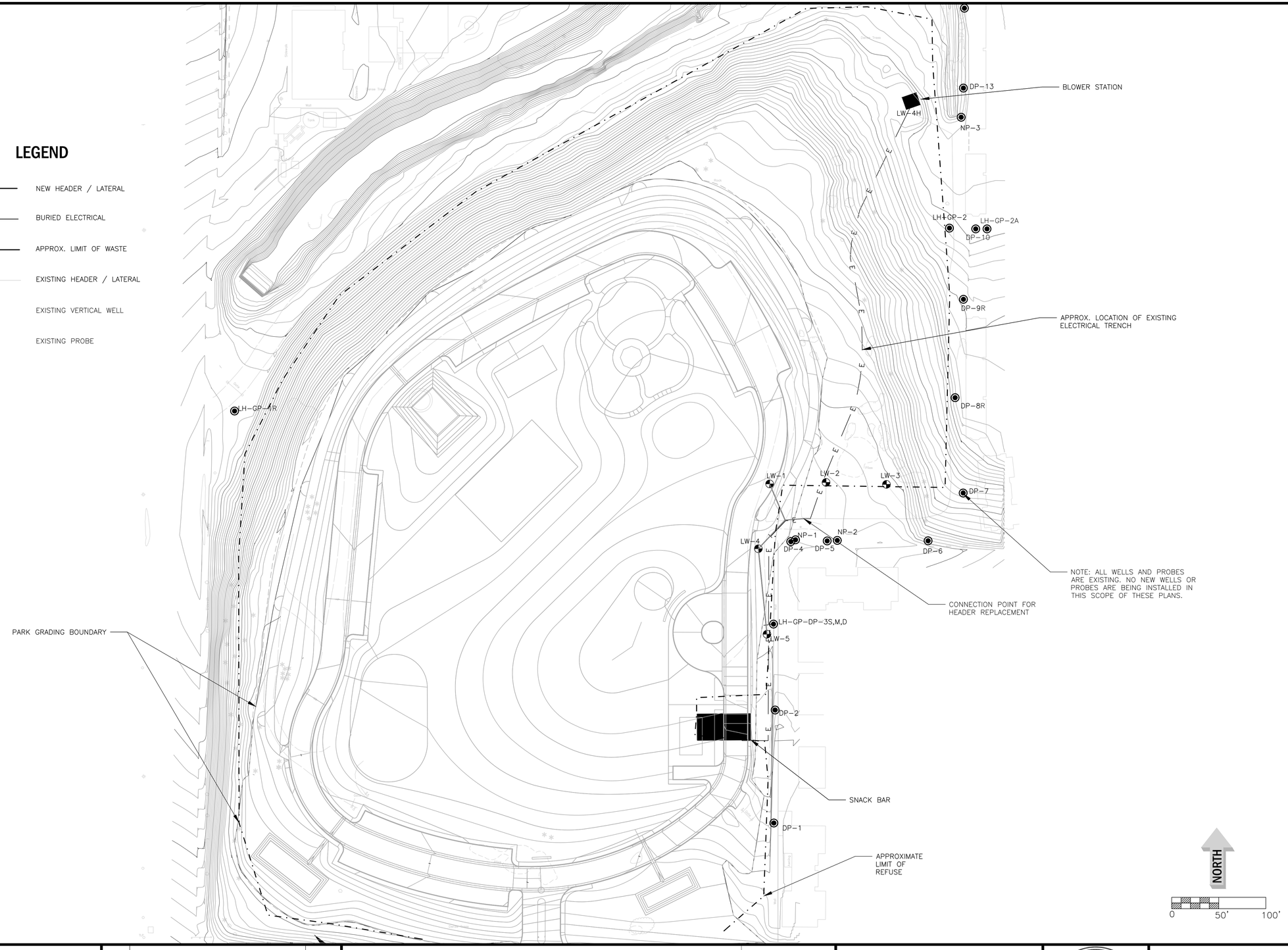
CITY OF LA HABRA / VISTA GRANDE PARK

TITLE SHEET

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CHECKED BY :	A.M.P. & D.D.W.	DATE : 01-2021	M-100	SHEET 21 OF 89	
APPROVED BY :	D.D.W.	DATE : 01-2021			

LEGEND

- NEW HEADER / LATERAL
- E — BURIED ELECTRICAL
- APPROX. LIMIT OF WASTE
- EXISTING HEADER / LATERAL
- EXISTING VERTICAL WELL
- EXISTING PROBE



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TETRA TECH
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REGISTERED PROFESSIONAL ENGINEER — DANIEL D. WILLARD — NO. 59722 — DIGITAL SIGNATURE — CIVIL — STATE OF CALIFORNIA

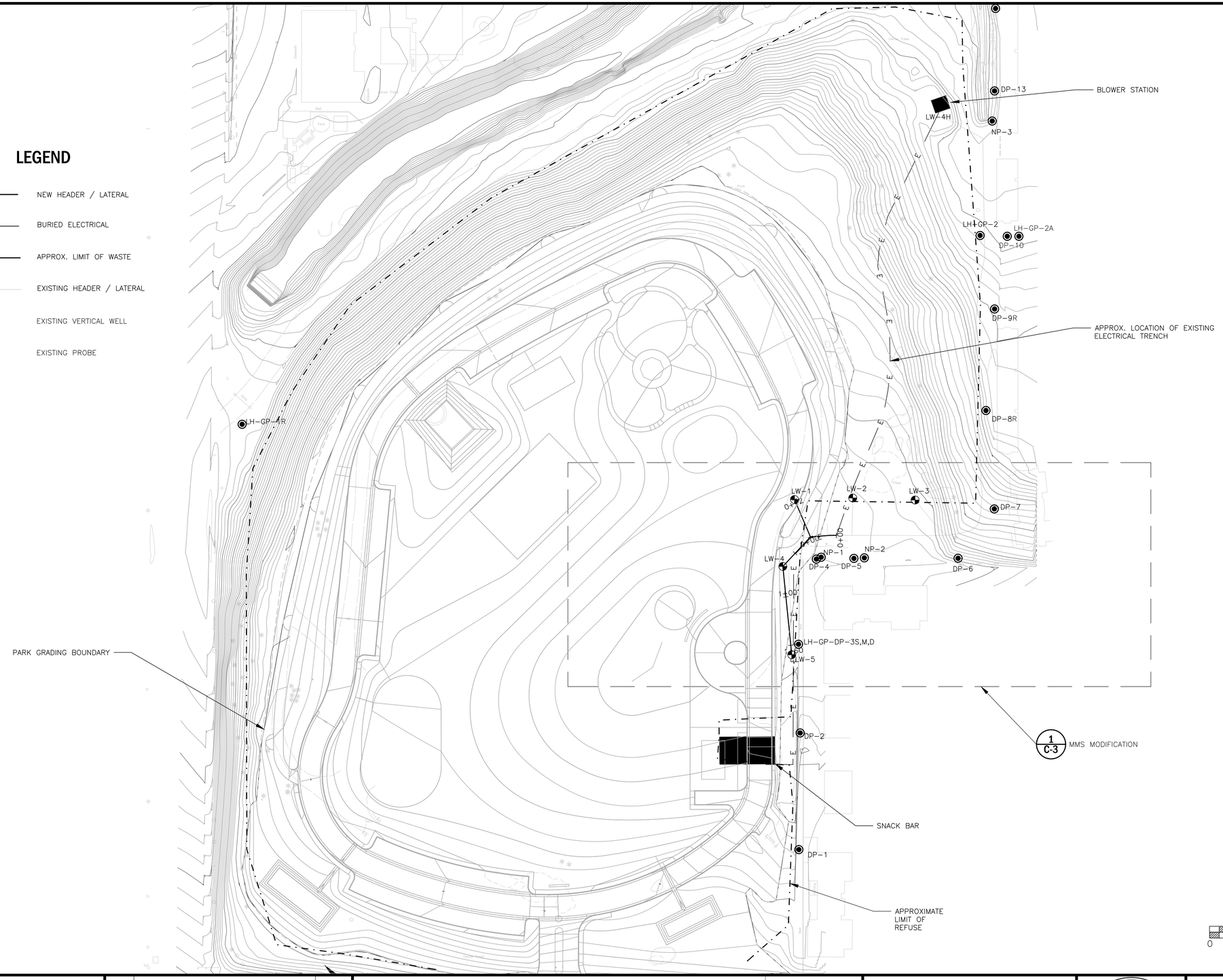
CITY OF LA HABRA / VISTA GRANDE PARK

EXISTING MMS SYSTEM

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CHECKED BY :	A.M.P. & D.D.W.	DATE : 01-2021	M -101	SHEET 22 OF 89	
APPROVED BY :	D.D.W.	DATE : 01-2021			

LEGEND

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- E — BURIED ELECTRICAL
- APPROX. LIMIT OF WASTE
- EXISTING HEADER / LATERAL
- EXISTING VERTICAL WELL
- EXISTING PROBE



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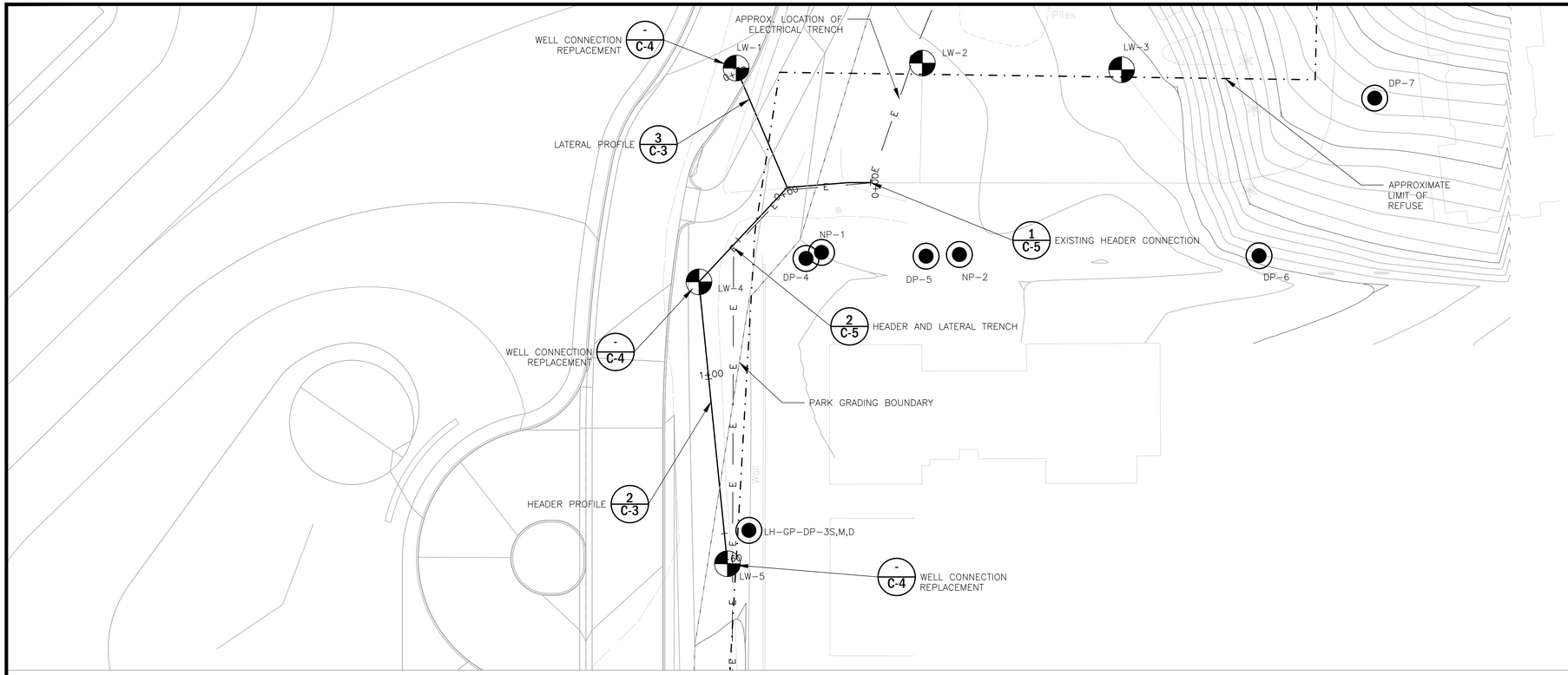
TETRA TECH
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REGISTERED PROFESSIONAL ENGINEER — DANIEL D. WALFORD — NO. 59722 — DIGITAL SIGNATURE — CIVIL — STATE OF CALIFORNIA

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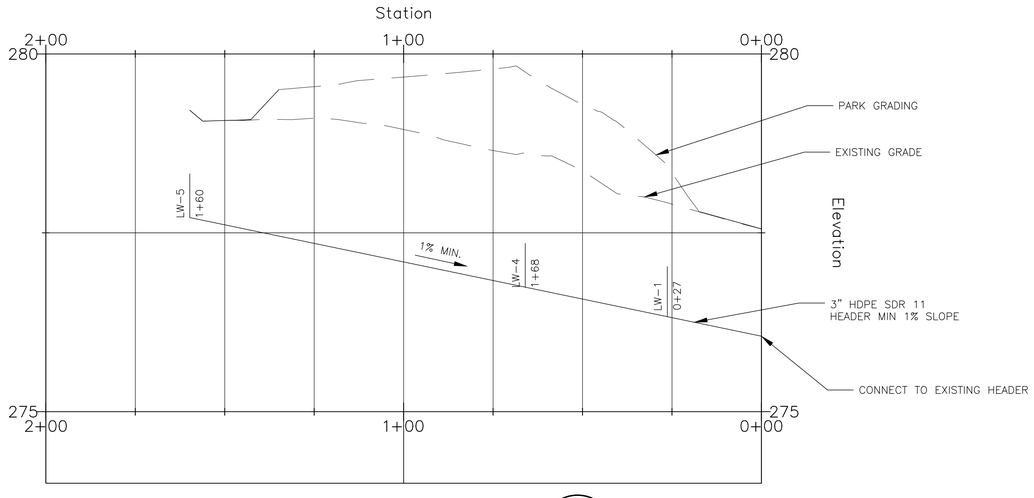
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CHECKED BY :	A.M.P. & D.D.W.	DATE : 01-2021	M-102	SHEET 23 OF 89	
APPROVED BY :	D.D.W.	DATE : 01-2021			



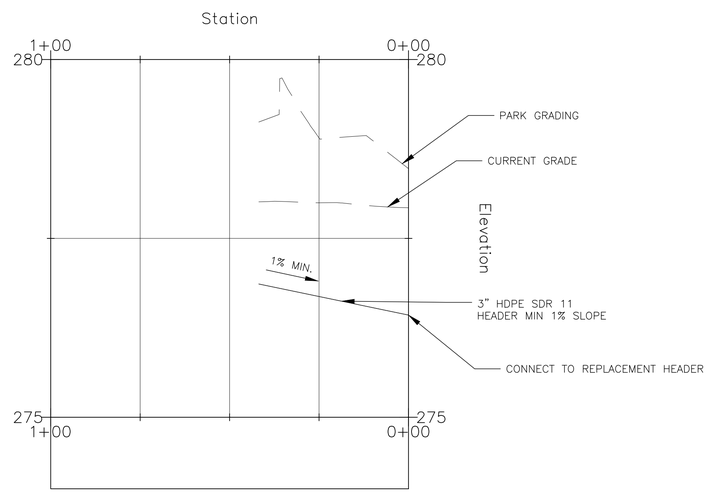
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1 / C-3



HEADER PROFILE
SCALE: NONE

2 / C-3



LATERAL PROFILE
SCALE: NONE

3 / C-3

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REVISION DESCRIPTION	DATE

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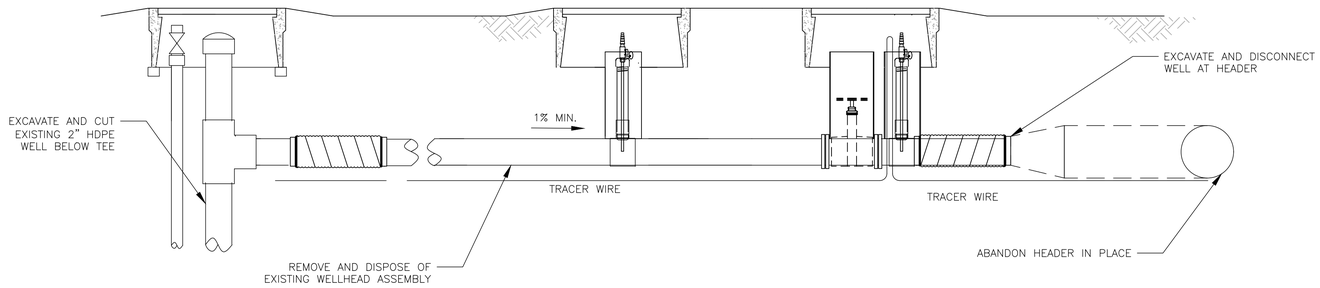
TETRA TECH
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REGISTERED PROFESSIONAL ENGINEER DANIEL D. WALKER NO. 59722 DIGITAL SIGNATURE CIVIL STATE OF CALIFORNIA

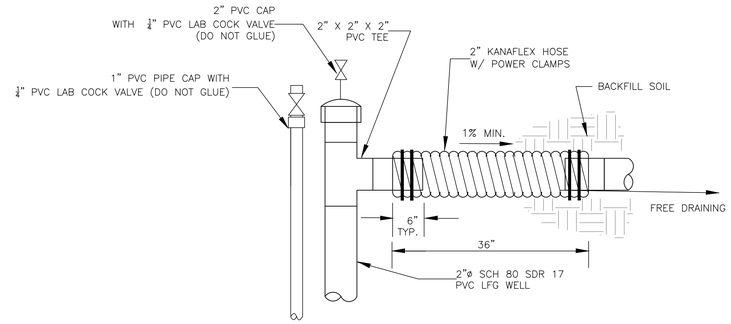
CITY OF LA HABRA / VISTA GRANDE PARK

MMS MODIFICATION

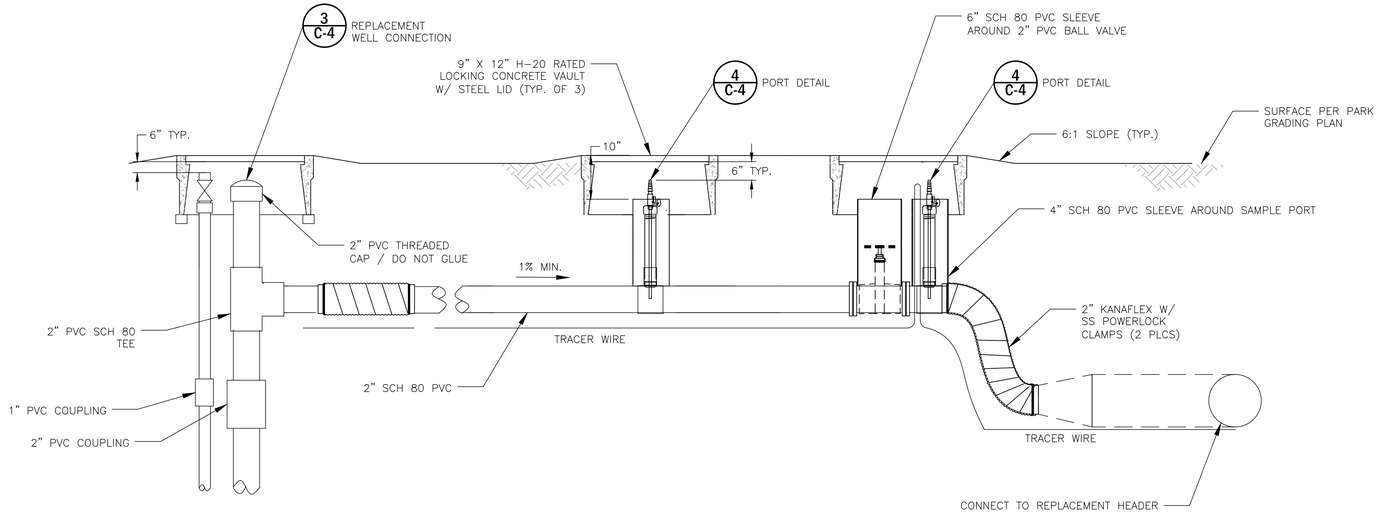
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APPROVED BY :	D.D.W.	DATE : 01-2021	M-103	SHEET 24 OF 89	



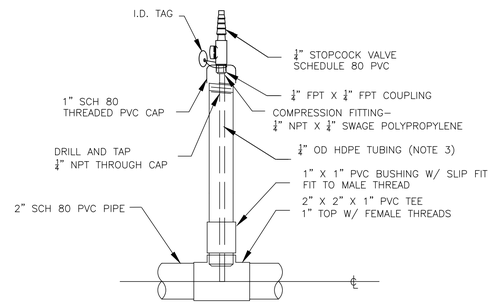
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SCALE: NONE



REPLACEMENT WELL CONNECTION 3/C-4
SCALE: NONE



REPLACEMENT WELL CONNECTION DETAIL 2/C-4
SCALE: NONE



NOTES:
1. SEAL ALL PIPE THREADS WITH TEFLON PASTE.
2. REAM INSIDE OF 1" RISER TO ALLOW CLEAR AND EASY PASSAGE OF 1/4 OD TUBE.
3. EXTEND 1/4" TUBE TO ℄ OF PIPE

PORT DETAIL 4/C-4
SCALE: NONE

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CITY OF LA HABRA — A CARING COMMUNITY — EST. 1925

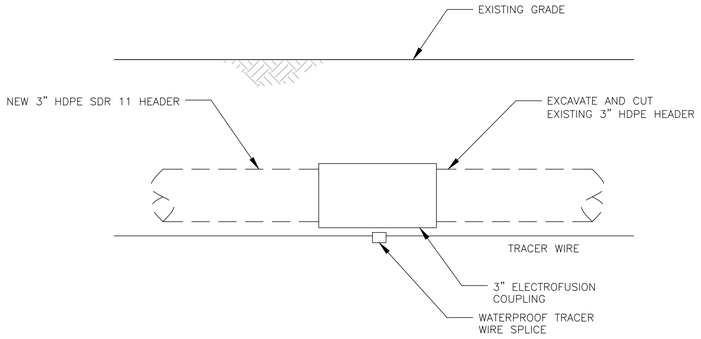
TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED PROFESSIONAL ENGINEER — DANIEL D. WATRED — NO. 59722 — DIGITAL SIGNATURE — CIVIL — STATE OF CALIFORNIA

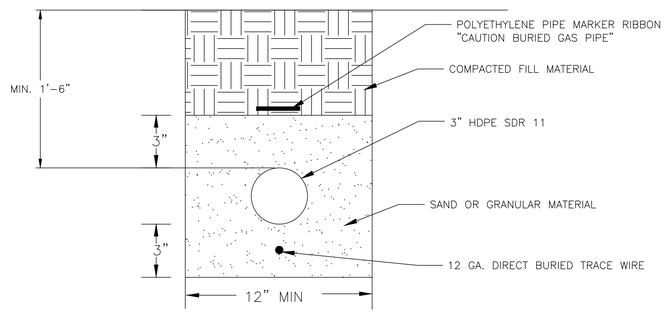
CITY OF LA HABRA / VISTA GRANDE PARK

WELL MODIFICATION DETAIL

DESIGNED BY :	A.M.P. & D.D.W.	FILE : C-3.dwg			
DRAWN BY :	A.M.P.	DATE : 01-2021	SCALE:	AS SHOWN	
CHECKED BY :	A.M.P. & D.D.W.	DATE : 01-2021	M-104	SHEET 25 OF 89	
APPROVED BY :	D.D.W.	DATE : 01-2021			



HEADER CONNECTION — 1 / C-5
SCALE: NONE



HEADER AND LATERAL TRENCH — 2 / C-5
SCALE: NONE

FOR BIDDING PURPOSES - NOT FOR CONSTRUCTION

G:\My Drive\039 Portland\1214 LA HABRA LANDFILL MASTER FOLDER\2020 Wellfield Modification\DWG\C-3.dwg 6/28/2022 3:47 PM

MONTROSE ENVIRONMENTAL

NO.	REVISION DESCRIPTION	DATE

A CARING COMMUNITY EST. 1925 CITY OF LA HABRA

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED PROFESSIONAL ENGINEER — DANIEL D. HAVNEN — NO. 59722 — DIGITAL SIGNATURE — CIVIL — STATE OF CALIFORNIA

CITY OF LA HABRA / VISTA GRANDE PARK

HEADER DETAIL

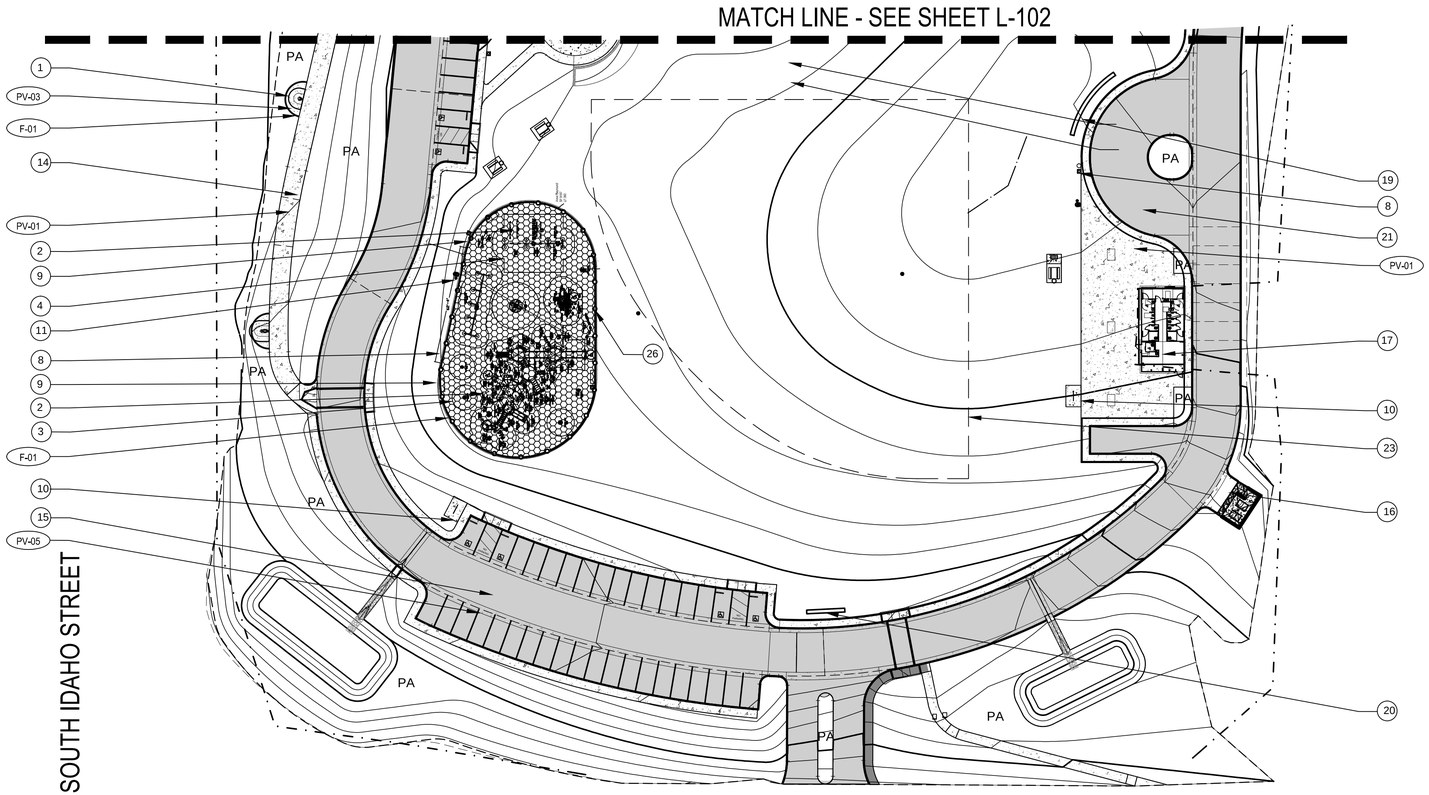
DESIGNED BY :	A.M.P. & D.D.W.	FILE : C-3.dwg			
DRAWN BY :	A.M.P.	DATE : 01-2021	SCALE: AS SHOWN		
CHECKED BY :	A.M.P. & D.D.W.	DATE : 01-2021	M-105	SHEET 26 OF 89	
APPROVED BY :	D.D.W.	DATE : 01-2021			

PAVING SCHEDULE

SYMBOL		ITEM	COLOR/FINISH	COMMENTS	DETAIL
	PV-01	CAST-IN-PLACE CONCRETE PAVING	COLOR: NATURAL GRAY FINISH: LIGHT BROOM	PROVIDE THREE (3) 4'X4' MOCKUPS TO GIVE A RANGE OF FINISHES FOR REVIEW & APPROVAL	DETAIL #1 & #2 / SHEET L401
	PV-02	PIP RUBBER SURFACE	COLOR: TBD	PROVIDE SAMPLES AND MOCKUP FOR APPROVAL	DETAIL #2 / SHEET L402
	PV-03	STABILIZED DECOMPOSED GRANITE	COLOR: CALIFORNIA GOLD AVAIL. FROM SOUTHWEST BOULDER	PROVIDE SAMPLES AND MOCKUP FOR APPROVAL	DETAIL #4 / SHEET L401
	PV-04	BALLFILED MIX STABILIZED DECOMPOSED GRANITE	ANGEL MIX W/ STABILIZER AVAIL. FROM CORONA CLAY	PROVIDE SAMPLES AND MOCKUP FOR APPROVAL	PER MANUFACTURE'S RECOMMENDATIONS
	PV-05	AC PAVING SEE CIVIL PLANS			

FINISH SCHEDULE

SYMBOL	ITEM	COLOR/FINISH	COMMENTS	DETAIL
F-01	CAST-IN-PLACE CONCRETE CURB	COLOR: NATURAL GRAY FINISH: TROWEL FINISH	PROVIDE SAMPLES AND MOCKUP FOR APPROVAL	DETAIL #3 / SHEET L402



CONSTRUCTION NOTES

1. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT FOR THE INSTALLATION OF ALL IMPROVEMENTS AS SHOWN ON THE DRAWINGS
2. CONTRACTOR SHALL REVIEW ALL EXISTING SITE CONDITIONS PRIOR TO SUBMITTING BID AND PRIOR TO COMMENCING INSTALLATION. IF ANY DISCREPANCIES EXIST, THEY SHOULD BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE.
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5. UNLESS DESIGNATED ON THE DRAWINGS OTHERWISE, ALL MATERIALS DESIGNATED FOR REMOVAL SHALL BE DISPOSED OF OFF-SITE IN A LEGAL MANNER ACCORDING TO THE LAW.
6. HARDSCAPE AND STRUCTURAL ELEMENTS SHALL BE PLACED PER GEOTECHNICAL SOILS REPORT. IF SUCH REPORT IS UNAVAILABLE, CONTRACTOR SHALL DISCUSS PLACEMENT ON SUITABLE GRADE WITH THE OWNER'S AUTHORIZED REPRESENTATIVE.
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8. ABANDONED PIPES SHALL BE CAPPED OR PLUGGED IN A MANNER APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE.
9. CONCRETE INDICATED FOR SAWCUTTING AND REMOVAL SHALL BE CUT TO A TRUE LINE WITH NEATLY SAWED EDGES. IF A SAWCUT IS WITHIN THREE FEET (3') OF AN EXISTING EXPANSION OR CONTROL JOINT, CONCRETE SHALL BE REMOVED TO THAT NEAREST JOINT.
10. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, MANUFACTURER'S CUT OR DATA SHEETS FOR APPROVAL PRIOR TO ORDERING MATERIALS. CONTRACTOR SHALL FURNISH TO THE OWNER'S AUTHORIZED REPRESENTATIVE A CERTIFICATE OF COMPLIANCE FOR SUCH FURNISHED MATERIALS.
11. UNLESS DESIGNATED ON THE DRAWINGS OTHERWISE, MATERIALS TO BE PURCHASED AND FURNISHED BY THE CONTRACTOR SHALL BE NEW.
12. FOR GRADING AND DRAINAGE REFER TO CIVIL PLANS.

NORTH

0 40 80 120

SCALE: 1" = 40'

KEYNOTES LEGEND

1. EXERCISE EQUIPMENT BY GREENFIELDS - 949.424.8857 www.gfoutdoorfitness.com REFER TO DETAIL #3 / SHEET L402 & #2 / SHEET L403 CONTACT NAME: FRANK VASQUEZ
2. PLAY STRUCTURE / TOT LOT BY GREAT WESTERN RECREATION 1-805-910-5971 brandon@gwpark.com REFER TO DETAIL #3 / SHEET L406 CONTACT NAME: BRANDON SEITZ
3. RUBBER SURFACE BY ROBERTSON INC. 800.858.0519 www.totturf.com MODEL:TOTOTURF COLOR: XXX REFER TO DETAIL # 2 / SHEET L-402
4. SHADE STRUCTURE (CHILDREN'S PLAY AREA) BY GREAT WESTERN RECREATION 1-805-910-5971 brandon@gwpark.com CONTACT NAME: BRANDON SEITZ
5. BBQ'S - MODEL#: SF1635G / AVAIL. FROM KAY PARK / INSTALL PER MANUFACTURERS INSTRUCTIONS / QTY. -XX - FINAL LOCATION T.B.D. BY OWNER
6. PICNIC TABLE BY GREAT WESTERN RECREATION 1-805-910-5971 brandon@gwpark.com CONTACT NAME: BRANDON SEITZ MODEL: P592 AND P1309 (WHEEL CHAIR ACCESSIBLE)
7. TRASH RECEPTACLE W/ RECYCLED PLASTIC PLANKS & DOME LID - MODEL #: 1150-PL/M1 / AVAIL. FROM PATTERSON/WILLIAMS ATHLETIC / QTY.- XX. REFER TO DETAIL # 1 / SHEET L402 - FINAL LOCATION T.B.D. BY OWNER
8. CONCRETE TRASH RECEPTACLES - MODEL#: QCP - CAL2534WH25 / COLOR: LATTE / QTY. - 9
9. 5'-0" PARK BENCH WITH ARM RESTS - BENCH MODEL #: 11676 WITH ARM REST MODEL #: 114767 AT BOTH ENDS AND MIDDLE (3 TOTAL) / AVAIL. FROM LANDSCAPE STRUCTURES/REC WEST OUTDOOR PRODUCTS - QTY. - XX REFER TO DETAIL # 7 / SHEET L401
10. BIKE RACK - MODEL #: WLBR-SERIES / POWDER COATED COLOR: BLUE / AVAIL. FROM LANDSCAPE STRUCTURES. REFER TO DETAIL # 6 / SHEET L401
11. DRINKING FOUNTAIN BY MOST DEPENDABLE FOUNTAINS 800-552-6331 www.mostdependable.com MODEL: 440 SM WITH PET FOUNTAIN COLOR: GREEN
12. CAST-IN-PLACE CONCRETE PAVING - REFER TO DETAIL #1 & #2 / SHEET L401
13. PRECAST PAVERS - REFER TO DETAIL #3 / SHEET L401
14. STABILIZED DECOMPOSED GRANITE - REFER TO DETAIL #4 / SHEET L401
15. PARKING LOT AND CURB - REFER TO CIVIL PLANS
16. TRASH ENCLOSURE - REFER TO SHEET L404 & 405
17. ~~RESTROOMS AND STORAGE BUILDING AVAIL. FROM PUBLIC RESTROOM COMPANY - REFER TO DETAIL #1 SHEET L403~~ OMIT
18. AMPHITHEATER
19. COMMUNITY ART WALL
20. PARK ENTRY SIGN
21. FOOD TRUCK CIRCLE
22. PLIGON GAZEBO MODEL#: OCT-20 / AVAIL. FROM MIRACLE PLAYGROUND SALES 714-271-2983 www.miracleplayground.com / INSTALL PER MANUFACTURERS INSTRUCTIONS / QTY. -1 (REFER TO DETAIL #5 SHEET L402) CONTACT NAME : JOHN JASON
23. FUTURE LOCATION OF JV SOFTBALL FIELD
24. VOLLEYBALL COURT
25. FUTSAL / BASKETBALL COURT
26. 4' FENCE AND GATE - REFER TO DETAIL #1 SHEET L404
27. 6' FENCE AND GATE - REFER TO DETAIL #2 SHEET L404

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TEAM
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT JEFFREY W. MAYER No. 5037 STATE OF CALIFORNIA
Signature 12/31/24 Renewal Date 06-16-23 Date
FOR REGULATORY APPROVAL NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
CONSTRUCTION PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-101	SHEET	27 OF 89
APPROVED BY :	RM/JM	DATE :			

WEST LAMBERT ROAD

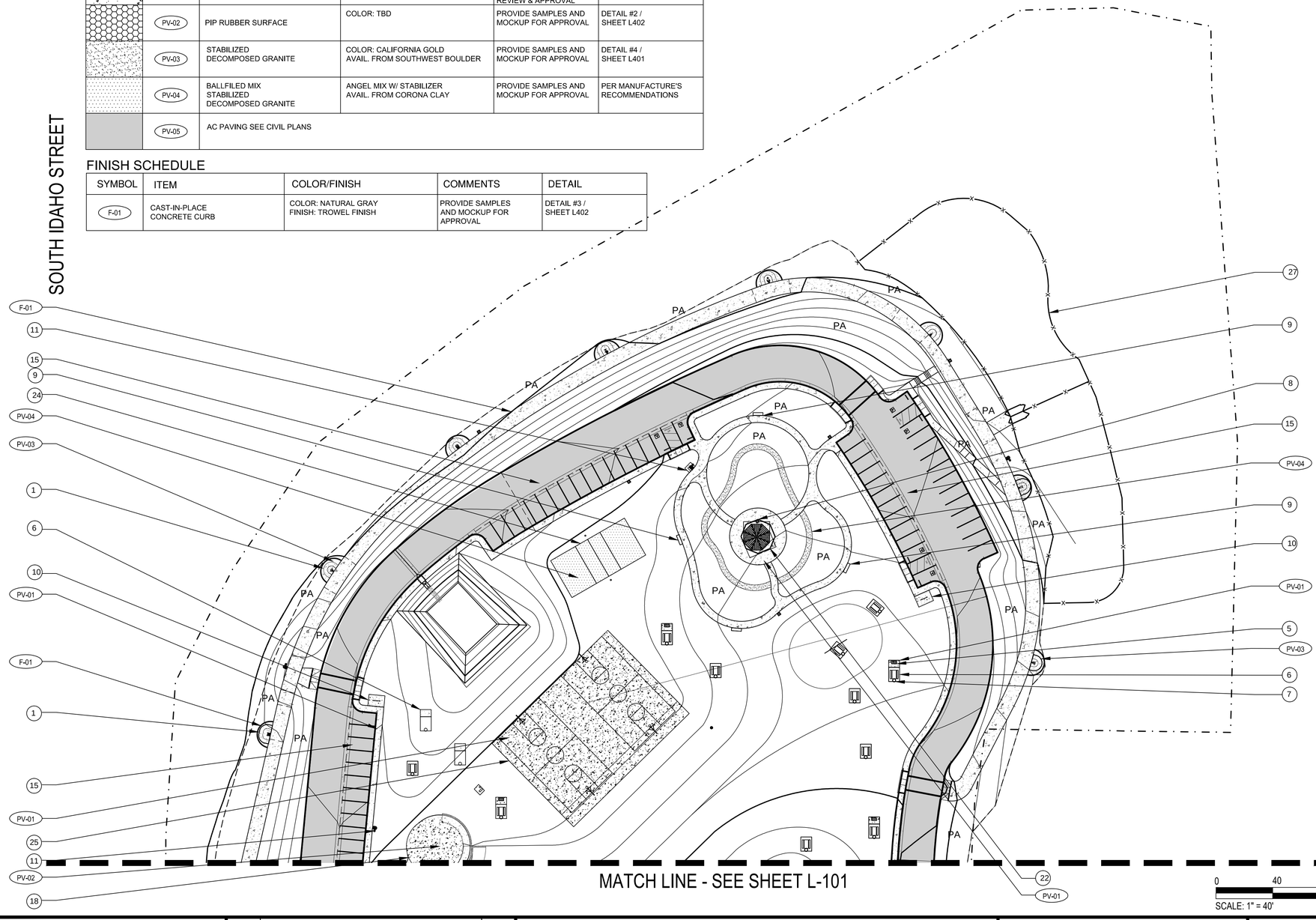
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SYMBOL	ITEM	COLOR/FINISH	COMMENTS	DETAIL
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PV-05	AC PAVING SEE CIVIL PLANS			

FINISH SCHEDULE

SYMBOL	ITEM	COLOR/FINISH	COMMENTS	DETAIL
F-01	CAST-IN-PLACE CONCRETE CURB	COLOR: NATURAL GRAY FINISH: TROWEL FINISH	PROVIDE SAMPLES AND MOCKUP FOR APPROVAL	DETAIL #3 / SHEET L402

SOUTH IDAHO STREET



MATCH LINE - SEE SHEET L-101

0 40 80 120

SCALE: 1" = 40'

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Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

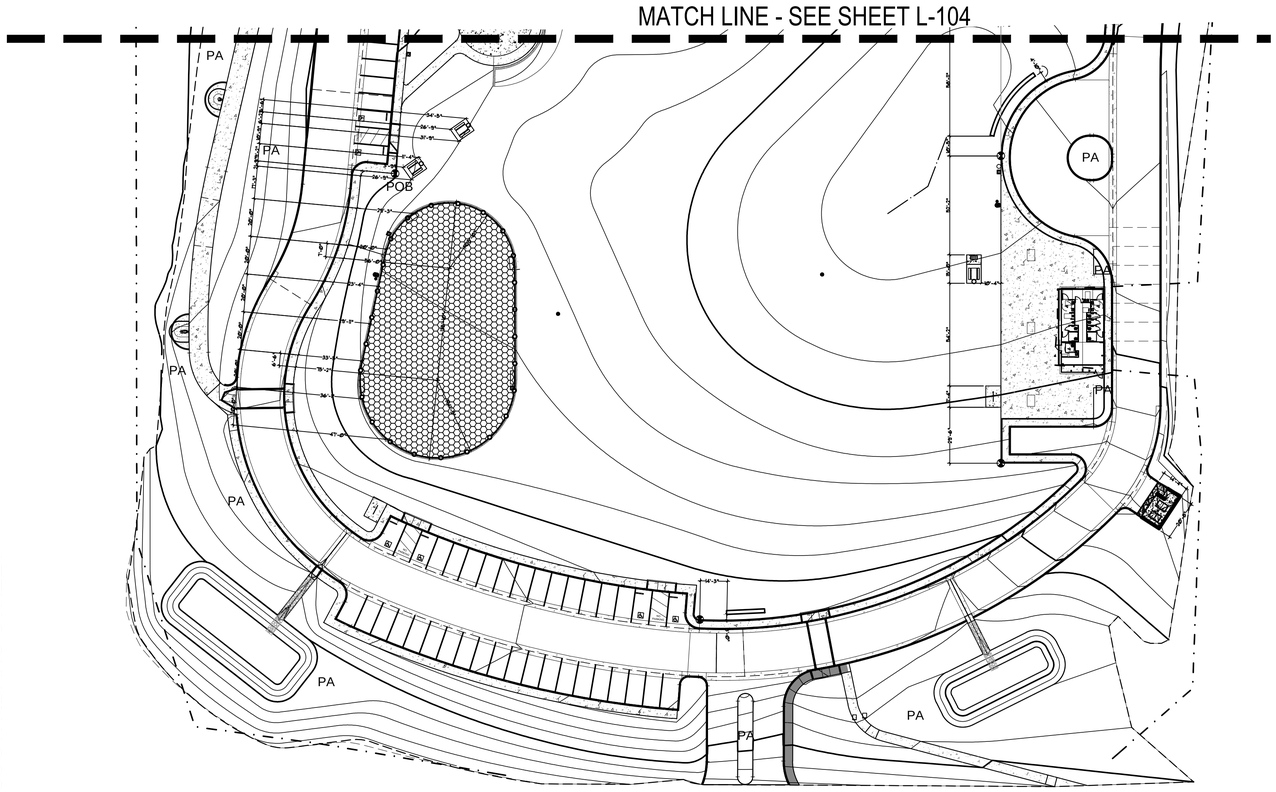
CITY OF LA HABRA — A CARING COMMUNITY — EST. 1925

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT — RICHARD W. MAYER — NO. 3107 — STATE OF CALIFORNIA
Signature 12-31-24 — Renewal Date 06-16-23 — Date
FOR REVIEW ONLY — NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
CONSTRUCTION PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-102	SHEET	28 OF 89
APPROVED BY :	RM/JM	DATE :			



CONSTRUCTION NOTES

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NORTH

0 40 80

SCALE: 1" = 40'

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
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Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER No. 2617
Signature
12-31-24
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA
FOR PERMIT PURPOSES ONLY

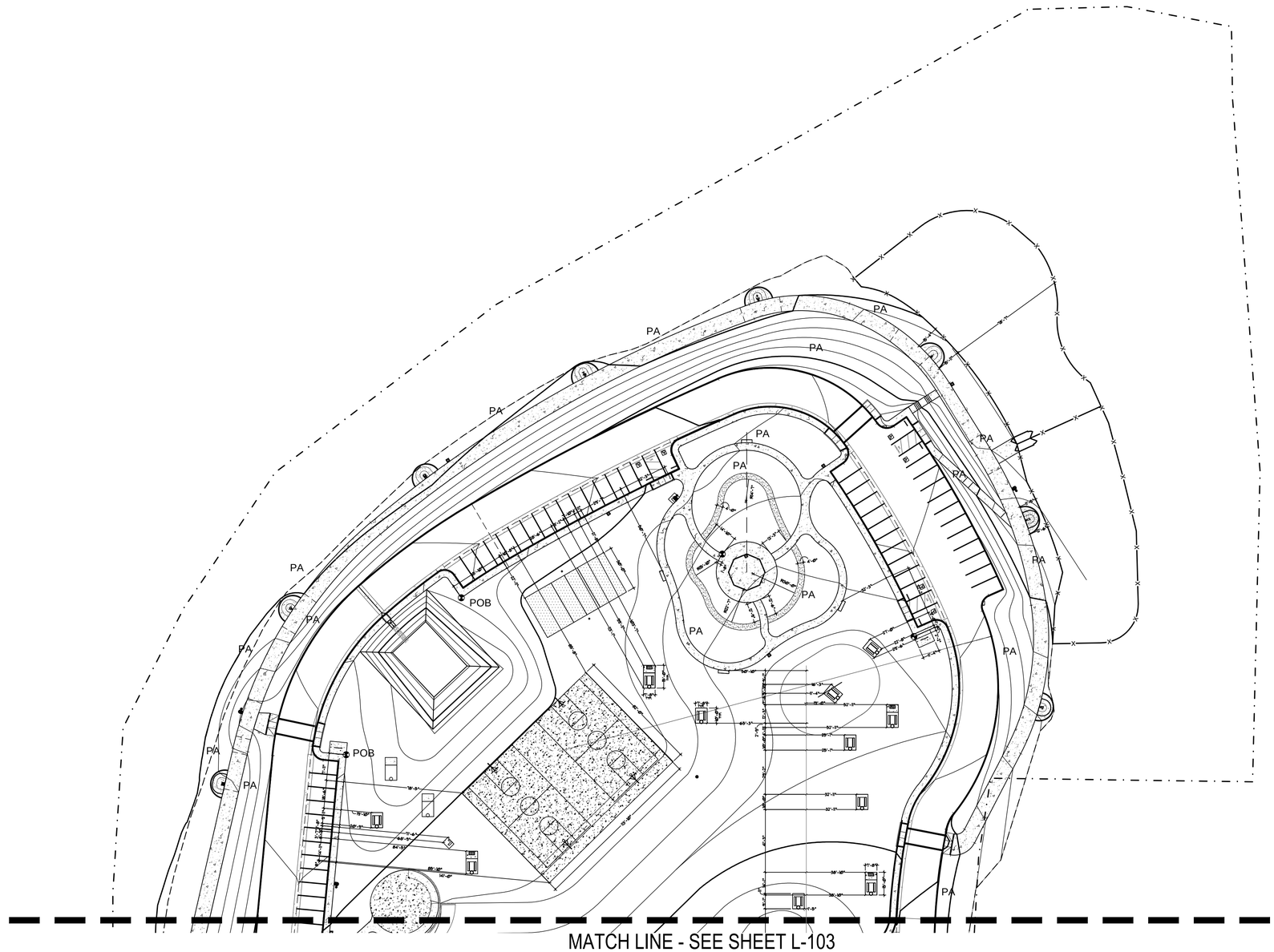
LA HABRA LANDFILL
VISTA GRANDE PARK

CONSTRUCTION LAYOUT PLAN

DESIGNED BY : TMA			
DRAWN BY : TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY : JM	DATE :	L-103	SHEET 29 OF 89
APPROVED BY : RM/JM	DATE :		

WEST LAMBERT ROAD

SOUTH IDAHO STREET



CONSTRUCTION NOTES

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NORTH

0 40 80 120

SCALE: 1" = 40'

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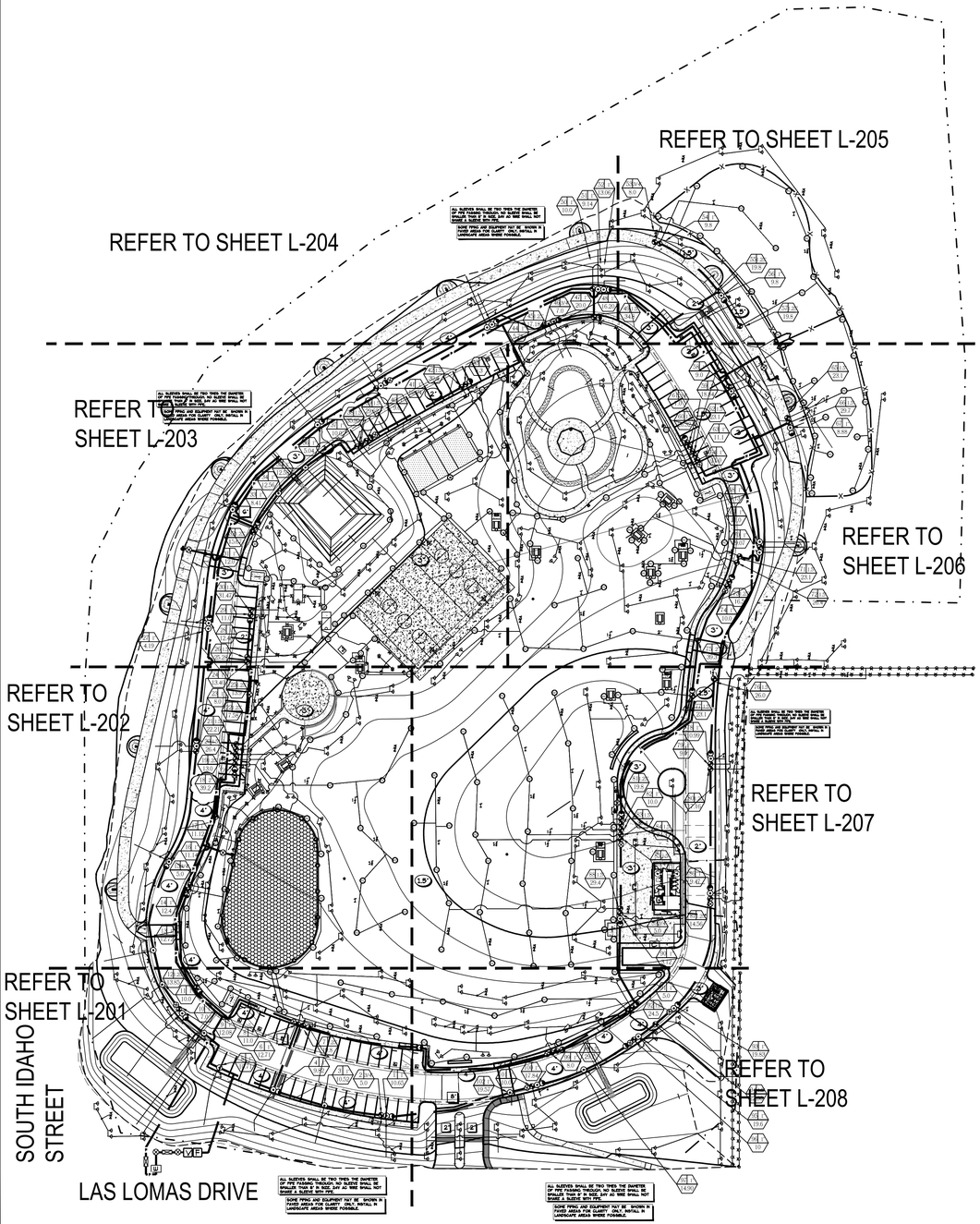
REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER No. 4037
Signature 05-9-24
Renewal Date 06-16-23
Date
STATE OF CALIFORNIA
FOR INTERIM USE ONLY

LA HABRA LANDFILL

VISTA GRANDE PARK

CONSTRUCTION LAYOUT PLAN

DESIGNED BY :	TMA			
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY :	JM	DATE :	L-104	SHEET 30 OF 89
APPROVED BY :	RM/JM	DATE :		



EVAPOTRANSPIRATION (ETo) TABLE:

ETO VALUES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL ETO
	2.2	2.7	3.7	4.7	5.5	5.8	6.2	5.5	5.0	3.9	2.6	1.9	50.1

WATER EFFICIENT WORK SHEET

PROJECT NAME: The Vista Grande Park Renovation Project
PROJECT LOCATION: La Habra Landfill
TOTAL LANDSCAPE AREA: 464,023 sq.ft.

Maxium Applied Water Allowance (MAWA)

MAWA = (ETo) (0.62) [(0.7 x LA) + (0.3 x SLA)]

MAWA= Maximum Applied Water Allowance
ETo = Reference Evapo...
0.62 = Conversion factor (to gallons per square foot)
0.7 = ET Adjustment Factor (ETAF)
LA = Landscaped Area includes Special Landscape Area
0.3 = Additional ET Adjustment Factor for Special Landscape Area (1.0 - 0.7 = 0.3)
SLA - Portion of Landscape Area identified as Special Landscape Area - see Definitions (square feet)

Applicant to fill in boxes below.

50.1	ETo (reference Evapotranspiration from Appendix A (inches per year)
464,023	Landscape Area including Special Landscape Area/SLA (square feet)
222,167	Portion of Landscape Area identified as Special Landscape Area (square feet)

	ETo		ETAF		AREA (s.f.)		Conversion		MAWA
MAWA for LA	50.1	x	0.55	x	464,023	x	0.62	=	7,927,415
*MAWA for SLA**	50.1	x	0.3	x	222,167	x	0.62	=	2,070,285
Total MAWA									9,997,701 *(gallons per year)*

Estimated Total Water Use (ETWU)

ETWU = (ETo) (0.62) [(PF x HA) / IE + SLA)]

ETWU= Estimated ...
ETo = Reference Evapo...
0.62 = Conversion factor (to gallons per square foot)
PF = Plant Factor from WUCOLS (see Definitions)
HA = Hydrozone Area - planting area separated to high, moderate, low and very low water usea areas (square feet)
*IE = Irrigation Efficiency - see Chart ** (minimum 0.71)*
SLA - Portion of Landscape Area identified as Special Landscape Area - see Definitions (square feet)

ETWU arrived from Hydrozone Table below = **8,718,762** gallons per year

HYDROZONE TABLE

hydrozone	*plant water use type*	*plant factor (PF) (see table B)*	*hydrozone area (HA) (square ft.)*	*PFxHA (square ft.)*	*% of landscape area (LA)*	*irrigation efficiency IE*	*Hydro-zone ETWU*
1) Drip	low water	0.2	235,766	47,151	51%	0.85	1,723,071
2) Bubbler	mod..water	0.4	6,100	2,440	1%	0.80	94,739
						Subtotal ETWU	1,817,810
3) Rotor	SLA	0.2	222,167	44,433	48%	0.75	6,900,951
		TOTAL	464,023		100%		8,718,762

CALSENSE TWO WIRE NOTES:
3M SCOTCH CAST 3576DG-N CONNECTORS.
MAX DISTANCE OF 100' BETWEEN STATION DECODER AND VALVE, OR 10' BETWEEN POC DECODER AND MASTER VALVE AND FLOW METER(S).
SPECIFY NUMBER * OF DECODERS NEEDED. POC DECODER NEEDED FOR EACH MASTER VALVE AND FLOW METER. MAXIMUM OF 30 STATION DECODERS AND 10 OTHER TYPE DECODERS. I.E. POC DECODER(S).

TWO WIRE CABLE:
PLEASE SPECIFY PAIGE CABLE P-1384-D OR HUNTER REGENCY CABLE IN CONDUIT. MAXIMUM TOTAL OF ALL RUNS IS 7,000 FEET. AT LEAST 125 " CONDUIT RECOMMENDED.

GROUNDING REQUIREMENTS:
AT CONTROLLER, FIRST AND LAST DECODER AND EVERY 300 FEET OR LONGER AT A DECODER ONLY WITH ONE 5/8-INCH X 8-FOOT, COPPER CLAD GROUNDING ROD.
#6 AWG SOLID COPPER WIRE FROM THE GROUNDING ROD TO THE FIELD COMMON (WHITE WIRES IN THE BLACK HARNESS) OF THE CONTROLLER / OR BUILT IN GREEN GROUNDING WIRE OF DECODER.

NOTE:
TEST ALL SPRINKLER MAINS AFTER PIPE IS LAID AND JOINT COMPLETED BY SUBMITTING TO A PRESSURE TEST OF ONE AND ONE HALF TIMES EXISTING STATIC PRESSURE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. DO NOT BACKFILL ANY TRENCH UNTIL THE OWNER'S REPRESENTATIVE HAS APPROVED THE TEST. REPAIR ANY LEAKS UNTIL LINES MEET TEST REQUIREMENTS AND THE OWNER'S REPRESENTATIVE'S APPROVAL. ALL LATERALS SHALL BE TESTED UNDER MAIN PRESSURE FOR LEAKS; ANY LEAKS SHALL BE REPAIRED. ALL TESTS WITH THE EXCEPTION OF THE LATERALS SHALL BE FOR A DURATION OF 4 HOURS WITH A MAXIMUM DROP OF 4 PSI ALLOWED.

NOTE:
THE IRRIGATION FOR THIS PROJECT IS DESIGNED TO COMPLY WITH THE CITY/DWA WATER EFFICIENT LANDSCAPE ORDINANCE AND WITH THE GUIDELINES FOR IMPLEMENTATION OF THE WATER EFFICIENT LANDSCAPE ORDINANCE. TROLLER MAYER HAS COMPLIED WITH THE CRITERIA OF THE WATER EFFICIENT LANDSCAPE ORDINANCE AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN. THE USE OF SPRAY HEADS, BUBBLERS, AND ROOT WATERING SYSTEM IN DEEP WELL WITH LOW PRECIPITATION RATE, AND NEW SMART CONTROLLER INCLUDING ET/WEATHER-BASED IRRIGATION CONTROLLER

SCH 40 PVC SLEEVING CHART

SLEEVE SIZE	NO. OF WIRES	PIPE SIZE
1 1/4"	1-4 WIRES	1/2"
1 1/2"	5-10 WIRES	3/4"
2"	11-20 WIRES	1"
2 1/2"	21-30 WIRES	1 1/4"

ALL SLEEVES SHALL BE TWO TIMES THE DIAMETER OF PIPE PASSING THROUGH. NO SLEEVE SHALL BE SMALLER THAN 2" IN SIZE. 24V AC WIRE SHALL NOT SHARE A SLEEVE WITH PIPE.

SOME PIPING AND EQUIPMENT MAY BE SHOWN IN PAVED AREAS FOR CLARITY ONLY. INSTALL IN LANDSCAPE AREAS WHERE POSSIBLE.

WATER PRESSURE INFORMATION
ENTITY Public Works Dept-Water Division
CONTACT PERSON (Brian Jones)
DIRECT PHONE (562) 383-4170
DATE 06 / 06 / 2022
PRESSURE: Static-120 P.S.I.

GENERAL NOTES:

1. ALL CONTROL AND COMMON WIRE TO BE AWG #14UF-600 VOLT SOLID COPPER.
2. PROVIDE P.V.C. SCHED. 40 SLEEVES FOR ALL LATERAL AND PRESSURE LINE AND CONTROL WIRING UNDER PAVING. INSTALL WITH 30" OF COVER AND RECOMPACT TO 95%. SEE SPECIAL INSTRUCTION NOTE #6. USE SEPARATE SLEEVES FOR MAINLINE, LATERAL AND WIRE.
3. ACTUAL LOCATION OF AUTOMATIC CONTROLLER TO BE VERIFIED WITH OWNER OR HIS REPRESENTATIVE.
4. IF MAINLINE AND CONTROL VALVES SHOWN IN WALK AREAS, IT IS FOR CLARITY ONLY. ROUTE IN PLANTED AREAS.
5. USE TEFLON TAPE OR DOPE ON ALL MALE PIPE THREADS OF CONTROL ASSEMBLY, SWING JOINT AND BACKFLOW ASSEMBLY.
6. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVERSPRAY ONTO WALKS, ROADWAYS AND/OR BUILDINGS, AS MUCH AS POSSIBLE. THIS SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT EXISTING SITE CONDITIONS AND TO THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH.
7. DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, INCLUDING NEW PLANT MATERIALS, GRADE DIFFERENCES OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT ARE IN CONFLICT WITH THE PLANS. SUCH CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE IN WRITING. IN THE EVENT OF THE NOTIFICATION IS NOT PERFORMED, THE IRRIGATION INSTALLER SHALL ASSUME FULL RESPONSIBILITY FOR ANY ON-SITE ADJUSTMENTS NECESSARY TO MAKE SURE THE SYSTEM PERFORMS AT NO ADDITIONAL COST TO THE OWNER.
8. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATIONS OF WALKS, RETAINING WALLS ETC. HE SHALL COORDINATE HIS WORK WITH THE GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, PAVING STRUCTURES, ETC.
9. INSTALL VALVES IN SHRUB OR GROUND COVER AREAS 12" FROM EXISTING SIDEWALK AS SPACE PERMITS.
10. INSTALL ALL SPRAY HEADS 6" FROM PAVED SURFACES, AS SPACE PERMITS.
11. ALL SPRAY HEADS SHOULD BE ADJUSTED TO MINIMIZE OVERSPRAY ONTO WALKS AND MAXIMIZE COVERAGE.
12. A PLUMBING PERMIT SHALL BE OBTAINED FOR THE IRRIGATION SYSTEM BY THE IRRIGATION CONTRACTOR.
13. THE IRRIGATION CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF ALL FIELD REVISIONS AND SHALL PRESENT THE OWNER AND SHALL PRESENT THE OWNER WITH AN 'AS-BUILT' SET OF SEPIAS AT THE CONCLUSION
14. THE IRRIGATION SYSTEM SHALL BE TESTED IN THE FIELD BEFORE FINAL APPROVAL.

NOTE:
TEST ALL SPRINKLER MAINS AFTER PIPE IS LAID AND JOINT COMPLETED BY SUBMITTING TO A PRESSURE TEST OF ONE AND ONE HALF TIMES EXISTING STATIC PRESSURE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. DO NOT BACKFILL ANY TRENCH UNTIL THE OWNER'S REPRESENTATIVE HAS APPROVED THE TEST. REPAIR ANY LEAKS UNTIL LINES MEET TEST REQUIREMENTS AND THE OWNER'S REPRESENTATIVE'S APPROVAL. ALL LATERALS SHALL BE TESTED UNDER MAIN PRESSURE FOR LEAKS; ANY LEAKS SHALL BE REPAIRED. ALL TESTS WITH THE EXCEPTION OF THE LATERALS SHALL BE FOR A DURATION OF 4 HOURS WITH A MAXIMUM DROP OF 4 PSI ALLOWED.

RAINBIRD REMOTE CONTROL VALVE EFB-CP SERIES (1"-2") AND SUPERIOR 950PRS REMOTE CONTROL VALVE (2.5"), SIZE PER PLAN
DRIP REMOTE CONTROL VALVE, RAINBIRD XCZ-100-PRB-COM
RAINBIRD #33-DLRC QUICK COUPLER VALVE IN BOX
SPEARS 2000 SERIES TRUE UNION BALL VALVE, LINE SIZE
NEW BACKFLOW PREVENTER REBCO 880V-4" WHITE STAINER 75.84.4" INSIDE STRONG BOX SSBC-140CR ENCLOSURE. INSTALL PER LOCAL CODE LOCATION IS APPROXIMATE,
NEW IRRIGATION CONTROLLER CALSENSE CS3-2W-S1CS3-GR-KIT/COMM 5YR/CS-2W-25T (TBD)/CS-2W-POC (1)/FM-3W. For Additional Information: Jeff Drongowski (760) 580-9428 & Ramon Torres (714) 553-3681
NEW 4" SEPARATE IRRIGATION WATER METER. LOCATION IS APPROXIMATE AT THE PRESENT TIME. FINAL LOCATION SHALL BE DETERMINED IN THE FIELD BY THE OWNER REPRESENTATIVE.
CALSENSE FLOW METER FM-4W: 4" PVC SCH 80 Tee-Mounted Ultrasonic Flow Meter. For Additional Information: Ramon Torres (Field Support for Orange County / (714) 553-3681
MASTER VALVE SUPERIOR 3000
DENOTES MAIN LINE PIPE SIZE
DENOTES SLEEVE PIPE SIZE
SLEEVE PIPING, SCHEDULE 40 PVC PIPE SIZE PER PLAN, DEPTH AS NECESSARY
NEW IRRIGATION SYSTEM MAIN PVC SCH 40 (2-1/2" & SMALLER), PVC CL315 (3" TO 4"), & PVC CL200 (6") AT 24" COVER - SIZE PER PLAN
F NEW MAIN LINE PIPING FOR FOUNTAINS, 1" SCHEDULE 40 PVC PIPE 18" COVER
SPRINKLER LATERAL PIPING, SCHEDULE 40 PVC PIPE, SIZE PER PLAN, 12" COVER
ALL PIPING UNDER PAVING SHALL BE SCHEDULE 40 PVC PIPE
DENOTES PIPE SIZE
STATION # VALVE SIZE GPM
TYPICAL VALVE DESIGNATOR

ROOT WATERING SYSTEM

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS
	RAINBIRD RWS	B-C-1402	DEEP WELL	15/10	50	NA

XF SERIES DRIPLINE

SYMBOL	MFGR.	MODEL	G.P.H.	SPACING.	COIL SPACING
	RAINBIRD DRIP	XFS-CV-06-18-100	0.6	18"	250'

RAIN BIRD XFS-CV-06-18 (18)
LANDSCAPE DRIPLINE WITH COPPER SHIELD & CHECK VALVE, 0.6 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 2' APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. INSTALL PER MANUFACTURE RECOMMENDATIONS.

POP-UP BUBBLERS - 2" Pop-up Spray Head

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD 1802	PC6-030	SCST-B	30	30	3'	CENTER STRIP
	RAINBIRD 1802	PC6-030	SQ-B	30	30	3'	90°

LARGE POP-UP TURF ROTORS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD 6504 FALCON	F4-PC-SS	4	40	3.3	41'	ADJUSTABLE
	RAINBIRD 6504 FALCON	F4-PC-SS	6	40	4.9	45'	ADJUSTABLE

INTERMEDIATE TURF ROTORS (RAINBIRD 5000 SERIES @ 25 P.S.I.)

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD 5004-PC-SAM	MPR-35 (BEIGE)	25	1.40	32'	QUARTER	
	RAINBIRD 5004-PC-SAM	MPR-35 (BEIGE)	25	1.77	32'	THIRD	
	RAINBIRD 5004-PC-SAM	MPR-35 (BEIGE)	25	2.75	32'	HALF	
	RAINBIRD 5004-PC-SAM	MPR-35 (BEIGE)	25	5.36	32'	FULL (ADJUSTABLE)	

POP-UP SHRUB SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD 1806 SAM PRS	8H	30	.52	8'	180°	
	RAINBIRD 1806 SAM PRS	8Q	30	.26	8'	90°	

POP-UP TURF SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD 1804 SAM PRS	12F	30	2.60	12'	360°	
	RAINBIRD 1804 SAM PRS	15F	30	3.70	15'	360°	
	RAINBIRD 1804 SAM PRS	15H	30	1.85	15'	180°	
	RAINBIRD 1804 SAM PRS	15T	30	1.23	15'	120°	
	RAINBIRD 1804 SAM PRS	15Q	30	.93	15'	90°	

NORTH
0 40 80 120
SCALE: 1" = 40'

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER No. 2617
Signature 12-31-24
Renewal Date 06-16-23
Date
STATE OF CALIFORNIA
FOR PLANNING PURPOSES ONLY

LA HABRA LANDFILL
VISTA GRANDE PARK

OVERALL IRRIGATION PLAN & KEY MAP

DESIGNED BY : TMA			
DRAWN BY : TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY : JM	DATE :	L-200	SHEET 31 OF 89
APPROVED BY : RM/JM	DATE :		

GENERAL NOTES:

1. ALL CONTROL AND COMMON WIRE TO BE AWG #14UF-600 VOLT SOLID COPPER.
2. PROVIDE P.V.C. SCHED. 40 SLEEVES FOR ALL LATERAL AND PRESSURE LINE AND CONTROL WIRING UNDER PAVING. INSTALL WITH 30" OF COVER AND RECOMPACT TO 95%. SEE SPECIAL INSTRUCTION NOTE #6. USE SEPARATE SLEEVES FOR MAINLINE, LATERAL AND WIRE.
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14. THE IRRIGATION SYSTEM SHALL BE TESTED IN THE FIELD BEFORE FINAL APPROVAL.

CALSENSE TWO WIRE NOTES:
3M SCOTCH CAST 3570G-N CONNECTORS.
MAX DISTANCE OF 100' BETWEEN STATION DECODER AND VALVE, OR 10' BETWEEN POC DECODER AND MASTER VALVE AND FLOW METER(S).
SPECIFY NUMBER # OF DECODERS NEEDED. POC DECODER NEEDED FOR EACH MASTER VALVE AND FLOW METER. MAXIMUM OF 10 STATION DECODERS AND 10 OTHER TYPE DECODERS. I.E. POC DECODER(S).

TWO WIRE CABLE:
PLEASE SPECIFY PAIGE CABLE P-7354-D OR HUNTER REGENCY CABLE IN CONDUIT. MAXIMUM TOTAL OF ALL RUNS IS 7,000 FEET. AT LEAST 1.25 " CONDUIT RECOMMENDED.

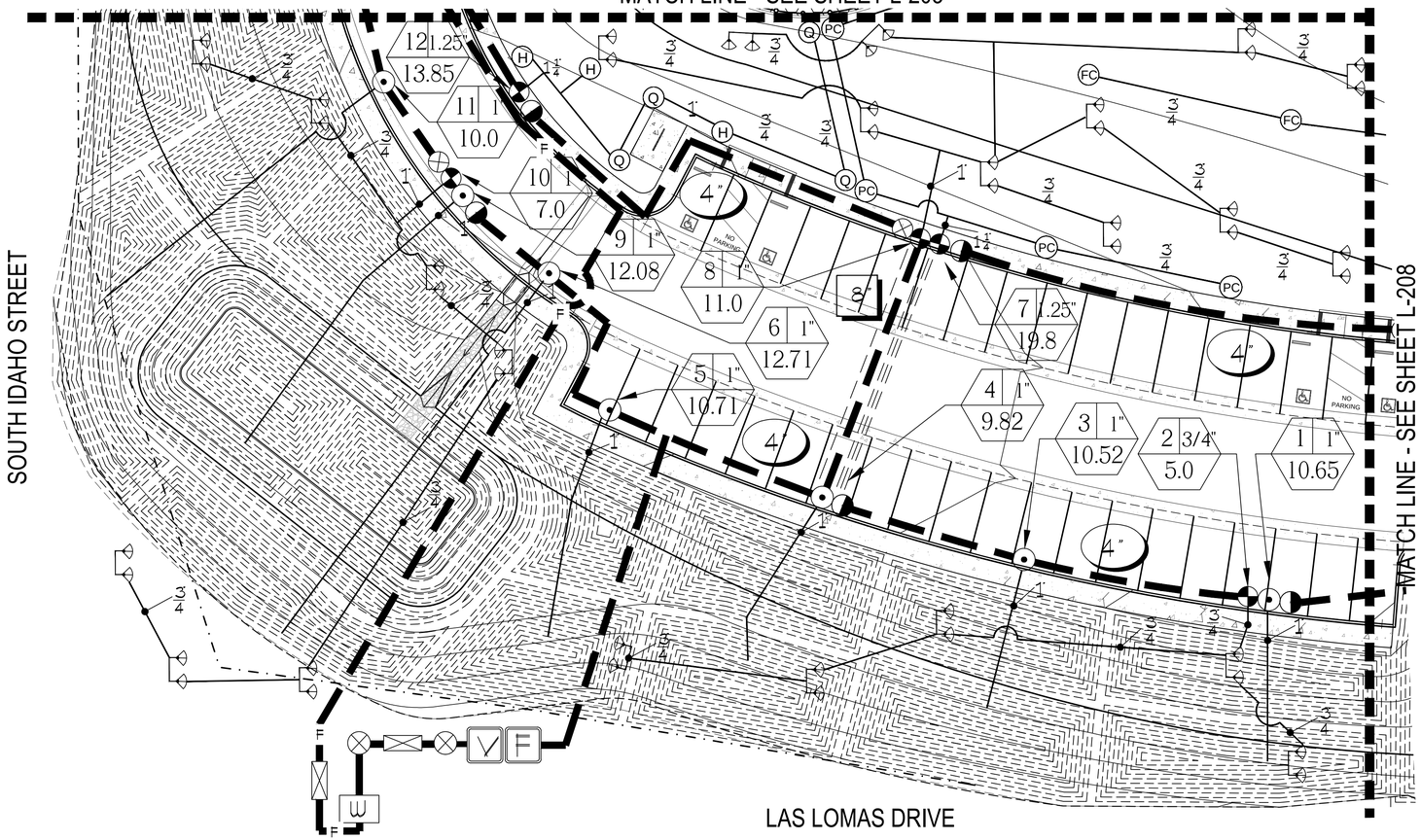
GROUNDING REQUIREMENTS:
AT CONTROLLER, FIRST AND LAST DECODER AND EVERY 300 FEET OR LONGER AT A DECODER ONLY WITH ONE 5/8-INCH X 8-FOOT, COPPER CLAD GROUNDING ROD.
#6 AWG SOLID COPPER WIRE FROM THE GROUNDING ROD TO THE FIELD COMMON (WHITE WIRES IN THE BLACK HARNESS) OF THE CONTROLLER / OR BUILT IN GREEN GROUNDING WIRE OF DECODER.

NOTE:

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NOTE:
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MATCH LINE - SEE SHEET L-203



SCH 40 PVC SLEEVING CHART

SLEEVE SIZE	NO. OF WIRES	PIPE SIZE
1 1/4"	1-4 WIRES	1/2"
1 1/2"	5-10 WIRES	3/4"
2"	11-20 WIRES	1"
2 1/2"	21-30 WIRES	1 1/4"

ALL SLEEVES SHALL BE TWO TIMES THE DIAMETER OF PIPE PASSING THROUGH. NO SLEEVE SHALL BE SMALLER THAN 8" IN SIZE. 24V AC WIRE SHALL NOT SHARE A SLEEVE WITH PIPE.

SOME PIPING AND EQUIPMENT MAY BE SHOWN IN PAVED AREAS FOR CLARITY ONLY. INSTALL IN LANDSCAPE AREAS WHERE POSSIBLE.

WATER PRESSURE INFORMATION	
ENTITY	Public Works Dept-Water Division
CONTACT PERSON DIRECT PHONE	(Brian Jones) (562) 383-4110
DATE	06 / 06 / 2022
PRESSURE:	Static-120P.S.I.

MAIN LINE AND RELATED EQUIPMENT

- RAINBIRD REMOTE CONTROL VALVE EFB-CP SERIES (1"-2")AND SUPERIOR #5BDPRS REMOTE CONTROL VALVE (2.5"). SIZE PER PLAN
- DRIP REMOTE CONTROL VALVE, RAINBIRD XCZ-100-PRB-COM
- RAINBIRD #33-DLRC QUICK COUPLER VALVE IN BOX
- SPEARS 2000 SERIES TRUE UNION BALL VALVE, LINE SIZE
- NEW BACKFLOW PREVENTER FEBCO 880V-4" WILKYE STAINER 7584-4" INSIDE STRONG BOX SSBC-40CR ENCLOSURE. INSTALL PER LOCAL CODE LOCATION IS APPROXIMATE.
- C — NEW IRRIGATION CONTROLLER CALSENSE CS3-2U-SI/CS3-GR-KIT/COMM 5YR/CS-2U-25T (TBD)/CS-2U-POC (1)/FM-3U. For Additional Information: Jeff Drongowski (760) 580-9428 & Ramon Torres (714) 553-3681
- M — NEW 4" SEPARATE IRRIGATION WATER METER. LOCATION IS APPROXIMATE AT THE PRESENT TIME. FINAL LOCATION SHALL BE DETERMINED IN THE FIELD BY THE OWNER REPRESENTATIVE.
- F — CALSENSE FLOW METER FM-4U: 4" PVC SCH 80 Tee-Mounted Ultrasonic Flow Meter. For Additional Information: Ramon Torres (Field Support for Orange County / (714) 553-3681
- V — MASTER VALVE SUPERIOR 3000
- DENOTES MAIN LINE PIPE SIZE
- DENOTES SLEEVE PIPE SIZE
- SLEEVE PIPING, SCHEDULE 40 PVC PIPE SIZE PER PLAN, DEPTH AS NECESSARY
- NEW IRRIGATION SYSTEM MAIN PVC SCH 40 (2-1/2" & SMALLER), PVC CL315 (3" TO 4"), & PVC CL200 (6") AT 24" COVER - SIZE PER PLAN
- F — NEW MAIN LINE PIPING FOR FOUNTAINS, 1" SCHEDULE 40 PVC PIPE 18" COVER
- SPRINKLER LATERAL PIPING, SCHEDULE 40 PVC PIPE, SIZE PER PLAN, 12" COVER
  ALL PIPING UNDER PAVING SHALL BE SCHEDULE 40 PVC PIPE
  DENOTES PIPE SIZE
- STATION # / VALVE SIZE / G.P.M. — TYPICAL VALVE DESIGNATOR

ROOT WATERING SYSTEM

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS
	RAINBIRD RWB	B-C-1402	DEEP WELL	15/10	50	NA

XF SERIES DRIPLINE

SYMBOL	MFGR.	MODEL	G.P.H.	SPACING.	COIL SPACING
	RAINBIRD DRIP	XFS-CV-06-18-100	0.6	18"	250'

RAIN BIRD XFS-CV-06-18 (18)
LANDSCAPE DRIPLINE WITH COPPER SHIELD & CHECK VALVE, 0.6 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. INSTALL PER MANUFACTURE RECOMMENDATIONS.

POP-UP BUBBLERS - 2" Pop-up Spray Head

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD 1802	PCS-03@	5CST-B	30	3@	3'	CENTER STRIP
	RAINBIRD 1802	PCS-03@	5Q-B	30	3@	3'	90°

LARGE POP-UP TURF ROTORS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD 6504 FALCON	F4-PC-55	4	40	3.3	41'	ADJUSTABLE
	RAINBIRD 6504 FALCON	F4-PC-55	6	40	4.9	45'	ADJUSTABLE

INTERMEDIATE TURF ROTORS (RAINBIRD 5000 SERIES @ 25 P.S.I.)

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
Q	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	1.40	32'	QUARTER
T	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	1.77	32'	THIRD
H	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	2.75	32'	HALF
F	RAINBIRD	5004-FC-SAM	MPR-35 (BEIGE)	25	5.36	32'	FULL (ADJUSTABLE)

POP-UP SHRUB SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD	1806 SAM PRS	8H	30	.52	8'	180°
	RAINBIRD	1806 SAM PRS	8Q	30	.26	8'	90°

POP-UP TURF SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD	1804 SAM PRS	12F	30	2.60	12'	360°
	RAINBIRD	1804 SAM PRS	15F	30	3.70	15'	360°
	RAINBIRD	1804 SAM PRS	15H	30	1.85	15'	180°
	RAINBIRD	1804 SAM PRS	15T	30	1.23	15'	120°
	RAINBIRD	1804 SAM PRS	15Q	30	.93	15'	90°

0 16 32 48
SCALE: 1/16" = 1'-0"
NORTH

Troller Mayer Associates, Inc
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Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

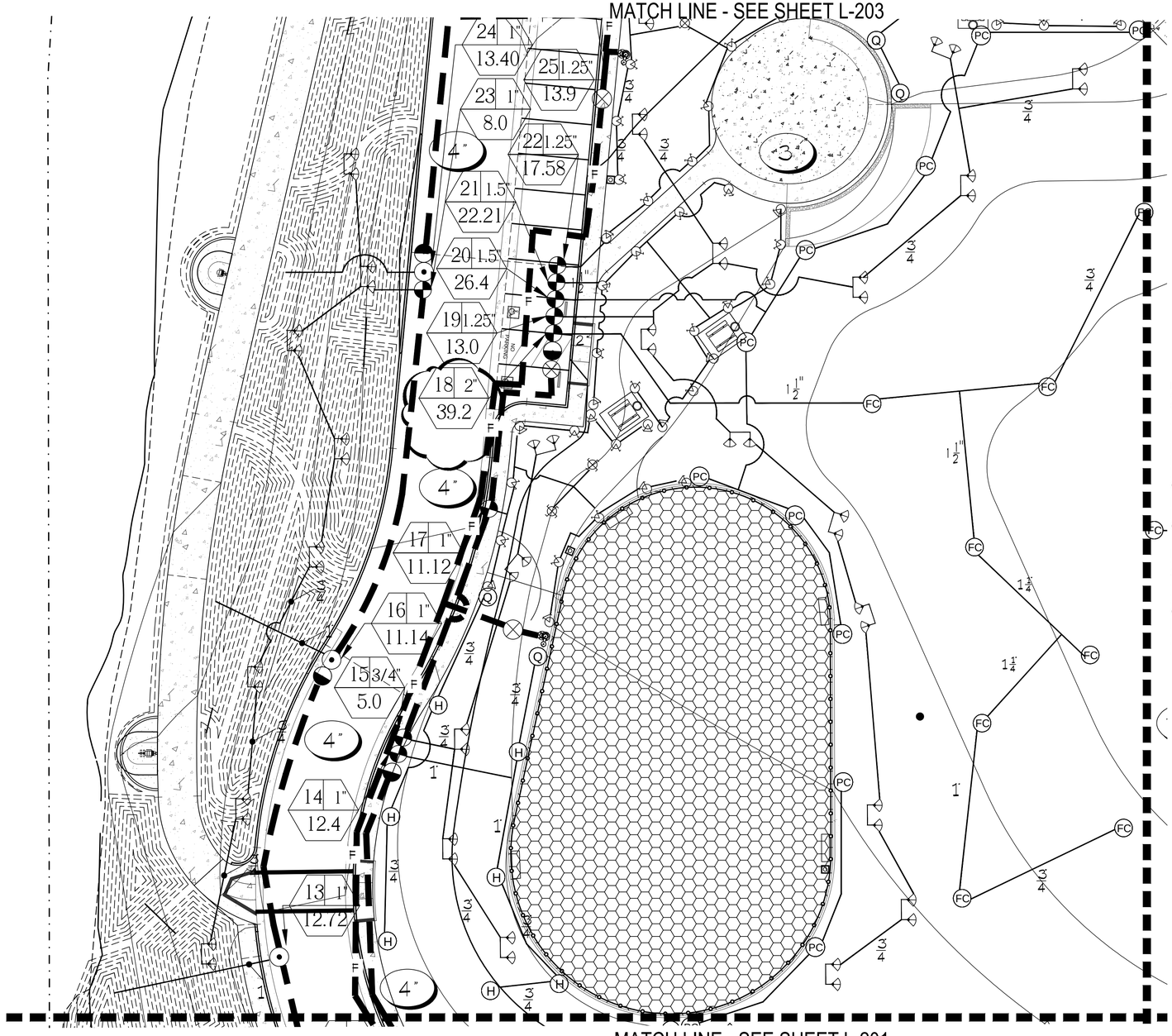
CITY OF LA HABRA — A CARING COMMUNITY — EST. 1925

TETRA TECH
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Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT — JERARD W. MAYER — No. 2637 — STATE OF CALIFORNIA — Signature 12-31-24 — Renewal Date — 06-16-23 — Date

LA HABRA LANDFILL
VISTA GRANDE PARK
IRRIGATION PLAN

DESIGNED BY : TMA			
DRAWN BY : TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY : JM	DATE :	L-201	SHEET 32 OF 89
APPROVED BY : RM/JM	DATE :		



GENERAL NOTES:

1. ALL CONTROL AND COMMON WIRE TO BE #14UF-600 VOLT SOLID COPPER.
2. PROVIDE P.V.C. SCHED. 40 SLEEVES FOR ALL LATERAL AND PRESSURE LINE AND CONTROL WIRING UNDER PAVING. INSTALL WITH 30" OF COVER AND RECOMPACT TO 95% SEE SPECIAL INSTRUCTION NOTE #6. USE SEPARATE SLEEVES FOR MAINLINE, LATERAL AND WIRE.
3. ACTUAL LOCATION OF AUTOMATIC CONTROLLER TO BE VERIFIED WITH OWNER OR HIS REPRESENTATIVE.
4. 1" MAINLINE AND CONTROL VALVES SHOWN IN WALK AREAS. IT IS FOR CLARITY ONLY. ROUTE IN PLANTED AREAS.
5. USE TEFLON TAPE OR DOPE ON ALL MALE PIPE THREADS OF CONTROL ASSEMBLY, SWING JOINT AND BACKFLOW ASSEMBLY.
6. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVERSPRAY ONTO WALKS, ROADWAYS AND/OR BUILDINGS. AS HIGH AS POSSIBLE. THIS SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT EXISTING SITE CONDITIONS AND TO THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH.
7. DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, INCLUDING NEW PLANT MATERIALS, GRADE DIFFERENCES OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT ARE IN CONFLICT WITH THE PLANS. SUCH CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE IN WRITING. IN THE EVENT OF THE NOTIFICATION IS NOT PERFORMED. THE IRRIGATION INSTALLER SHALL ASSUME FULL RESPONSIBILITY FOR ANY ON-SITE ADJUSTMENTS NECESSARY TO MAKE SURE THE SYSTEM PERFORMS AT NO ADDITIONAL COST TO THE OWNER.
8. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATIONS OF WALKS, RETAINING WALLS ETC. HE SHALL COORDINATE HIS WORK WITH THE GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, PAVING STRUCTURES, ETC.
9. INSTALL VALVES IN SHRUB OR GROUND COVER AREAS 12" FROM EXISTING SIDEWALK AS SPACE PERMITS.
10. INSTALL ALL SPRAY HEADS 6" FROM PAVED SURFACES, AS SPACE PERMITS.
11. ALL SPRAY HEADS SHALL BE ADJUSTED TO MINIZE OVERSPRAY ONTO WALKS AND MAXIMIZE COVERAGE.
12. A PLUMBING PERMIT SHALL BE OBTAINED FOR THE IRRIGATION SYSTEM BY THE IRRIGATION CONTRACTOR.
13. THE IRRIGATION CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF ALL FIELD REVISIONS AND SHALL PRESENT THE OWNER AND SHALL PRESENT THE OWNER WITH AN "AS-BUILT" SET OF SEPIAS AT THE CONCLUSION
14. THE IRRIGATION SYSTEM SHALL BE TESTED IN THE FIELD BEFORE FINAL APPROVAL.

NOTE:
TEST ALL SPRINKLER MAINS AFTER PIPE IS LAID AND JOINT COMPLETED BY SUBMITTING TO A PRESSURE TEST OF ONE AND ONE HALF TIMES EXISTING STATIC PRESSURE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. DO NOT BACKFILL ANY TRENCH UNTIL THE OWNER'S REPRESENTATIVE HAS APPROVED THE TEST. REPAIR ANY LEAKS UNTIL LINES TEST TEST REQUIREMENTS AND THE OWNER'S REPRESENTATIVE'S APPROVAL ALL LATERALS SHALL BE TESTED UNDER MAN PRESSURE FOR LEAKS; ANY LEAKS SHALL BE REPAIRED. ALL TESTS WITH THE EXCEPTION OF THE LATERALS SHALL BE FOR A DURATION OF 4 HOURS WITH A MAXIMUM DROP OF 4 PSI ALLOWED.

CALSENSE TWO WIRE NOTES:
3M SCOTCH CAST 3570G-14 CONNECTORS.
MAX DISTANCE OF 1000' BETWEEN STATION DECODER AND VALVE, OR 18' BETWEEN POC DECODER AND MASTER VALVE AND FLOW METER(S).
SPECIFY NUMBER # OF DECODERS NEEDED. POC DECODER NEEDED FOR EACH MASTER VALVE AND FLOW METER. MAXIMUM OF 30 STATION DECODERS AND 10 OTHER TYPE DECODERS. I.E. POC DECODER(S).

TWO WIRE CABLE:
PLEASE SPECIFY PAIGE CABLE P-1284-D OR HUNTER REGENCY CABLE IN CONDUIT. MAXIMUM TOTAL OF ALL RUNS IS 12000 FEET. AT LEAST 1/2" CONDUIT RECOMMENDED.

GROUNDING REQUIREMENTS:
AT CONTROLLER, FIRST AND LAST DECODER AND EVERY 300 FEET OR LONGER AT A DECODER ONLY WITH ONE 5/8-INCH X 8-FOOT, COPPER CLAD GROUNDING ROD.
#6 AWG SOLID COPPER WIRE FROM THE GROUNDING ROD TO THE FIELD COMMON (WHITE WIRES IN THE BLACK HARNESS) OF THE CONTROLLER / OR BUILT IN GREEN GROUNDING WIRE OF DECODER.

NOTE:
TEST ALL SPRINKLER MAINS AFTER PIPE IS LAID AND JOINT COMPLETED BY SUBMITTING TO A PRESSURE TEST OF ONE AND ONE HALF TIMES EXISTING STATIC PRESSURE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. DO NOT BACKFILL ANY TRENCH UNTIL THE OWNER'S REPRESENTATIVE HAS APPROVED THE TEST. REPAIR ANY LEAKS UNTIL LINES TEST TEST REQUIREMENTS AND THE OWNER'S REPRESENTATIVE'S APPROVAL ALL LATERALS SHALL BE TESTED UNDER MAN PRESSURE FOR LEAKS; ANY LEAKS SHALL BE REPAIRED. ALL TESTS WITH THE EXCEPTION OF THE LATERALS SHALL BE FOR A DURATION OF 4 HOURS WITH A MAXIMUM DROP OF 4 PSI ALLOWED.

NOTE:
THIS IRRIGATION PLAN THIS PROJECT IS DESIGNED TO COMPLY WITH THE CITY/COUNTY WATER EFFICIENT LANDSCAPE ORDINANCE AND SHALL STATE TO BE DISCUSSED HOW THE IMPLEMENTATION OF THE WATER EFFICIENT LANDSCAPE ORDINANCE TROUBLESHOOTING HAS COMPLIED WITH THE CRITERIA OF THE WATER EFFICIENT LANDSCAPE ORDINANCE AND ADHERED THEIR ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN. THE USE OF SPRAY HEADS, ROTATORS, DRIP SYSTEMS, HYDROZONES, SOIL TYPES, PLANT FACTORS, IRRIGATION RATE, AND NEW IRRIGATION CONTROLLER INCLUDING SMART/WEATHER-BASED IRRIGATION CONTROLLER

SCH 40 PVC SLEEVING CHART

SLEEVE SIZE	NO. OF WIRES	PIPE SIZE
1 1/4"	1-4 WIRES	1/2"
1 1/2"	5-10 WIRES	3/4"
2"	11-20 WIRES	1"
2 1/2"	21-30 WIRES	1 1/4"

ALL SLEEVES SHALL BE TWO TIMES THE DIAMETER OF PIPE PASSING THROUGH. NO SLEEVE SHALL BE SMALLER THAN 5" IN SIZE. 24V AC WIRE SHALL NOT SHARE A SLEEVE WITH PIPE.

SOME PIPING AND EQUIPMENT MAY BE SHOWN IN PAVED AREAS FOR CLARITY ONLY. INSTALL IN LANDSCAPE AREAS WHERE POSSIBLE.

WATER PRESSURE INFORMATION
ENTITY: Public Works Dept-Water Division
CONTACT PERSON: (Brian Jones)
DIRECT PHONE: (562) 383-4150
DATE: 06/06/2022
PRESSURE: Static-DDP S.I.

MAIN LINE AND RELATED EQUIPMENT

- RAINBIRD REMOTE CONTROL VALVE EFB-CP SERIES (1"-2")AND SUPERIOR PSIOPRS REMOTE CONTROL VALVE (2.5") SIZE PER PLAN
- DRIP REMOTE CONTROL VALVE, RAINBIRD XCZ-100-PRB-COM
- RAINBIRD #53-DLRC QUICK COUPLER VALVE IN BOX
- SPEARS 2000 SERIES TRUE UNION BALL VALVE, LINE SIZE
- NEW BACKFLOW PREVENTER FEBCO 880V-4" W/AYE STAINER 758A-4" INSIDE STRONG BOX SBBC-402CR ENCLOSURE. INSTALL PER LOCAL CODE LOCATION IS APPROXIMATE,
- NEW IRRIGATION CONTROLLER CALSENSE CS5-2W-SI/CS5-GR-KIT/COMM SYRIOS-2W-25T (TBD)/CS-2W-POC (1)PM-3L) For Additional Information: Jeff Drongowski (760) 580-3428 & Ramon Torres (714) 553-3681
- NEW 4" SEPARATE IRRIGATION WATER METER. LOCATION IS APPROXIMATE AT THE PRESENT TIME. FINAL LOCATION SHALL BE DETERMINED IN THE FIELD BY THE OWNER REPRESENTATIVE.
- CALSENSE FLOW METER FM-4U: 4" PVC SCH 80 Tee-Mounted Ultrasonic Flow Meter. For Additional Information: Ramon Torres (Field Support for Orange County / (714) 553-3681
- MASTER VALVE SUPERIOR 3000
- DENOTES MAIN LINE PIPE SIZE
- DENOTES SLEEVE PIPE SIZE
- SLEEVE PIPING, SCHEDULE 40 PVC PIPE SIZE PER PLAN, DEPTH AS NECESSARY
- NEW IRRIGATION SYSTEM MAIN PVC SCH 40 (2-1/2" & SMALLER); PVC CL315 (3" TO 4"); & PVC CL200 (6") AT 24" COVER - SIZE PER PLAN
- F NEW MAIN LINE PIPING FOR FOUNTAINS, 1" SCHEDULE 40 PVC PIPE 18" COVER
- SPRINKLER LATERAL PIPING, SCHEDULE 40 PVC PIPE, SIZE PER PLAN, 12" COVER
  ALL PIPING UNDER PAVING SHALL BE SCHEDULE 40 PVC PIPE
  DENOTES PIPE SIZE

STATION * VALVE SIZE G.P.M.

TYPICAL VALVE DESIGNATOR

ROOT WATERING SYSTEM

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS
◊	RAINBIRD RWB	B-C-1402	DEEP WELL	15/10	30	NA

XF SERIES DRIPLINE

SYMBOL	MFGR.	MODEL	G.P.H.	SPACING.	COIL SPACING
[ ]	RAINBIRD DRIP	XFS-CV-06-18-100	0.6	18"	250'

RAIN BIRD XFS-CV-06-18 (18)
LANDSCAPE DRIPLINE WITH COPPER SHIELD 4 CHECK VALVE, 06 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. INSTALL PER MANUFACTURE RECOMMENDATIONS.

POP-UP BUBBLERS - 2" Pop-up Spray Head

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
⊸	RAINBIRD 1802	PCS-03Ø	5CST-B	30	30	3'	CENTER STRIP
⊻	RAINBIRD 1802	PCS-03Ø	5Q-B	30	30	3'	90°

LARGE POP-UP TURF ROTORS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
⊛	RAINBIRD 5004 FALCON	F4-PC-SS	4	40	3.3	41'	ADJUSTABLE
⊛	RAINBIRD 5004 FALCON	F4-PC-SS	6	40	4.9	45'	ADJUSTABLE

INTERMEDIATE TURF ROTORS (RAINBIRD 5000 SERIES @ 25 P.S.I.)

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
Q	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	1.40	32'	QUARTER
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H	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	2.75	32'	HALF
F	RAINBIRD	5004-FC-SAM	MPR-35 (BEIGE)	25	5.36	32'	FULL (ADJUSTABLE)

POP-UP SHRUB SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
⊠	RAINBIRD	1806 SAM PRS	8M	30	.52	8'	180°
⊠	RAINBIRD	1806 SAM PRS	8Q	30	.26	8'	90°

POP-UP TURF SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
⊠	RAINBIRD	1804 SAM PRS	12F	30	2.60	12'	360°
⊠	RAINBIRD	1804 SAM PRS	15F	30	3.70	15'	360°
⊠	RAINBIRD	1804 SAM PRS	15H	30	1.85	15'	180°
⊠	RAINBIRD	1804 SAM PRS	15T	30	1.23	15'	120°
⊠	RAINBIRD	1804 SAM PRS	15Q	30	.93	15'	90°

0 16 32 48
SCALE: 1/16" = 1'-0"
NORTH

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NO.	REVISION DESCRIPTION	BY:

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Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER No. 1017
Signature 12-31-24
Renewal Date 06-16-23
Date
STATE OF CALIFORNIA

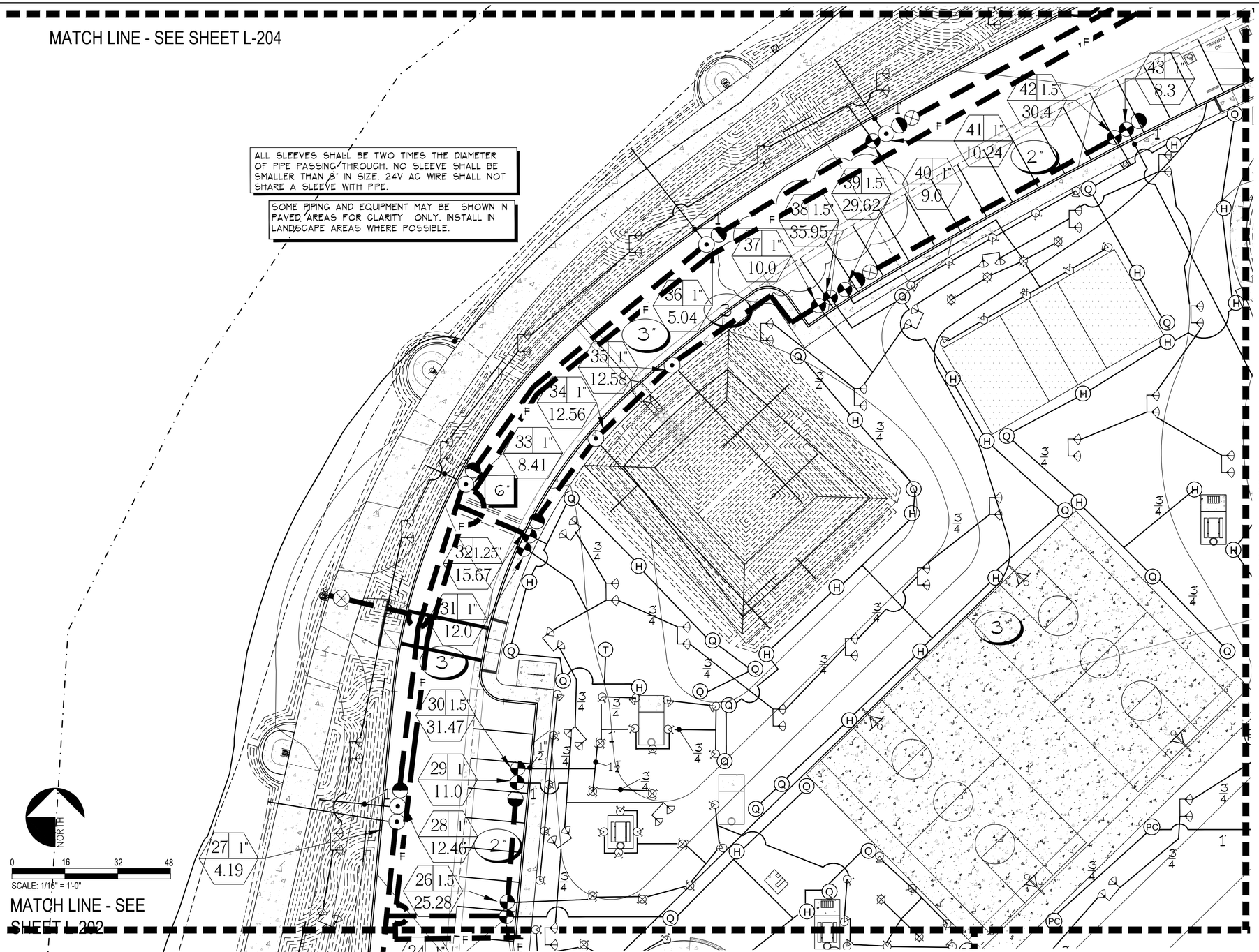
LA HABRA LANDFILL
VISTA GRANDE PARK
IRRIGATION PLAN

DESIGNED BY : TMA			
DRAWN BY : TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY : JM	DATE :	L-202	SHEET 33 OF 89
APPROVED BY : RM/JM	DATE :		

MATCH LINE - SEE SHEET L-204

ALL SLEEVES SHALL BE TWO TIMES THE DIAMETER OF PIPE PASSING THROUGH. NO SLEEVE SHALL BE SMALLER THAN 3" IN SIZE. 24V AC WIRE SHALL NOT SHARE A SLEEVE WITH PIPE.

SOME PIPING AND EQUIPMENT MAY BE SHOWN IN PAVED AREAS FOR CLARITY ONLY. INSTALL IN LANDSCAPE AREAS WHERE POSSIBLE.



MAIN LINE AND RELATED EQUIPMENT

- RAINBIRD REMOTE CONTROL VALVE EFB-CP SERIES (1"-2")AND SUPERIOR 950DPRS REMOTE CONTROL VALVE (2.5"), SIZE PER PLAN
- DRIP REMOTE CONTROL VALVE, RAINBIRD XCZ-100-PRB-COM
- RAINBIRD 53-DLRC QUICK COUPLER VALVE IN BOX
- SPEARS 2000 SERIES TRUE UNION BALL VALVE, LINE SIZE
- NEW BACKFLOW PREVENTER FEBCO 880V-4" WAYE STAINER 758A-4" INSIDE STRONG BOX SBBC-40CR ENCLOSURE. INSTALL PER LOCAL CODE LOCATION IS APPROXIMATE,
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- MASTER VALVE SUPERIOR 3000
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- DENOTES SLEEVE PIPE SIZE
- SLEEVE PIPING, SCHEDULE 40 PVC PIPE SIZE PER PLAN, DEPTH AS NECESSARY
- NEW IRRIGATION SYSTEM MAIN PVC SCH 40 (2-1/2" & SMALLER), PVC CL315 (3" TO 4"), & PVC CL200 (6") AT 24" COVER - SIZE PER PLAN
- F NEW MAIN LINE PIPING FOR FOUNTAINS, 1" SCHEDULE 40 PVC PIPE 18" COVER
- SPRINKLER LATERAL PIPING, SCHEDULE 40 PVC PIPE, SIZE PER PLAN, 12" COVER. ALL PIPING UNDER PAVING SHALL BE SCHEDULE 40 PVC PIPE DENOTES PIPE SIZE

STATION # — VALVE SIZE — G.P.M.

TYPICAL VALVE DESIGNATOR

ROOT WATERING SYSTEM

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS
◊	RAINBIRD RWB	B-C-1402	DEEP WELL	15/10	50	NA

XF SERIES DRIPLINE

SYMBOL	MFGR.	MODEL	G.P.H.	SPACING.	COIL SPACING
	RAINBIRD DRIP	XFS-CV-06-18-100	0.6	18"	250'

RAIN BIRD XFS-CV-06-18 (18)
LANDSCAPE DRIPLINE WITH COPPER SHIELD & CHECK VALVE, 0.6 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. INSTALL PER MANUFACTURE RECOMMENDATIONS.

POP-UP BUBBLERS - 2" Pop-up Spray Head

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
●	RAINBIRD 1802	PCS-03@	5CST-B	30	30	3'	CENTER STRIP
◐	RAINBIRD 1802	PCS-03@	5Q-B	30	30	3'	90°

LARGE POP-UP TURF ROTORS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
⊗	RAINBIRD 6504 FALCON	F4-PC-SS	4	40	3.3	41'	ADJUSTABLE
⊗	RAINBIRD 6504 FALCON	F4-PC-SS	6	40	4.9	45'	ADJUSTABLE

INTERMEDIATE TURF ROTORS (RAINBIRD 5000 SERIES @ 25 P.S.I.)

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
Q	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	1.40	32'	QUARTER
T	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	1.77	32'	THIRD
H	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	2.75	32'	HALF
F	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	5.36	32'	FULL (ADJUSTABLE)

POP-UP SHRUB SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
⊗	RAINBIRD	1806 SAM PRS	8H	30	.52	8'	180°
⊗	RAINBIRD	1806 SAM PRS	8Q	30	.26	8'	90°

POP-UP TURF SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
⊗	RAINBIRD	1804 SAM PRS	12F	30	2.60	12'	360°
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⊗	RAINBIRD	1804 SAM PRS	15H	30	1.85	15'	180°
⊗	RAINBIRD	1804 SAM PRS	15T	30	1.23	15'	120°
⊗	RAINBIRD	1804 SAM PRS	15Q	30	.93	15'	90°

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E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT — JERARD W. MAYER — No. 2437 — STATE OF CALIFORNIA — Signature — Renewal Date 12-31-24 — 06-16-23 Date — FOR PLANNING PURPOSES ONLY

LA HABRA LANDFILL
VISTA GRANDE PARK
IRRIGATION PLAN

DESIGNED BY :	TMA		
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN
CHECKED BY :	JM	DATE :	L-203
APPROVED BY :	RM/JM	DATE :	SHEET 34 OF 89

GENERAL NOTES:

1. ALL CONTROL AND COMMON WIRE TO BE AWG #14UF-600 VOLT SOLID COPPER.
2. PROVIDE P.V.C. SCHED. 40 SLEEVES FOR ALL LATERAL AND PRESSURE LINE AND CONTROL WIRING UNDER PAVING. INSTALL WITH 30" OF COVER AND RECOMPACT TO 95%. SEE SPECIAL INSTRUCTION NOTE #6. USE SEPARATE SLEEVES FOR MAINLINE, LATERAL AND WIRE.
3. ACTUAL LOCATION OF AUTOMATIC CONTROLLER TO BE VERIFIED WITH OWNER OR HIS REPRESENTATIVE.
4. IF MAINLINE AND CONTROL VALVES SHOWN IN WALK AREAS, IT IS FOR CLARITY ONLY. ROUTE IN PLANTED AREAS.
5. USE TEFLON TAPE OR DOPE ON ALL MALE PIPE THREADS OF CONTROL ASSEMBLY, SWING JOINT AND BACKFLOW ASSEMBLY.
6. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVERSPRAY ONTO WALKS, ROADWAYS AND/OR BUILDINGS, AS MUCH AS POSSIBLE. THIS SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT EXISTING SITE CONDITIONS AND TO THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH.
7. DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, INCLUDING NEW PLANT MATERIALS, GRADE DIFFERENCES OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT ARE IN CONFLICT WITH THE PLANS. SUCH CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE IN WRITING. IN THE EVENT OF THE NOTIFICATION IS NOT PERFORMED, THE IRRIGATION INSTALLER SHALL ASSUME FULL RESPONSIBILITY FOR ANY ON-SITE ADJUSTMENTS NECESSARY TO MAKE SURE THE SYSTEM PERFORMS AT NO ADDITIONAL COST TO THE OWNER.
8. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATIONS OF WALKS, RETAINING WALLS ETC. HE SHALL COORDINATE HIS WORK WITH THE GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, PAVING STRUCTURES, ETC.
9. INSTALL VALVES IN SHRUB OR GROUND COVER AREAS 12" FROM EXISTING SIDEWALK AS SPACE PERMITS.
10. INSTALL ALL SPRAY HEADS 6" FROM PAVED SURFACES, AS SPACE PERMITS.
11. ALL SPRAY HEADS SHOULD BE ADJUSTED TO MINIMIZE OVERSPRAY ONTO WALKS AND MAXIMIZE COVERAGE.
12. A PLUMBING PERMIT SHALL BE OBTAINED FOR THE IRRIGATION SYSTEM BY THE IRRIGATION CONTRACTOR.
13. THE IRRIGATION CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF ALL FIELD REVISIONS AND SHALL PRESENT THE OWNER AND SHALL PRESENT THE OWNER WITH AN 'AS-BUILT' SET OF SEPIAS AT THE CONCLUSION
14. THE IRRIGATION SYSTEM SHALL BE TESTED IN THE FIELD BEFORE FINAL APPROVAL.

CALSENSE TWO WIRE NOTES:
3M SCOTCH CAST 3570G-N CONNECTORS.
MAX DISTANCE OF 100' BETWEEN STATION DECODER AND VALVE, OR 10' BETWEEN POC DECODER AND MASTER VALVE AND FLOW METER(S).
SPECIFY NUMBER # OF DECODERS NEEDED, POC DECODER NEEDED FOR EACH MASTER VALVE AND FLOW METER. MAXIMUM OF 70 STATION DECODERS AND 10 OTHER TYPE DECODERS, I.E. POC DECODER(S).

TWO WIRE CABLE:
PLEASE SPECIFY PAIGE CABLE P-7354-D OR HUNTER REGENCY CABLE IN CONDUIT. MAXIMUM TOTAL OF ALL RUNS IS 7,000 FEET. AT LEAST 1.25 " CONDUIT RECOMMENDED.

GROUNDING REQUIREMENTS:
AT CONTROLLER, FIRST AND LAST DECODER AND EVERY 300 FEET OR LONGER AT A DECODER ONLY WITH ONE 5/8-INCH X 8-FOOT, COPPER CLAD GROUNDING ROD.
#6 AWG SOLID COPPER WIRE FROM THE GROUNDING ROD TO THE FIELD COMMON (WHITE WIRES IN THE BLACK HARNESS) OF THE CONTROLLER / OR BUILT IN GREEN GROUNDING WIRE OF DECODER.

NOTE:
THE IRRIGATION FOR THIS PROJECT IS DESIGNED TO COMPLY WITH THE CITY/DSA WATER EFFICIENT LANDSCAPE ORDINANCE AND WITH THE GUIDELINES FOR IMPLEMENTATION OF THE WATER EFFICIENT LANDSCAPE ORDINANCE. TROLLER MAYER HAS COMPLIED WITH THE CRITERIA OF THE WATER EFFICIENT LANDSCAPE ORDINANCE AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN. THE USE OF SPRAY HEADS, BUBBLERS, AND ROOT WATERING SYSTEM IN DEEP WELL WITH LOW PRECIPITATION RATE, AND NEW SMART CONTROLLER INCLUDING ET/WEATHER-BASED IRRIGATION CONTROLLER

NOTE:

TEST ALL SPRINKLER MAINS AFTER PIPE IS LAID AND JOINT COMPLETED BY SUBMITTING TO A PRESSURE TEST OF ONE AND ONE HALF TIMES EXISTING STATIC PRESSURE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. DO NOT BACKFILL ANY TRENCH UNTIL THE OWNER'S REPRESENTATIVE HAS APPROVED THE TEST. REPAIR ANY LEAKS UNTIL LINES MEET TEST REQUIREMENTS AND THE OWNER'S REPRESENTATIVE'S APPROVAL. ALL LATERALS SHALL BE TESTED UNDER MAIN PRESSURE FOR LEAKS; ANY LEAKS SHALL BE REPAIRED. ALL TESTS WITH THE EXCEPTION OF THE LATERALS SHALL BE FOR A DURATION OF 4 HOURS WITH A MAXIMUM DROP OF 4 PSI ALLOWED.

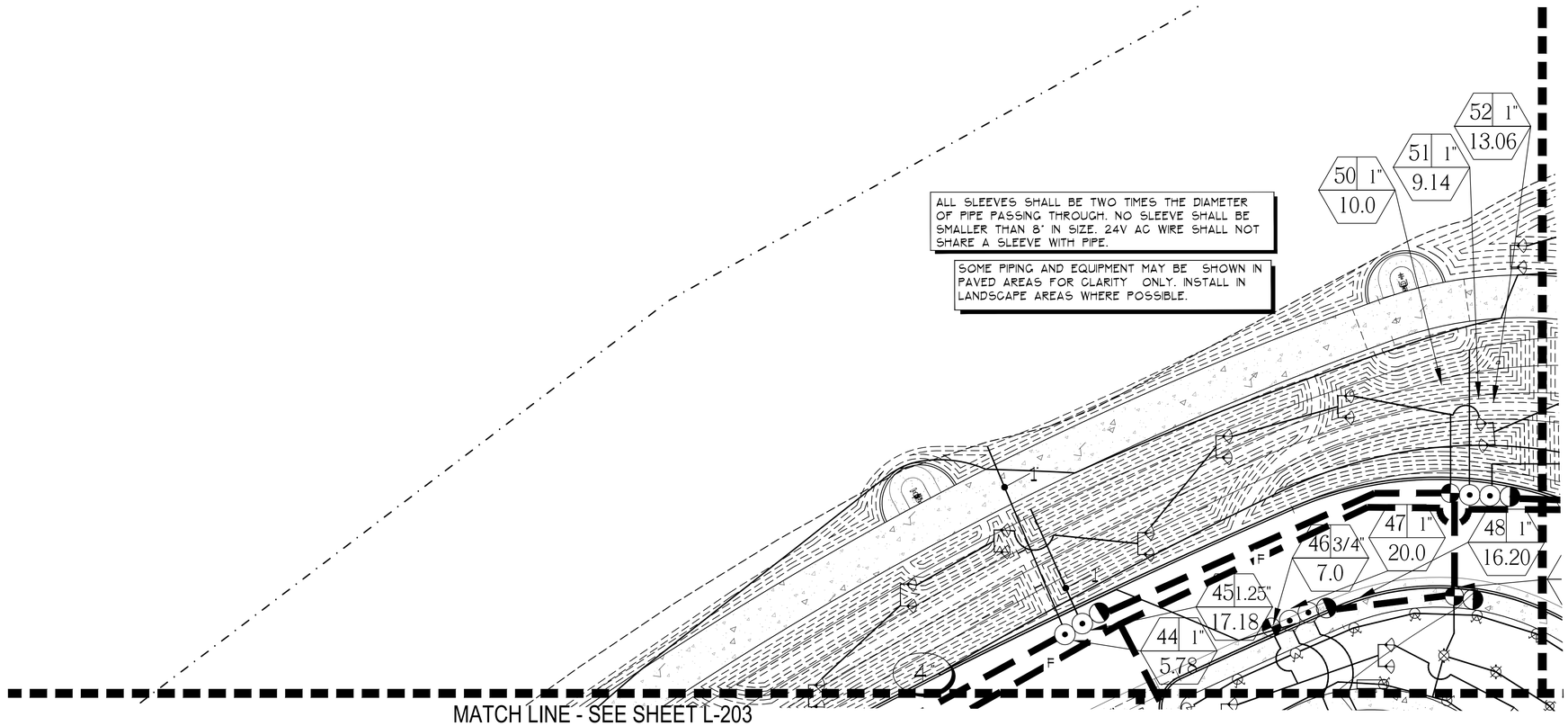
SCH 40 PVC SLEEVING CHART

SLEEVE SIZE	NO. OF WIRES	PIPE SIZE
1 1/4"	1-4 WIRES	1/2"
1 1/2"	5-10 WIRES	3/4"
2"	11-20 WIRES	1"
2 1/2"	21-30 WIRES	1 1/4"

ALL SLEEVES SHALL BE TWO TIMES THE DIAMETER OF PIPE PASSING THROUGH. NO SLEEVE SHALL BE SMALLER THAN 8" IN SIZE. 24V AC WIRE SHALL NOT SHARE A SLEEVE WITH PIPE.

SOME PIPING AND EQUIPMENT MAY BE SHOWN IN PAVED AREAS FOR CLARITY ONLY. INSTALL IN LANDSCAPE AREAS WHERE POSSIBLE.

WATER PRESSURE INFORMATION	
ENTITY	Public Works Dept-Water Division
CONTACT PERSON	(Brian Jones)
DIRECT PHONE	(562) 383-4710
DATE	06 / 06 / 2022
PRESSURE:	Static-120# P.S.I.



MAIN LINE AND RELATED EQUIPMENT

- RAINBIRD REMOTE CONTROL VALVE EFB-CP SERIES (1"-2") AND SUPERIOR #150PRS REMOTE CONTROL VALVE (2.5"). SIZE PER PLAN
- DRIP REMOTE CONTROL VALVE, RAINBIRD XCZ-100-PRB-COM
- RAINBIRD #33-DLRC QUICK COUPLER VALVE IN BOX
- SPEARS 2000 SERIES TRUE UNION BALL VALVE, LINE SIZE
- NEW BACKFLOW PREVENTER FEBCO 880V-4" W/WYE STAINER 758A-4" INSIDE STRONG BOX SBBC-48CR ENCLOSURE. INSTALL PER LOCAL CODE LOCATION IS APPROXIMATE,
- NEW IRRIGATION CONTROLLER CALSENSE CS3-2U-51/CS3-GR-KIT/COMM SYRCS-2U-25T (TBD)CS-2U-POC (1)PM-3L For Additional Information: Jeff Drongowski (760) 580-5428 & Ramon Torres (714) 553-3681
- NEW 4" SEPARATE IRRIGATION WATER METER, LOCATION IS APPROXIMATE AT THE PRESENT TIME. FINAL LOCATION SHALL BE DETERMINED IN THE FIELD BY THE OWNER REPRESENTATIVE.
- CALSENSE FLOW METER FM-4L: 4"PVC SCH 80 Tee-Mounted Ultrasonic Flow Meter. For Additional Information: Ramon Torres (Field Support for Orange County / (714) 553-3681
- MASTER VALVE SUPERIOR 3000
- DENOTES MAIN LINE PIPE SIZE
- DENOTES SLEEVE PIPE SIZE
- SLEEVE PIPING, SCHEDULE 40 PVC PIPE SIZE PER PLAN, DEPTH AS NECESSARY
- NEW IRRIGATION SYSTEM MAIN PVC SCH 40 (2-1/2" & SMALLER) PVC CL315 (3" TO 4"), & PVC CL200 (6") AT 24" COVER - SIZE PER PLAN
- F NEW MAIN LINE PIPING FOR FOUNTAINS, 1" SCHEDULE 40 PVC PIPE 18" COVER
- SPRINKLER LATERAL PIPING, SCHEDULE 40 PVC PIPE, SIZE PER PLAN, 12" COVER ALL PIPING UNDER PAVING SHALL BE SCHEDULE 40 PVC PIPE DENOTES PIPE SIZE

STATION # — VALVE SIZE / G.P.M.

TYPICAL VALVE DESIGNATOR

ROOT WATERING SYSTEM

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS
⊖	RAINBIRD RWB	B-C-1402	DEEP WELL	5/10	30	NA

XF SERIES DRIPLINE

SYMBOL	MFGR.	MODEL	G.P.H.	SPACING.	COIL SPACING
[ ]	RAINBIRD DRIP	XFS-CV-06-18-100	0.6	18"	250'

RAIN BIRD XFS-CV-06-18 (18)
LANDSCAPE DRIPLINE WITH COPPER SHIELD & CHECK VALVE, 0.6 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. INSTALL PER MANUFACTURE RECOMMENDATIONS.

POP-UP BUBBLERS - 2" Pop-up Spray Head

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
⊸	RAINBIRD 1802	PC6-03D	5CST-B	30	.30	3'	CENTER STRIP
⊻	RAINBIRD 1802	PC6-03D	5Q-B	30	.30	3'	90°

LARGE POP-UP TURF ROTORS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
(4)	RAINBIRD 6504 FALCON	F4-PC-55	4	40	3.3	41'	ADJUSTABLE
(6)	RAINBIRD 6504 FALCON	F4-PC-55	6	40	4.9	45'	ADJUSTABLE

INTERMEDIATE TURF ROTORS (RAINBIRD 5000 SERIES @ 25 P.S.I.)

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
(Q)	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	1.40	32'	QUARTER
(T)	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	1.77	32'	THIRD
(H)	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	2.75	32'	HALF
(F)	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	5.36	32'	FULL (ADJUSTABLE)

POP-UP SHRUB SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
⊠	RAINBIRD	1806 SAM PRS	8H	30	.52	8'	180°
⊠	RAINBIRD	1806 SAM PRS	8Q	30	.26	8'	90°

POP-UP TURF SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
⊠	RAINBIRD	1804 SAM PRS	12F	30	2.60	12'	360°
⊠	RAINBIRD	1804 SAM PRS	15F	30	3.70	15'	360°
⊠	RAINBIRD	1804 SAM PRS	15H	30	1.85	15'	180°
⊠	RAINBIRD	1804 SAM PRS	15T	30	1.23	15'	120°
⊠	RAINBIRD	1804 SAM PRS	15Q	30	.93	15'	90°

NORTH

0 20 40 60

SCALE: 1" = 20'

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT — RICHARD W. MAYER — No. 2617 — Signature 12-31-24 — Renewal Date 06-16-23 — Date — STATE OF CALIFORNIA — FOR REGULATORY AGENCY APPROVAL NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
IRRIGATION PLAN

DESIGNED BY : TMA			
DRAWN BY : TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY : JM	DATE :	L-204	SHEET 35 OF 89
APPROVED BY : RM/JM	DATE :		

GENERAL NOTES:

1. ALL CONTROL AND COMMON WIRE TO BE AWG #14UF-600 VOLT SOLID COPPER.
2. PROVIDE P.V.C. SCHED. 40 SLEEVES FOR ALL LATERAL AND PRESSURE LINE AND CONTROL WIRING UNDER PAVING. INSTALL WITH 30" OF COVER AND RECOMPACT TO 95%. SEE SPECIAL INSTRUCTION NOTE #6. USE SEPARATE SLEEVES FOR MAINLINE, LATERAL AND WIRE.
3. ACTUAL LOCATION OF AUTOMATIC CONTROLLER TO BE VERIFIED WITH OWNER OR HIS REPRESENTATIVE.
4. IF MAINLINE AND CONTROL VALVES SHOWN IN WALK AREAS, IT IS FOR CLARITY ONLY. ROUTE IN PLANTED AREAS.
5. USE TEFLON TAPE OR DOPE ON ALL MALE PIPE THREADS OF CONTROL ASSEMBLY. SWING JOINT AND BACKFLOW ASSEMBLY.
6. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVERSPRAY ONTO WALKS, ROADWAYS AND/OR BUILDINGS, AS MUCH AS POSSIBLE. THIS SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT EXISTING SITE CONDITIONS AND TO THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH.
7. DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, INCLUDING NEW PLANT MATERIALS, GRADE DIFFERENCES OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT ARE IN CONFLICT WITH THE PLANS. SUCH CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE IN WRITING. IN THE EVENT OF THE NOTIFICATION IS NOT PERFORMED, THE IRRIGATION INSTALLER SHALL ASSUME FULL RESPONSIBILITY FOR ANY ON-SITE ADJUSTMENTS NECESSARY TO MAKE SURE THE SYSTEM PERFORMS AT NO ADDITIONAL COST TO THE OWNER.
8. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATIONS OF WALKS, RETAINING WALLS ETC. HE SHALL COORDINATE HIS WORK WITH THE GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, PAVING STRUCTURES, ETC.
9. INSTALL VALVES IN SHRUB OR GROUND COVER AREAS 12" FROM EXISTING SIDEWALK AS SPACE PERMITS.
10. INSTALL ALL SPRAY HEADS 6" FROM PAVED SURFACES, AS SPACE PERMITS.
11. ALL SPRAY HEADS SHOULD BE ADJUSTED TO MINIMIZE OVERSPRAY ONTO WALKS AND MAXIMIZE COVERAGE.
12. A PLUMBING PERMIT SHALL BE OBTAINED FOR THE IRRIGATION SYSTEM BY THE IRRIGATION CONTRACTOR.
13. THE IRRIGATION CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF ALL FIELD REVISIONS AND SHALL PRESENT THE OWNER AND SHALL PRESENT THE OWNER WITH AN "AS-BUILT" SET OF SEPIAS AT THE CONCLUSION
14. THE IRRIGATION SYSTEM SHALL BE TESTED IN THE FIELD BEFORE FINAL APPROVAL.

CALSENSE TWO WIRE NOTES:
3M SCOTCH CAST 3570G-N CONNECTORS.
MAX DISTANCE OF 100' BETWEEN STATION DECODER AND VALVE, OR 10' BETWEEN POC DECODER AND MASTER VALVE AND FLOW METER(S).
SPECIFY NUMBER # OF DECODERS NEEDED. POC DECODER NEEDED FOR EACH MASTER VALVE AND FLOW METER. MAXIMUM OF 10 STATION DECODERS AND 10 OTHER TYPE DECODERS. I.E. POC DECODER(S).

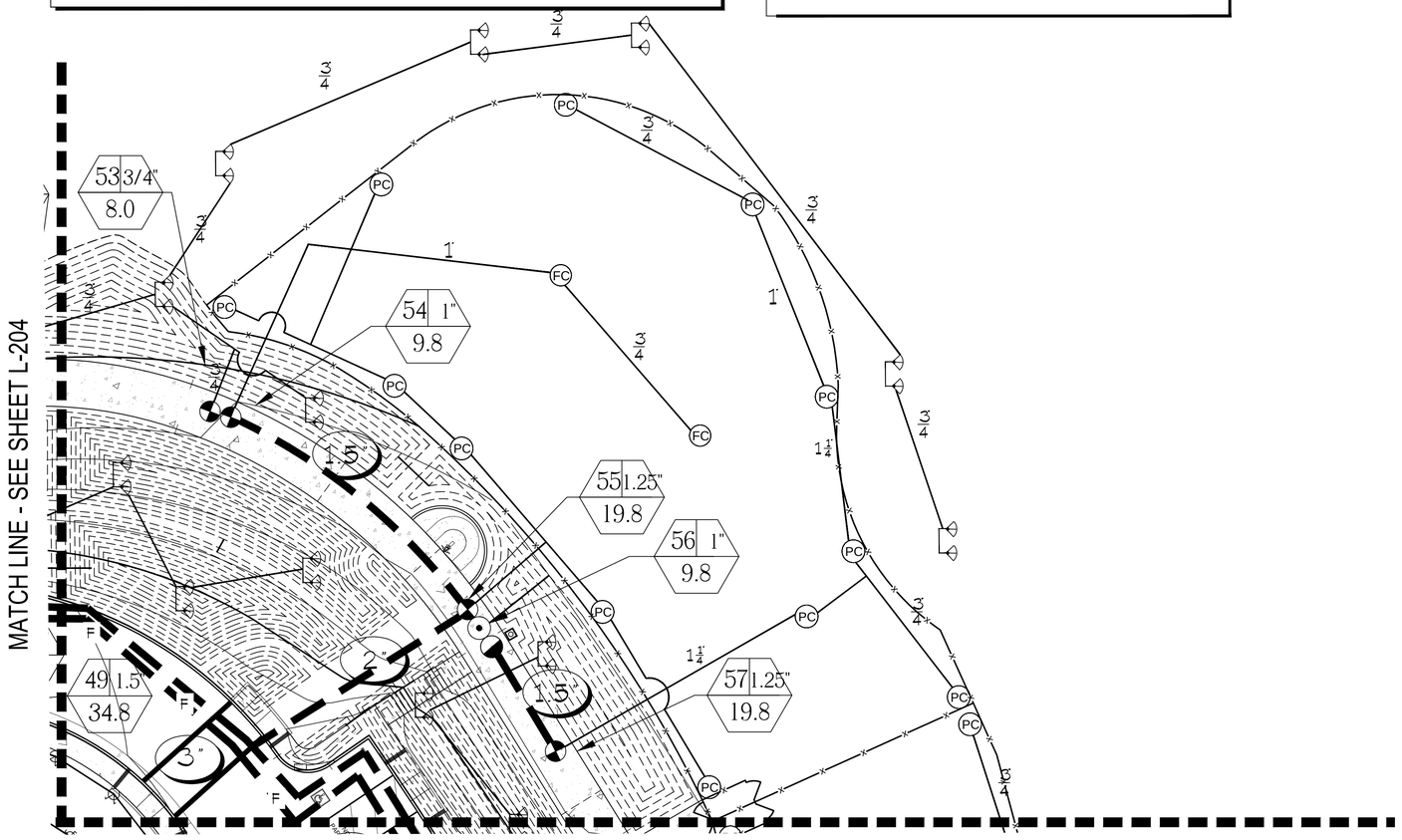
TWO WIRE CABLE:
PLEASE SPECIFY PAIGE CABLE P-73514-D OR HUNTER REGENCY CABLE IN CONDUIT. MAXIMUM TOTAL OF ALL RUNS IS 7,000 FEET. AT LEAST 1.25 " CONDUIT RECOMMENDED.

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#6 AWG SOLID COPPER WIRE FROM THE GROUNDING ROD TO THE FIELD COMMON (WHITE WIRES IN THE BLACK HARNESS) OF THE CONTROLLER / OR BUILT IN GREEN GROUNDING WIRE OF DECODER.

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SCH 40 PVC SLEEVING CHART

SLEEVE SIZE	NO. OF WIRES	PIPE SIZE
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WATER PRESSURE INFORMATION	
ENTITY	Public Works Dept-Water Division
CONTACT PERSON	(Brian Jones)
DIRECT PHONE	(562) 383-4170
DATE	06 / 06 / 2022
PRESSURE:	Static-120 P.S.I.

MAIN LINE AND RELATED EQUIPMENT

- RAINBIRD REMOTE CONTROL VALVE EFB-CP SERIES (1"-2") AND SUPERIOR #350PRS REMOTE CONTROL VALVE (2.5"), SIZE PER PLAN
- DRIP REMOTE CONTROL VALVE, RAINBIRD XCZ-100-PRB-COM
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- C — NEW IRRIGATION CONTROLLER CALSENSE CS3-2W-S1/CS3-GR-KIT/COMM SYR/CS-2W-25T (TBD)/CS-2W-POC (1)/RM-3U. For Additional Information: Jeff Drongowski (760) 580-9428 & Ramon Torres (714) 593-3681
- M — NEW 4" SEPARATE IRRIGATION WATER METER. LOCATION IS APPROXIMATE AT THE PRESENT TIME. FINAL LOCATION SHALL BE DETERMINED IN THE FIELD BY THE OWNER REPRESENTATIVE.
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- V — MASTER VALVE SUPERIOR 3000
- DENOTES MAIN LINE PIPE SIZE
- DENOTES SLEEVE PIPE SIZE
- SLEEVE PIPING, SCHEDULE 40 PVC PIPE SIZE PER PLAN, DEPTH AS NECESSARY
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- F — NEW MAIN LINE PIPING FOR FOUNTAINS, 1" SCHEDULE 40 PVC PIPE 18" COVER
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- STATION # — VALVE SIZE / G.P.M.

TYPICAL VALVE DESIGNATOR

ROOT WATERING SYSTEM

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS
	RAINBIRD RWB	B-C-1402	DEEP WELL	15/10	50	NA

XF SERIES DRIPLINE

SYMBOL	MFGR.	MODEL	G.P.H.	SPACING.	COIL SPACING
	RAINBIRD DRIP	XFS-CV-06-18-100	0.6	18"	250'

RAIN BIRD XFS-CV-06-18 (18)
LANDSCAPE DRIPLINE WITH COPPER SHIELD & CHECK VALVE, 0.6 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 2' APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. INSTALL PER MANUFACTURE RECOMMENDATIONS.

POP-UP BUBBLERS - 2" Pop-up Spray Head

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD 1802	PCS-03D	SCST-B	30	30	3'	CENTER STRIP
	RAINBIRD 1802	PCS-03D	SQ-B	30	30	3'	90°

LARGE POP-UP TURF ROTORS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD G504 FALCON	F4-PC-55	4	40	3.3	41'	ADJUSTABLE
	RAINBIRD G504 FALCON	F4-PC-55	6	40	4.9	45'	ADJUSTABLE

INTERMEDIATE TURF ROTORS (RAINBIRD 5000 SERIES @ 25 P.S.I.)

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
Q	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	1.40	32'	QUARTER
T	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	1.77	32'	THIRD
H	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	2.75	32'	HALF
F	RAINBIRD	5004-PC-SAM	MPR-35 (BEIGE)	25	5.36	32'	FULL (ADJUSTABLE)

POP-UP SHRUB SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD	1806 SAM PRS	8H	30	.52	8'	180°
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NORTH

0 20 40 60

SCALE: 1" = 20'

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Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

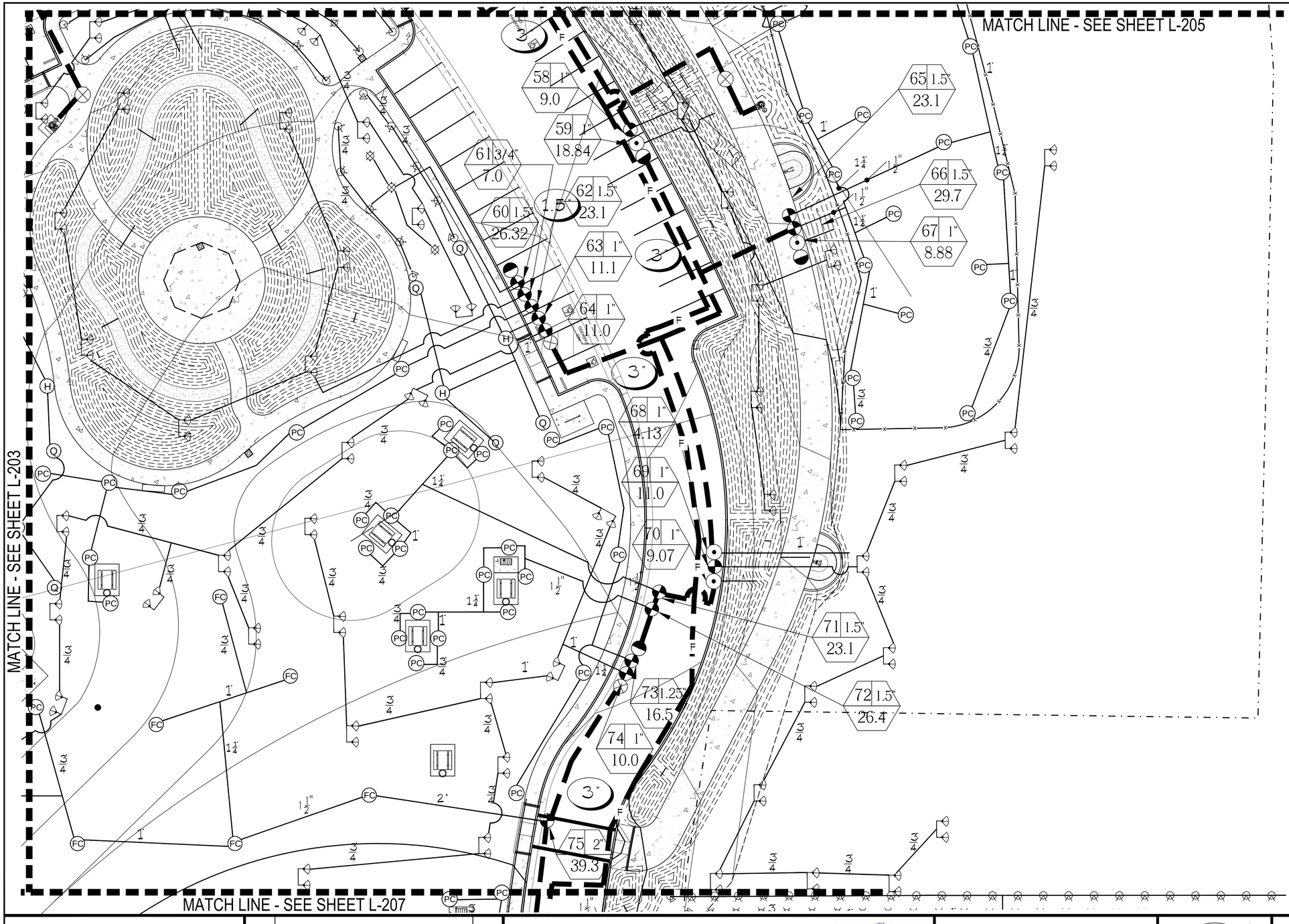
BIDDING SET SUBMITTAL
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TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT — RICHARD W. MAYER — No. 2617 — Signature — 12-31-24 Renewal Date — 06-16-23 Date — STATE OF CALIFORNIA

LA HABRA LANDFILL
VISTA GRANDE PARK
IRRIGATION PLAN

DESIGNED BY : TMA			
DRAWN BY : TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY : JM	DATE :	L-205	SHEET 36 OF 89
APPROVED BY : RM/JM	DATE :		



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STATION # — VALVE SIZE / G.P.M.

TYPICAL VALVE DESIGNATOR

ROOT WATERING SYSTEM

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SYMBOL	MFGR.	MODEL	G.P.H.	SPACING.	COIL SPACING
[ ]	RAINBIRD DRIP	XFS-CV-06-18-100	0.6	18"	250'

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■	RAINBIRD 1802	PCS-030	SQ-B	30	30	3'	90°

LARGE POP-UP TURF ROTORS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
Ⓢ	RAINBIRD 6504 FALCON	F4-FC-55	4	40	3.3	41'	ADJUSTABLE
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INTERMEDIATE TURF ROTORS (RAINBIRD 5000 SERIES @ 25 P.S.I.)

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
Ⓠ	RAINBIRD 5004-PC-SAM	MPR-35 (BEIGE)	25	1.40	32'	QUARTER
Ⓣ	RAINBIRD 5004-PC-SAM	MPR-35 (BEIGE)	25	1.77	32'	THIRD
Ⓗ	RAINBIRD 5004-PC-SAM	MPR-35 (BEIGE)	25	2.75	32'	HALF
Ⓕ	RAINBIRD 5004-PC-SAM	MPR-35 (BEIGE)	25	5.36	32'	FULL (ADJUSTABLE)

POP-UP SHRUB SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
⊗	RAINBIRD 1806 SAM PRS	8H	30	.52	8'	180°
⊠	RAINBIRD 1806 SAM PRS	8Q	30	.26	8'	90°

POP-UP TURF SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
⊗	RAINBIRD 1804 SAM PRS	12F	30	2.60	12'	360°
⊠	RAINBIRD 1804 SAM PRS	15F	30	3.70	15'	360°
⊗	RAINBIRD 1804 SAM PRS	15H	30	1.85	15'	180°
⊗	RAINBIRD 1804 SAM PRS	15T	30	1.23	15'	120°
⊗	RAINBIRD 1804 SAM PRS	15Q	30	.93	15'	90°

NORTH

0 16 32 48

SCALE: 1/16" = 1'-0"

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
PROGRESS SET
(NOT FOR CONSTRUCTION)

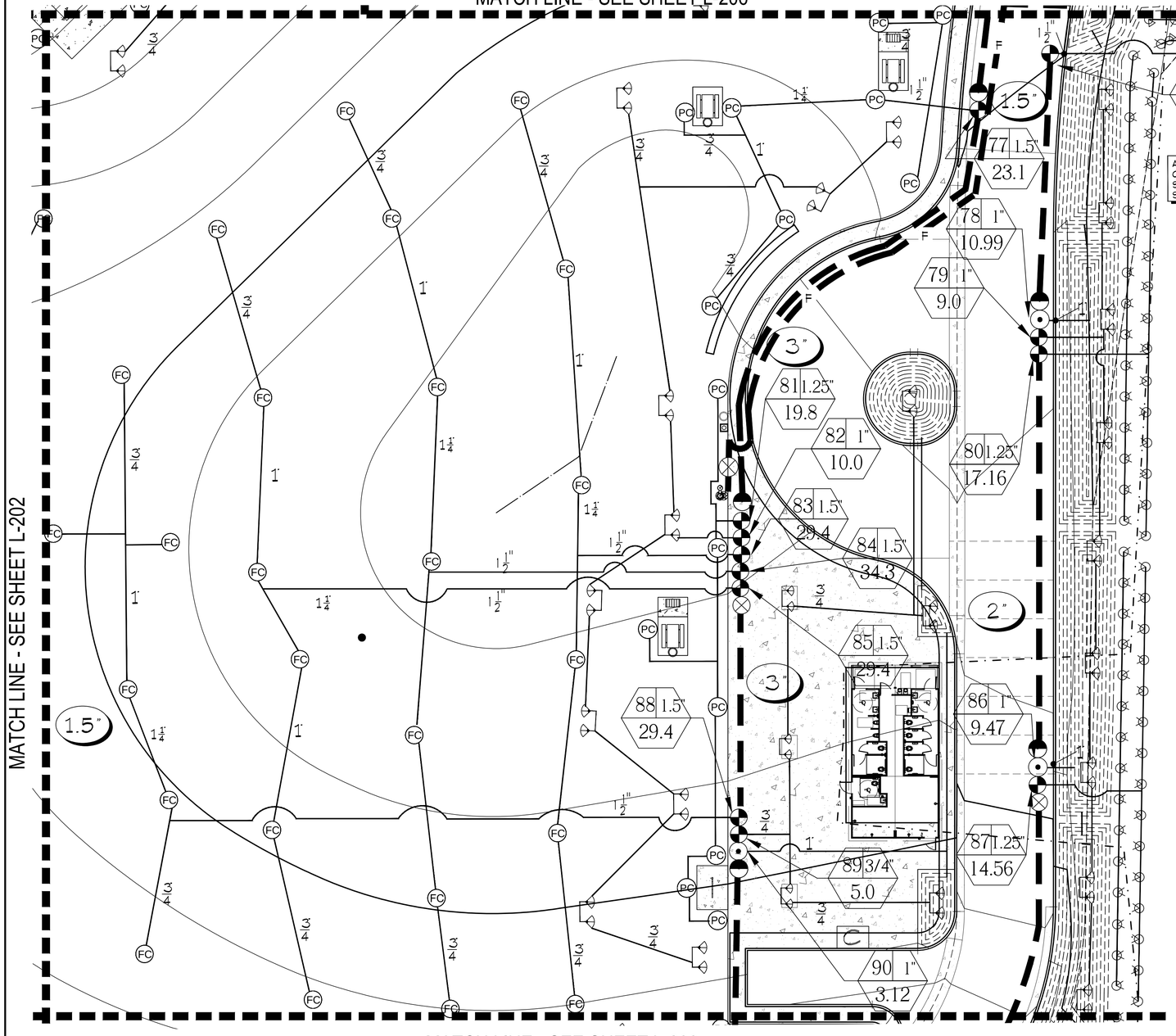
TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT — RICHARD W. MAYER — No. 2617 — Signature 05-19-24 — Renewal Date 09-16-25 — Date — STATE OF CALIFORNIA

LA HABRA LANDFILL
VISTA GRANDE PARK

IRRIGATION PLAN

DESIGNED BY :	TMA			
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY :	JM	DATE :	L-206	SHEET 37 OF 89
APPROVED BY :	RM/JM	DATE :		



MAIN LINE AND RELATED EQUIPMENT

- RAINBIRD REMOTE CONTROL VALVE EFB-CP SERIES (1"-2")AND SUPERIOR #350PRS REMOTE CONTROL VALVE (2.5") SIZE PER PLAN
- DRIP REMOTE CONTROL VALVE, RAINBIRD XCZ-100-PRB-COM
- RAINBIRD #33-DLRC QUICK COUPLER VALVE IN BOX
- SPEARS 2000 SERIES TRUE UNION BALL VALVE, LINE SIZE
- NEW BACKFLOW PREVENTER FEBCO 880V-4" WAIVE STAINER 758A-4" INSIDE STRONG BOX SBBC-40CR ENCLOSURE. INSTALL PER LOCAL CODE LOCATION IS APPROXIMATE.
- NEW IRRIGATION CONTROLLER CALSENSE CS3-2U-S1/CS3-GR-KIT/COMM 5YR/CS-2U-25T (TBD)/CS-2U-POC (1)/FM-3U For Additional Information: Jeff Drongowski (760) 580-9428 & Ramon Torres (714) 553-3681
- NEW 4" SEPARATE IRRIGATION WATER METER. LOCATION IS APPROXIMATE AT THE PRESENT TIME. FINAL LOCATION SHALL BE DETERMINED IN THE FIELD BY THE OWNER REPRESENTATIVE.
- CALSENSE FLOW METER FM-4U: 4" PVC SCH 80 Tee-Mounted Ultrasonic Flow Meter. For Additional Information: Ramon Torres (Field Support for Orange County / (714) 553-3681
- MASTER VALVE SUPERIOR 3000
- DENOTES MAIN LINE PIPE SIZE
- DENOTES SLEEVE PIPE SIZE
- SLEEVE PIPING, SCHEDULE 40 PVC PIPE SIZE PER PLAN, DEPTH AS NECESSARY
- NEW IRRIGATION SYSTEM MAIN PVC SCH 40 (2-1/2" & SMALLER) PVC CL315 (3" TO 4"), & PVC CL200 (6") AT 24" COVER - SIZE PER PLAN
- F NEW MAIN LINE PIPING FOR FOUNTAINS, 1" SCHEDULE 40 PVC PIPE 18" COVER
- SPRINKLER LATERAL PIPING, SCHEDULE 40 PVC PIPE, SIZE PER PLAN, 12" COVER
  ALL PIPING UNDER PAVING SHALL BE SCHEDULE 40 PVC PIPE
  DENOTES PIPE SIZE

STATION # — VALVE SIZE / G.P.M.

TYPICAL VALVE DESIGNATOR

ROOT WATERING SYSTEM

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS
	RAINBIRD RWB	B-C-1402	DEEP WELL	15/10	50	NA

XF SERIES DRIPLINE

SYMBOL	MFGR.	MODEL	G.P.H.	SPACING.	COIL SPACING
	RAINBIRD DRIP	XFS-CV-OG-18-100	0.6	18"	250'

RAIN BIRD XFS-CV-06-18 (18)
LANDSCAPE DRIPLINE WITH COPPER SHIELD & CHECK VALVE, 06 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. INSTALL PER MANUFACTURE RECOMMENDATIONS.

POP-UP BUBBLERS - 2" Pop-up Spray Head

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD 1802	PC6-030	5CST-B	30	.30	3'	CENTER STRIP
	RAINBIRD 1802	PC6-030	5Q-B	30	.30	3'	90°

LARGE POP-UP TURF ROTORS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
	RAINBIRD 6504 FALCON	F4-PC-55	4	40	3.3	41'	ADJUSTABLE
	RAINBIRD 6504 FALCON	F4-PC-55	6	40	4.9	45'	ADJUSTABLE

INTERMEDIATE TURF ROTORS (RAINBIRD 5000 SERIES @ 25 P.S.I.)

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
Q	RAINBIRD 5004-PC-SAM	MPR-35 (BEIGE)	25	1.40	32'	QUARTER
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H	RAINBIRD 5004-PC-SAM	MPR-35 (BEIGE)	25	2.75	32'	HALF
F	RAINBIRD 5004-PC-SAM	MPR-35 (BEIGE)	25	5.36	32'	FULL (ADJUSTABLE)

POP-UP SHRUB SPRAY HEADS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
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POP-UP TURF SPRAY HEADS

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	RAINBIRD 1804 SAM PRS	15H	30	1.85	15'	180°
	RAINBIRD 1804 SAM PRS	15T	30	1.23	15'	120°
	RAINBIRD 1804 SAM PRS	15Q	30	.93	15'	90°

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SCALE: 1/16" = 1'-0"
NORTH

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REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER
No. 4517
Signature 12-31-24
Renewal Date
06-16-25
Date
STATE OF CALIFORNIA
FOR INFORMATION ONLY

LA HABRA LANDFILL
VISTA GRANDE PARK

IRRIGATION PLAN

DESIGNED BY :	TMA			
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE:	AS SHOWN
CHECKED BY :	JM	DATE :	L-207	SHEET 38 OF 89
APPROVED BY :	RM/JM	DATE :		

GENERAL NOTES:

1. ALL CONTROL AND COMMON WIRE TO BE AWG #14UF-600 VOLT SOLID COPPER.
2. PROVIDE P.V.C. SCHED. 40 SLEEVES FOR ALL LATERAL AND PRESSURE LINE AND CONTROL WIRING UNDER PAVING. INSTALL WITH 30" OF COVER AND RECOMPACT TO 95%. SEE SPECIAL INSTRUCTION NOTE #6. USE SEPARATE SLEEVES FOR MAINLINE, LATERAL AND WIRE.
3. ACTUAL LOCATION OF AUTOMATIC CONTROLLER TO BE VERIFIED WITH OWNER OR HIS REPRESENTATIVE.
4. IF MAINLINE AND CONTROL VALVES SHOWN IN WALK AREAS, IT IS FOR CLARITY ONLY. ROUTE IN PLANTED AREAS.
5. USE TEFLON TAPE OR DOPE ON ALL MALE PIPE THREADS OF CONTROL ASSEMBLY. SWING JOINT AND BACKFLOW ASSEMBLY.
6. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVERSPRAY ONTO WALKS, ROADWAYS AND/OR BUILDINGS, AS MUCH AS POSSIBLE. THIS SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT EXISTING SITE CONDITIONS AND TO THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH.
7. DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, INCLUDING NEW PLANT MATERIALS, GRADE DIFFERENCES OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT ARE IN CONFLICT WITH THE PLANS. SUCH CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE IN WRITING. IN THE EVENT OF THE NOTIFICATION IS NOT PERFORMED, THE IRRIGATION INSTALLER SHALL ASSUME FULL RESPONSIBILITY FOR ANY ON-SITE ADJUSTMENTS NECESSARY TO MAKE SURE THE SYSTEM PERFORMS AT NO ADDITIONAL COST TO THE OWNER.
8. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATIONS OF WALKS, RETAINING WALLS ETC. HE SHALL COORDINATE HIS WORK WITH THE GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, PAVING STRUCTURES, ETC.
9. INSTALL VALVES IN SHRUB OR GROUND COVER AREAS 12" FROM EXISTING SIDEWALK AS SPACE PERMITS.
10. INSTALL ALL SPRAY HEADS 6" FROM PAVED SURFACES, AS SPACE PERMITS.
11. ALL SPRAY HEADS SHOULD BE ADJUSTED TO MINIMIZE OVERSPRAY ONTO WALKS AND MAXIMIZE COVERAGE.
12. A PLUMBING PERMIT SHALL BE OBTAINED FOR THE IRRIGATION SYSTEM BY THE IRRIGATION CONTRACTOR.
13. THE IRRIGATION CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF ALL FIELD REVISIONS AND SHALL PRESENT THE OWNER AND SHALL PRESENT THE OWNER WITH AN "AS-BUILT" SET OF SEPIAS AT THE CONCLUSION
14. THE IRRIGATION SYSTEM SHALL BE TESTED IN THE FIELD BEFORE FINAL APPROVAL.

CALSENSE TWO WIRE NOTES:
3M SCOTCH CAST 3570G-N CONNECTORS.
MAX DISTANCE OF 100' BETWEEN STATION DECODER AND VALVE, OR 10' BETWEEN POC DECODER AND MASTER VALVE AND FLOW METER(S).
SPECIFY NUMBER # OF DECODERS NEEDED. POC DECODER NEEDED FOR EACH MASTER VALVE AND FLOW METER. MAXIMUM OF 10 STATION DECODERS AND 10 OTHER TYPE DECODERS. I.E. POC DECODER(S).

TWO WIRE CABLE:
PLEASE SPECIFY PAIGE CABLE P-7354-D OR HUNTER REGENCY CABLE IN CONDUIT. MAXIMUM TOTAL OF ALL RUNS IS 7,000 FEET. AT LEAST 1.25 " CONDUIT RECOMMENDED.

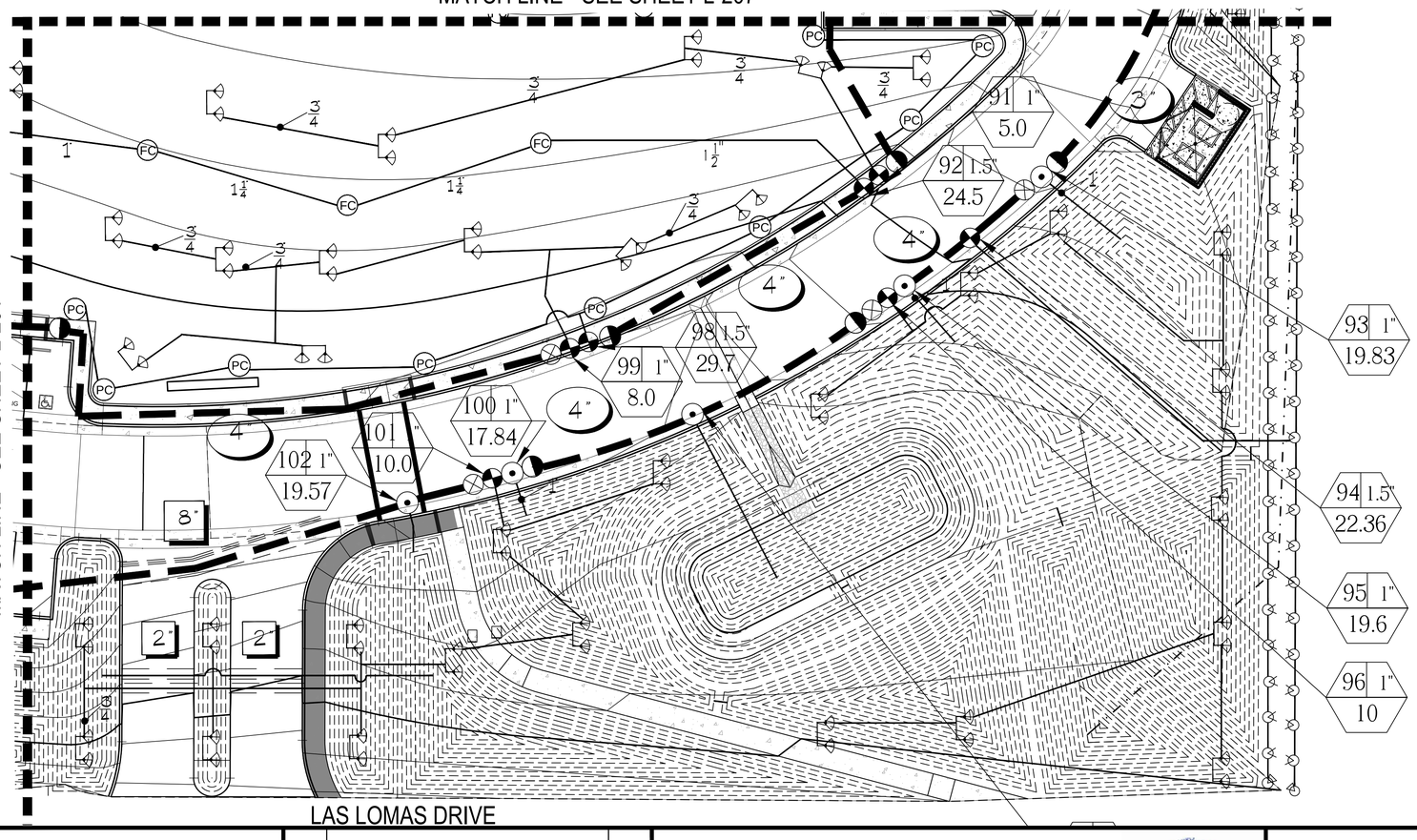
GROUNDING REQUIREMENTS:
AT CONTROLLER, FIRST AND LAST DECODER AND EVERY 300 FEET OR LONGER AT A DECODER ONLY WITH ONE 5/8-INCH X 8-FOOT, COPPER CLAD GROUNDING ROD.
#6 AWG SOLID COPPER WIRE FROM THE GROUNDING ROD TO THE FIELD COMMON (WHITE WIRES IN THE BLACK HARNESS) OF THE CONTROLLER / OR BUILT IN GREEN GROUNDING WIRE OF DECODER.

NOTE:

TEST ALL SPRINKLER MAINS AFTER PIPE IS LAID AND JOINT COMPLETED BY SUBMITTING TO A PRESSURE TEST OF ONE AND ONE HALF TIMES EXISTING STATIC PRESSURE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. DO NOT BACKFILL ANY TRENCH UNTIL THE OWNER'S REPRESENTATIVE HAS APPROVED THE TEST. REPAIR ANY LEAKS UNTIL LINES MEET TEST REQUIREMENTS AND THE OWNER'S REPRESENTATIVE'S APPROVAL. ALL LATERALS SHALL BE TESTED UNDER MAIN PRESSURE FOR LEAKS; ANY LEAKS SHALL BE REPAIRED. ALL TESTS WITH THE EXCEPTION OF THE LATERALS SHALL BE FOR A DURATION OF 4 HOURS WITH A MAXIMUM DROP OF 4 PSI ALLOWED.

NOTE:
THE IRRIGATION FOR THIS PROJECT IS DESIGNED TO COMPLY WITH THE CITY/DSA WATER EFFICIENT LANDSCAPE ORDINANCE AND WITH THE GUIDELINES FOR IMPLEMENTATION OF THE WATER EFFICIENT LANDSCAPE ORDINANCE. TROLLER MAYER HAS COMPLIED WITH THE CRITERIA OF THE WATER EFFICIENT LANDSCAPE ORDINANCE AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN. THE USE OF SPRAY HEADS, BUBBLERS, AND ROOT WATERING SYSTEM IN DEEP WELL WITH LOW PRECIPITATION RATE, AND NEW SMART CONTROLLER INCLUDING ET/WEATHER-BASED IRRIGATION CONTROLLER

MATCH LINE - SEE SHEET L-207



NOTE:
THE IRRIGATION FOR THIS PROJECT IS DESIGNED TO COMPLY WITH THE CITY/DSA WATER EFFICIENT LANDSCAPE ORDINANCE AND WITH THE GUIDELINES FOR IMPLEMENTATION OF THE WATER EFFICIENT LANDSCAPE ORDINANCE. TROLLER MAYER HAS COMPLIED WITH THE CRITERIA OF THE WATER EFFICIENT LANDSCAPE ORDINANCE AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN. THE USE OF SPRAY HEADS, BUBBLERS, AND ROOT WATERING SYSTEM IN DEEP WELL WITH LOW PRECIPITATION RATE, AND NEW SMART CONTROLLER INCLUDING ET/WEATHER-BASED IRRIGATION CONTROLLER

SCH 40 PVC SLEEVING CHART

SLEEVE SIZE	NO. OF WIRES	PIPE SIZE
1 1/4"	1-4 WIRES	1/2"
1 1/2"	5-10 WIRES	3/4"
2"	11-20 WIRES	1"
2 1/2"	21-30 WIRES	1 1/4"

ALL SLEEVES SHALL BE TWO TIMES THE DIAMETER OF PIPE PASSING THROUGH. NO SLEEVE SHALL BE SMALLER THAN 6" IN SIZE. 24V AC WIRE SHALL NOT SHARE A SLEEVE WITH PIPE.

SOME PIPING AND EQUIPMENT MAY BE SHOWN IN PAVED AREAS FOR CLARITY ONLY. INSTALL IN LANDSCAPE AREAS WHERE POSSIBLE.

WATER PRESSURE INFORMATION	
ENTITY	Public Works Dept-Water Division
CONTACT PERSON / DIRECT PHONE	(Brian Jones) (562) 383-4110
DATE	06/06/2022
PRESSURE:	Static-120P.S.I.

MAIN LINE AND RELATED EQUIPMENT

- RAINBIRD REMOTE CONTROL VALVE EFB-CP SERIES (1"-2")AND SUPERIOR #350PRS REMOTE CONTROL VALVE (2.5") SIZE PER PLAN
- DRIP REMOTE CONTROL VALVE, RAINBIRD XCZ-100-PRB-COM
- RAINBIRD #33-DLRC QUICK COUPLER VALVE IN BOX
- SPEARS 2000 SERIES TRUE UNION BALL VALVE, LINE SIZE
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- V — MASTER VALVE SUPERIOR 3000
- DENOTES MAIN LINE PIPE SIZE
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STATION # — VALVE SIZE / GPM

TYPICAL VALVE DESIGNATOR

ROOT WATERING SYSTEM

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS
	RAINBIRD RWB	B-C-1402	DEEP WELL	15/40	50	NA

XF SERIES DRIPLINE

SYMBOL	MFGR.	MODEL	G.P.H.	SPACING.	COIL SPACING
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RAIN BIRD XFS-CV-06-18 (18)
LANDSCAPE DRIPLINE WITH COPPER SHIELD & CHECK VALVE, 0.6 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. INSTALL PER MANUFACTURE RECOMMENDATIONS.

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	RAINBIRD 1802	PCS-0330	5CI-B	30	3.0	3'	360°

LARGE POP-UP TURF ROTORS

SYMBOL	MFGR.	MODEL	NOZZLE	P.S.I.	G.P.M.	RADIUS	ARC
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INTERMEDIATE TURF ROTORS (RAINBIRD 5000 SERIES @ 25 P.S.I.)

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NO.	REVISION DESCRIPTION	BY:

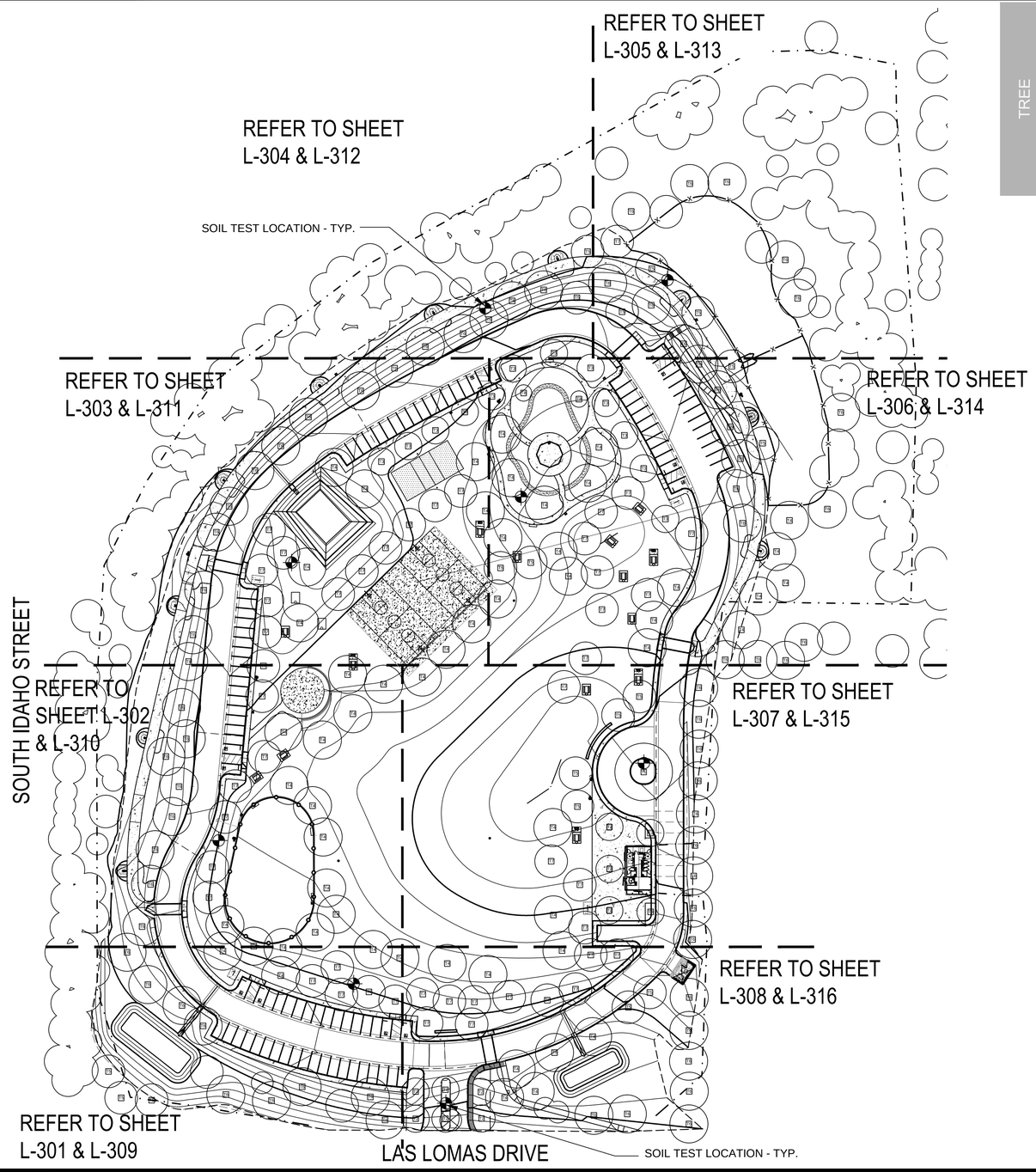
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REGISTERED LANDSCAPE ARCHITECT — SIGMUND W. MAYER — NO. 1017 — STATE OF CALIFORNIA
Signature 05.31.24
Renewal Date 06.16.23
Date
FOR REVIEW ONLY — NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
IRRIGATION PLAN

DESIGNED BY :	TMA		
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN
CHECKED BY :	JM	DATE :	L-208
APPROVED BY :	RM/JM	DATE :	SHEET 39 OF 89



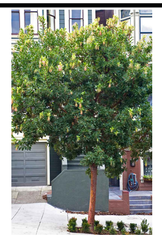
TREE



Quercus virginiana



Pistacia Chinensis



Arbutus Marina



Platnus Racemosa



Koelreuteria bipinnata



Schinus molle



Ulmus parvifolia 'True Green'

TREE LEGEND

Symbol	Genus Species Name	Common Name	Box/Container Size	Plant Factor
T1	Quercus virginiana	Southern Live Oak	72" Box STD	moderate
T2	Pistacia Chinensis	Chinese Pistache	48" Box STD	moderate
T3	Arbutus Marina	Marina Strawberry Tree	24" Box STD	low
T4	Platnus Racemosa	California Sycamore	24" Box MULTI	low
T5	Koelreuteria bipinnata	Chinese Flame Tree	24" Box STD	moderate
T6	Schinus molle	California Pepper Tree	24" Box STD	moderate
T7	Ulmus parvifolia 'True Green'	True Green Chinese Elm	24" Box STD	
T8	Cercis occidentalis	Western Redbud	24" Box MULTI	

EXISTING TREE LEGEND

Symbol	Note
	Existing tree to remain and be protected in place
	Existing tree to be removed

REFER TO SHEET L-4.3 FOR PLANTING DETAILS

NORTH

0 60 120 180

SCALE: 1" = 60'

PLANTING NOTES

1. Before the demolition or start of construction, the Contractor shall contact the Landscape Architect, Civil Engineer and Owner's Representative to schedule a pre-construction meeting. During this meeting, all site conditions and Construction Documents shall be reviewed. All existing trees shall be preserved. Failure to call for said meeting implies acceptance by the Contractor of trees to be preserved in their existing condition as well as any liability for removing trees that are designated "Protect in Place".
2. Landscape Contractor shall procure and reserve plant material at start of contract to ensure availability and quality.
3. Before the demolition and removal of ANY landscape material refer to the Civil Engineer 'Demolition Plan' and Tree Protection Notes specifications on Sheet L-501
4. Plants are shown diagrammatically on plan therefore plant spacing in Planting Notes takes precedence to plants shown on the plan. Contractor is to calculate quantity of plants called for and install all that are shown on plan at the spacing in the legend.
5. Nursery images of all trees, shrubs and groundcover shall be submitted as part of the Landscape Submittal as required by the Landscape Specifications on Sheet L-503 and L-504. Images shall be submitted to the Landscape Architect for approval prior to planting see Landscape Specifications on Sheet L-503 and L-504. Images shall include height of plant and width. Submittal must be submitted (3) three weeks prior to any landscape or irrigation work commences.
6. All Landscape Planting, Irrigation and Paving damaged by contractor shall be repaired and approved by Owner's Representative before 100% completion of construction at no additional cost to the Owner's.
7. Finish grade shall be 2" below all walks/curbs for areas to receive shrub and/or groundcover and mulch.
8. In order to achieve a smooth, even finish grade, additional soil may need to be added to the planting areas. Refer the the Landscape Specifications on Sheet L-503 and L-504 for additional information on imported soil.
9. Finish grade shall be 1" below all walks/curbs for areas to receive turf.
10. All trenches, holes, and divots from construction work in areas of existing turf/shrub areas to remain shall be patch/repaired and re-seeded/re-mulched. Infill soil shall be installed to all trenches, holes and divots as to re-establish uniform finish grade. Soil shall be compacted to 85% prior to re-seeding/re-mulching. See Landscape Specifications 02900 for further info.
11. Finish grade shall slope 2% away from structures and towards swales (when applicable)
12. Forest Floor Mulch shall be a 3" thick layer and shall be spread beneath and in between all new and existing shrubs, groundcover and trees within the scope of work so as to leave soil completely covered with mulch. Samples of the mulch shall be a part of the Landscape Submittal to the Landscape Architect. Mulch type shall be per the landscape specifications.
13. Water Percolation -- Contractor to dig a test planting pit, 3'-0" square and 3'-0" deep; fill pit with water up to 2'-0" from bottom and mark location and check level in 24 hours. If standing water is present, Contractor to contact Owner's Representative and Landscape Architect and it will be determined if a sump pump must be implemented.
14. Conduct fifteen (8) soil tests at the locations marked on this sheet with the symbol: These tests are to determine recommended amounts of fertilizer and harmful substances, if any. See specifications for soil testing, quantities of testing at the marked locations and information of existing and imported soil.
15. During soil preparation amend with Gypsum (Agricultural Calcium Sulfate Ca SO4) per amount recommended by the soil test results. See Landscape Specifications on Sheet L-503 and L-504 for further information.
16. All new and existing planting areas shall be free of construction debris, rocks, form boards, weeds etc. See Landscape Specifications on Sheet L-503 and L-504.
17.Complete Roundup Herbicide weed abatement (weed and kill process for 8 weeks) in areas of re-grading and turf removal per Specifications 02900, Art.3.03B. Verify in the field, with Owner Representative, all areas to receive Roundup before its application. Do not use Roundup in areas where existing landscaping and turf are to remain.
18.All new trees to be installed adjacent to any hardscape areas (street curbs, driveways, and sidewalks) shall include linear root barriers. The root barrier should extend 5' on either side of the tree trunk for a total length of 10'. Install barriers from Deep Root, (800) 766-8835. See Detail for typical installation.
Specification follows:
   A. For (36" box, 24" box, & 15 gal.) trees planted within the limit of: Curbs and Driveways use MODEL#UB18-2
   B. For (36" box, 24" box, & 15 gal.) trees planted within the limit of: Sidewalks and concrete drainage swales use MODEL#LB12-2
19. Install Jute Mesh for slopes greater than 4:1 slope.
20. Tilling: All planting areas in the park that area 90% soil compaction or above shall be cross-ripped 12" on center to a maximum depth of 10" below grade and follow with rototillage to reduce soil clods to a maximum diameter of 1 -inch in the top 8 inches. Remove stones and foreign matter over one half (1/2) inch in diameter from upper 8" of soil. Planting areas too small for power equipment shall be hand dug and tilled to a depth of 10" below grade. (All tilling shall be completed prior to adding conditioners and fertilizers, unless occupied by existing trees that remain in place). Any part of the irrigation system, including heads, damaged during tilling shall be replaced with new equipment.

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Glendale, California 91201-1421
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E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER NO. 1937
Signature
Renewal Date
Date
STATE OF CALIFORNIA
FOR PLANNING PURPOSES ONLY

LA HABRA LANDFILL
VISTA GRANDE PARK

OVERALL TREE PLAN & KEY MAP

DESIGNED BY : TMA			
DRAWN BY : TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY : JM	DATE :	L-300	SHEET 40 OF 89
APPROVED BY : RM/JM	DATE :		

EXISTING TREE LEGEND

Symbol	Note
○	Existing tree to remain and be protected in place
⊗	Existing tree to be removed

REFER TO SHEET L-4.3 FOR PLANTING DETAILS



Quercus virginiana


Pistacia Chinensis


Arbutus Marina


Platnus Racemosa


Koelreuteria bipinnata


Schinus molle


Ulmus parvifolia 'True Green'


Cercis occidentalis

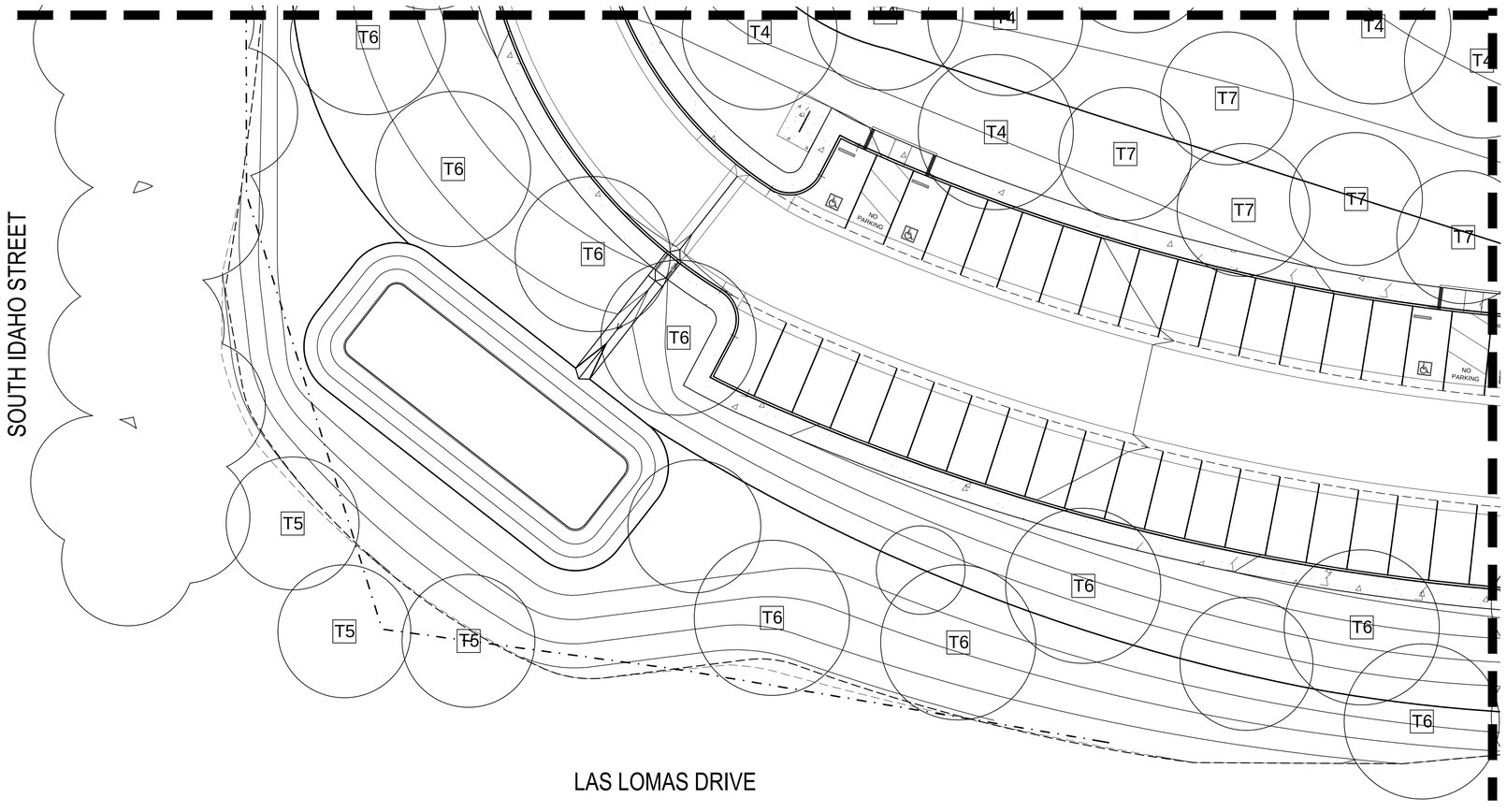
TREE LEGEND

Symbol	Genus Species Name	Common Name	Box/Container Size	Plant Factor
T1	Quercus virginiana	Southern Live Oak	72" Box STD	moderate
T2	Pistacia Chinensis	Chinese Pistache	48" Box STD	moderate
T3	Arbutus Marina	Marina Strawberry Tree	24" Box STD	low
T4	Platnus Racemosa	California Sycamore	24" Box MULTI	low
T5	Koelreuteria bipinnata	Chinese Flame Tree	24" Box STD	moderate
T6	Schinus molle	California Pepper Tree	24" Box STD	moderate
T7	Ulmus parvifolia 'True Green'	True Green Chinese Elm	24" Box STD	
T8	Cercis occidentalis	Western Redbud	24" Box MULTI	

PLANTING NOTES

1. Before the demolition or start of construction, the Contractor shall contact the Landscape Architect, Civil Engineer and Owner's Representative to schedule a pre-construction meeting. During this meeting, all site conditions and Construction Documents shall be reviewed. All existing trees shall be preserved. Failure to call for said meeting implies acceptance by the Contractor of trees to be preserved in their existing condition as well as any liability for removing trees that are designated "Protect in Place".
2. Landscape Contractor shall procure and reserve plant material at start of contract to ensure availability and quality.
3. Before the demolition and removal of ANY landscape material refer to the Civil Engineer 'Demolition Plan' and Tree Protection Notes specifications on Sheet L-501
4. Plants are shown diagrammatically on plan therefore plant spacing in Planting Notes takes precedence to plants shown on the plan. Contractor is to calculate quantity of plants called for and install all that are shown on plan at the spacing in the legend.
5. Nursery images of all trees, shrubs and groundcover shall be submitted as part of the Landscape Submittal as required by the Landscape Specifications on Sheet L-503 and L-504. Images shall be submitted to the Landscape Architect for approval prior to planting see Landscape Specifications on Sheet L-503 and L-504. Images shall include height of plant and width. Submittal must be submitted (3) three weeks prior to any landscape or irrigation work commences.
6. All Landscape Planting, Irrigation and Paving damaged by contractor shall be repaired and approved by Owner's Representative before 100% completion of construction at no additional cost to the Owner's.
7. Finish grade shall be 2" below all walks/curbs for areas to receive shrub and/or groundcover and mulch.
8. In order to achieve a smooth, even finish grade, additional soil may need to be added to the planting areas. Refer the the Landscape Specifications on Sheet L-503 and L-504 for additional information on imported soil.
9. Finish grade shall be 1" below all walks/curbs for areas to receive turf.
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14. Conduct fifteen (8) soil tests at the locations marked on this sheet with the symbol: ✥ These tests are to determine recommended amounts of fertilizer and harmful substances, if any. See specifications for soil testing, quantities of testing at the marked locations and information of existing and imported soil.
15. During soil preparation amend with Gypsum (Agricultural Calcium Sulfate Ca SO4) per amount recommended by the soil test results. See Landscape Specifications on Sheet L-503 and L-504 for further information.
16. All new and existing planting areas shall be free of construction debris, rocks, form boards, weeds etc. See Landscape Specifications on Sheet L-503 and L-504.
17.Complete Roundup Herbicide weed abatement (weed and kill process for 8 weeks) in areas of re-grading and turf removal per Specifications 02900, Art.3.03B. Verify in the field, with Owner Representative, all areas to receive Roundup before its application. Do not use Roundup in areas where existing landscaping and turf are to remain.
18.All new trees to be installed adjacent to any hardscape areas (street curbs, driveways, and sidewalks) shall include linear root barriers. The root barrier should extend 5' on either side of the tree trunk for a total length of 10'. Install barriers from Deep Root, (800) 766-8835. See Detail for typical installation.
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   B. For (36" box, 24" box, & 15 gal.) trees planted within the limit of: Sidewalks and concrete drainage swales use MODEL#LB12-2
19. Install Jute Mesh for slopes greater than 4:1 slope.
20. Tilling: All planting areas in the park that area 90% soil compaction or above shall be cross-ripped 12" on center to a maximum depth of 10" below grade and follow with rototillage to reduce soil clods to a maximum diameter of 1 -inch in the top 8 inches. Remove stones and foreign matter over one half (1/2) inch in diameter from upper 8" of soil. Planting areas too small for power equipment shall be hand dug and tilled to a depth of 10" below grade. (All tilling shall be completed prior to adding conditioners and fertilizers, unless occupied by existing trees that remain in place). Any part of the irrigation system, including heads, damaged during tilling shall be replaced with new equipment.

MATCH LINE - SEE SHEET L-302



NORTH

0 16' 32' 48'

SCALE: 1/16" = 1'-0"

Troller Mayer Associates, Inc
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1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

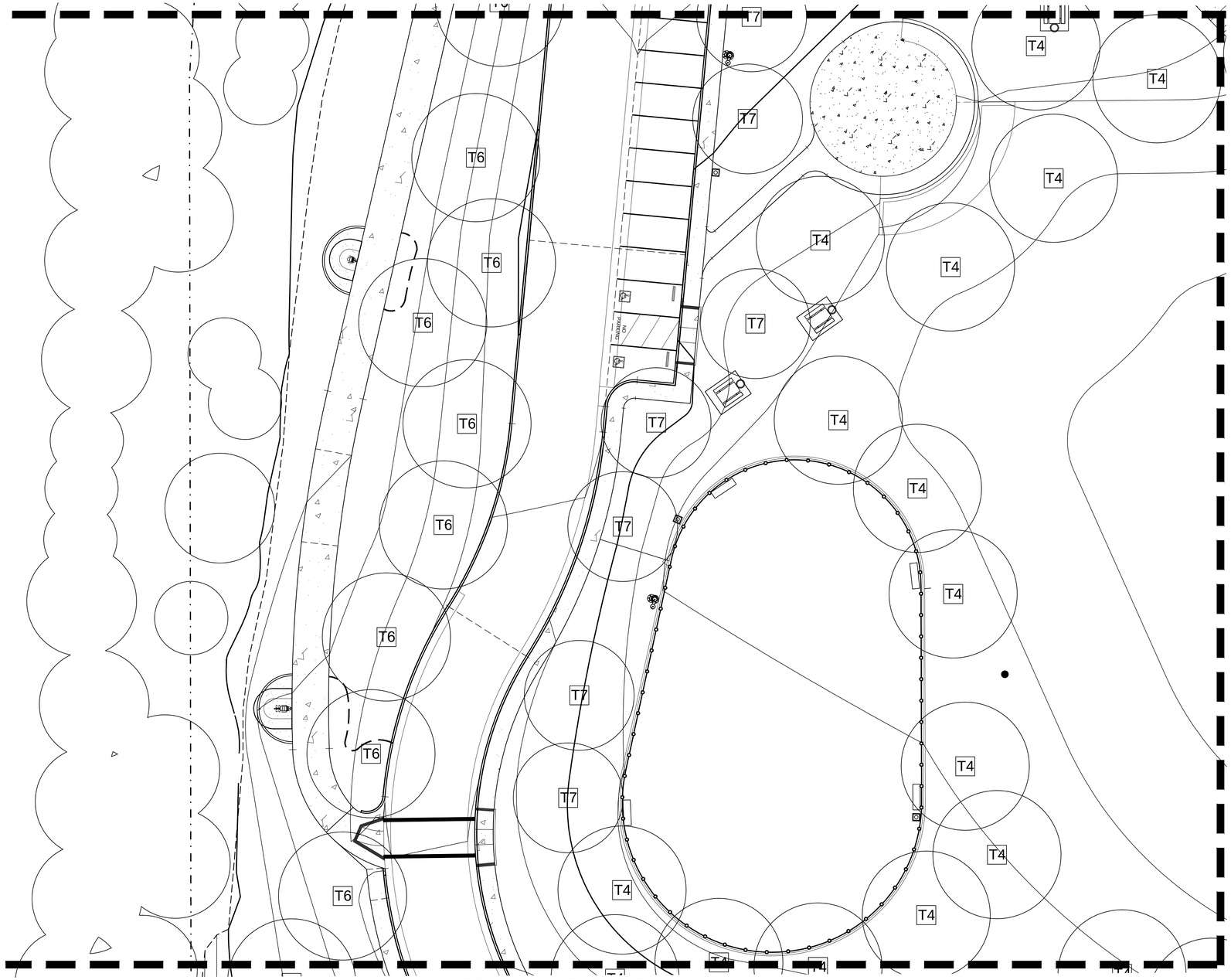
REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER 2490
Signature
Renewal Date
Date
STATE OF CALIFORNIA
FOR PLANNING PURPOSES ONLY
NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK

TREE PLANTING PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-301	SHEET 41 OF 89	
APPROVED BY :	RM/JM	DATE :			

MATCH LINE - SEE SHEET L-303



TREE LEGEND

Symbol	Genus Species Name	Common Name	Box/Container Size	Plant Factor
T1	Quercus virginiana	Southern Live Oak	72" Box STD	moderate
T2	Pistacia Chinensis	Chinese Pistache	48" Box STD	moderate
T3	Arbutus Marina	Marina Strawberry Tree	24" Box STD	low
T4	Platnus Racemosa	California Sycamore	24" Box MULTI	low
T5	Koelreuteria bipinnata	Chinese Flame Tree	24" Box STD	moderate
T6	Schinus molle	California Pepper Tree	24" Box STD	moderate
T7	Ulmus parvifolia 'True Green'	True Green Chinese Elm	24" Box STD	
T8	Cercis occidentalis	Western Redbud	24" Box MULTI	

EXISTING TREE LEGEND

Symbol	Note
○	Existing tree to remain and be protected in place
⊗	Existing tree to be removed

REFER TO SHEET L-4.3 FOR PLANTING DETAILS



Quercus virginiana


Pistacia Chinensis


Arbutus Marina


Platnus Racemosa


Koelreuteria bipinnata


Schinus molle


Ulmus parvifolia 'True Green'


Cercis occidentalis



0 16' 32' 48'

SCALE: 1/16" = 1'-0"

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Glendale, California 91201-1421
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E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

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Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER No. 1937
STATE OF CALIFORNIA
Signature 12/31/24
Renewal Date
06-16-23
Date

FOR REFERENCE ONLY NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK

TREE PLANTING PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-302	SHEET	42 OF 89
APPROVED BY :	RM/JM	DATE :			

MATCH LINE - SEE SHEET L-304

MATCH LINE - SEE SHEET L-302

MATCH LINE - SEE SHEET L-304

TREE LEGEND

Symbol	Genus Species Name	Common Name	Box/Container Size	Plant Factor
T1	Quercus virginiana	Southern Live Oak	72" Box STD	moderate
T2	Pistacia Chinensis	Chinese Pistache	48" Box STD	moderate
T3	Arbutus Marina	Marina Strawberry Tree	24" Box STD	low
T4	**Platnus Racemosa**	**California Sycamore**	24" Box MULTI	low
T5	Koelreuteria bipinnata	Chinese Flame Tree	24" Box STD	moderate
T6	Schinus molle	California Pepper Tree	24" Box STD	moderate
T7	Ulmus parvifolia 'True Green'	True Green Chinese Elm	24" Box STD	
T8	Cercis occidentalis	Western Redbud	24" Box MULTI	

EXISTING TREE LEGEND

Symbol	Note
○	Existing tree to remain and be protected in place
⊗	Existing tree to be removed

REFER TO SHEET L-4.3 FOR PLANTING DETAILS



Quercus virginiana


Pistacia Chinensis


Arbutus Marina


Platnus Racemosa


Koelreuteria bipinnata


Schinus molle


Ulmus parvifolia 'True Green'


Cercis occidentalis

NORTH

0 16' 32' 48'

SCALE: 1/16" = 1'-0"

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
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Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

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(NOT FOR CONSTRUCTION)

TETRA TECH
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Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
JEHSANG W. MAYER NO. 5437
Signature 12-31-24
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA

LA HABRA LANDFILL
VISTA GRANDE PARK
TREE PLANTING PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-303	SHEET	43 OF 89
APPROVED BY :	RM/JM	DATE :			

TREE LEGEND

Symbol	Genus Species Name	Common Name	Box/Container Size	Plant Factor
T1	Quercus virginiana	Southern Live Oak	72" Box STD	moderate
T2	Pistacia Chinensis	Chinese Pistache	48" Box STD	moderate
T3	Arbutus Marina	Marina Strawberry Tree	24" Box STD	low
T4	Platnus Racemosa	California Sycamore	24" Box MULTI	low
T5	Koelreuteria bipinnata	Chinese Flame Tree	24" Box STD	moderate
T6	Schinus molle	California Pepper Tree	24" Box STD	moderate
T7	Ulmus parvifolia 'True Green'	True Green Chinese Elm	24" Box STD	
T8	Cercis occidentalis	Western Redbud	24" Box MULTI	

EXISTING TREE LEGEND



Quercus virginiana


Pistacia Chinensis


Arbutus Marina

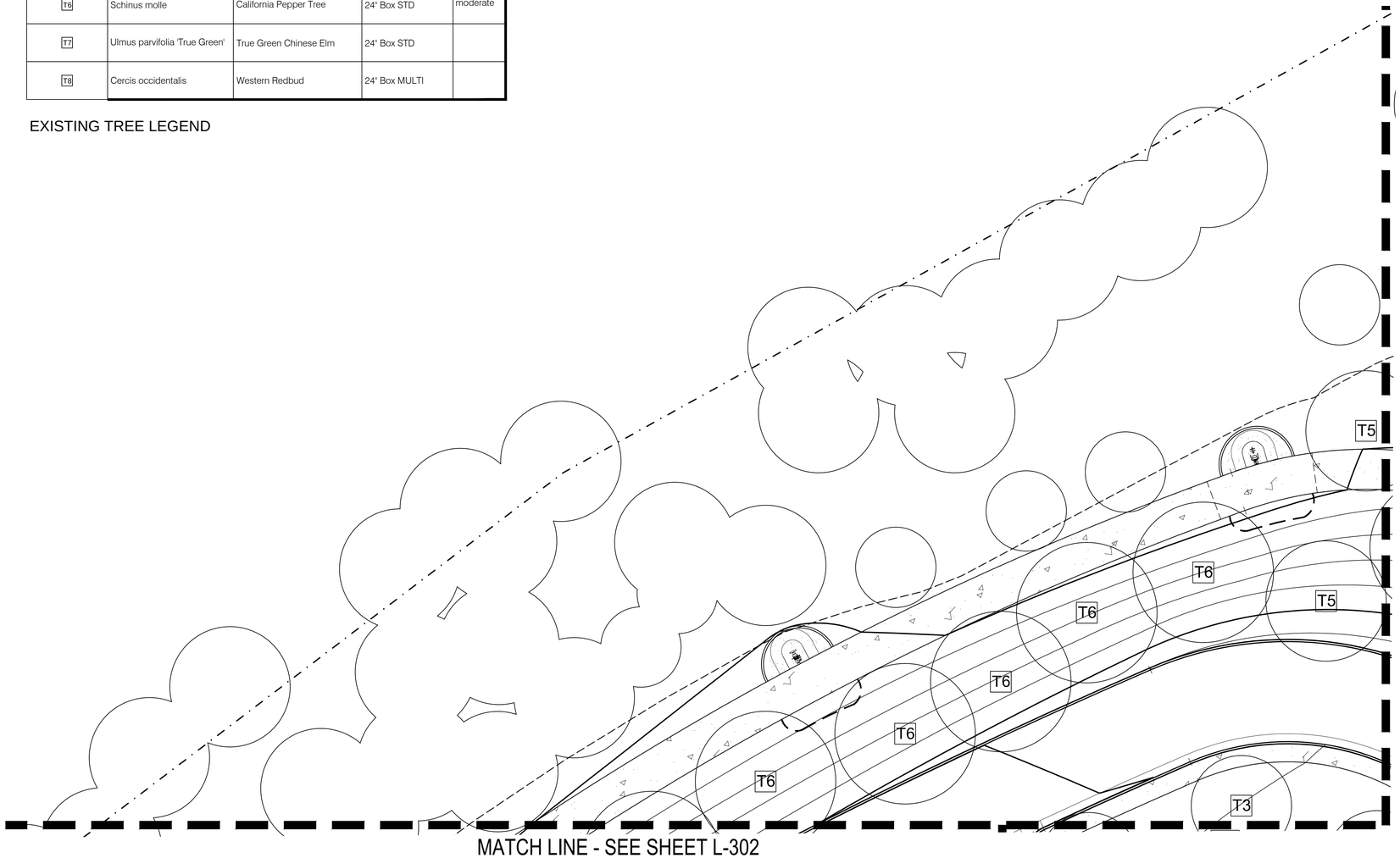

Platnus Racemosa


Koelreuteria bipinnata


Schinus molle

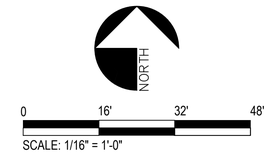

Ulmus parvifolia 'True Green'


Cercis occidentalis



PLANTING NOTES

1. Before the demolition or start of construction, the Contractor shall contact the Landscape Architect, Civil Engineer and Owner's Representative to schedule a pre-construction meeting. During this meeting, all site conditions and Construction Documents shall be reviewed. All existing trees shall be preserved. Failure to call for said meeting implies acceptance by the Contractor of trees to be preserved in their existing condition as well as any liability for removing trees that are designated "Protect in Place".
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1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

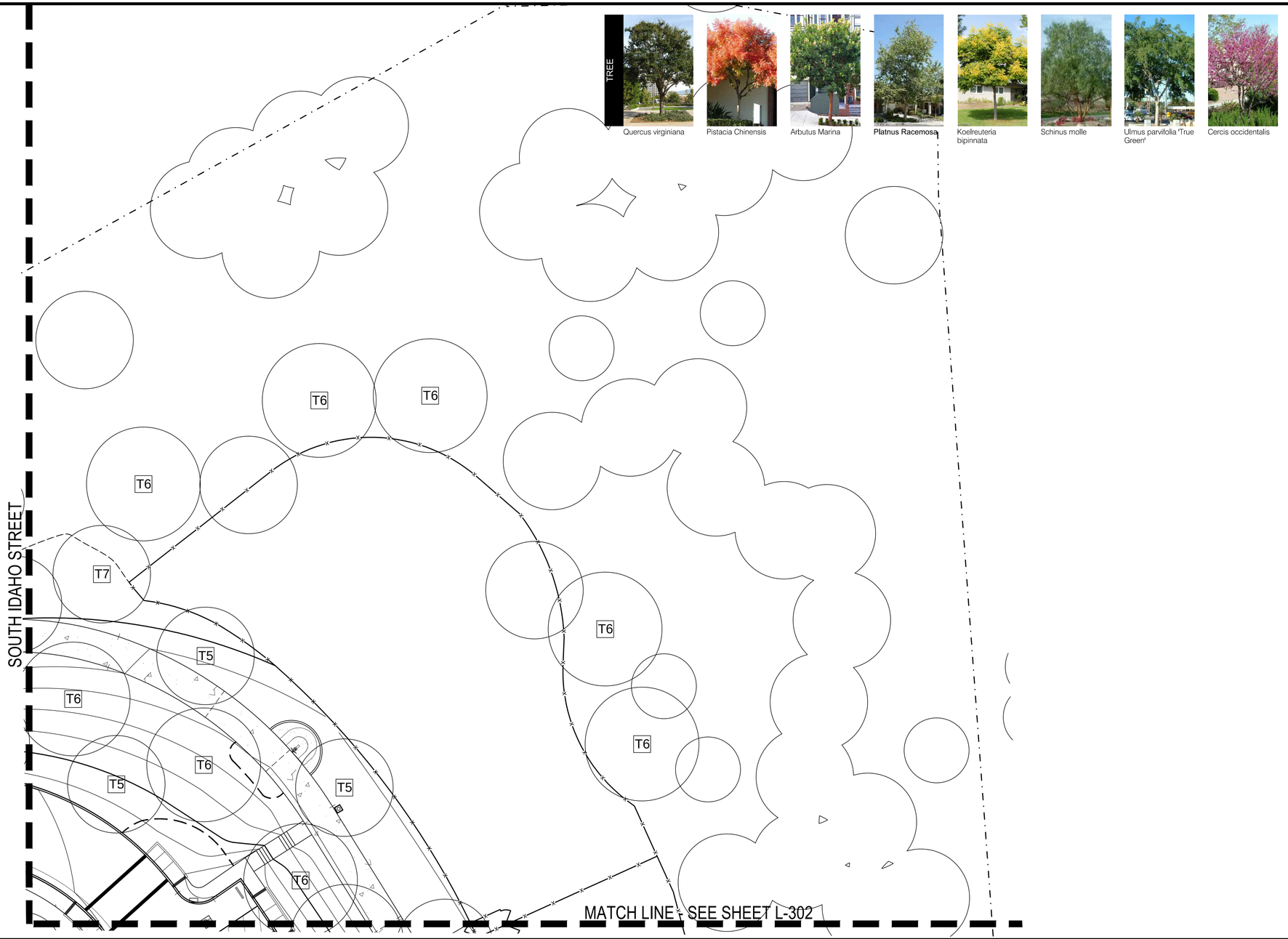
BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
JORDAN W. MAYER No. 6157
Signature 12-31-24
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA
FOR PLANNING PURPOSES ONLY
NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
TREE PLANTING PLAN

DESIGNED BY : TMA			
DRAWN BY : TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY : JM	DATE :	L-304	SHEET 44 OF 89
APPROVED BY : RM/JM	DATE :		



Quercus virginiana

Pistacia Chinensis

Arbutus Marina

Platnus Racemosa

Koelreuteria bipinnata

Schinus molle

Ulmus parvifolia 'True Green'

Cercis occidentalis

TREE LEGEND

Symbol	Genus Species Name	Common Name	Box/Container Size	Plant Factor
T1	Quercus virginiana	Southern Live Oak	72" Box STD	moderate
T2	Pistacia Chinensis	Chinese Pistache	48" Box STD	moderate
T3	Arbutus Marina	Marina Strawberry Tree	24" Box STD	low
T4	Platnus Racemosa	California Sycamore	24" Box MULTI	low
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T7	Ulmus parvifolia 'True Green'	True Green Chinese Elm	24" Box STD	
T8	Cercis occidentalis	Western Redbud	24" Box MULTI	

EXISTING TREE LEGEND

Symbol	Note
○	Existing tree to remain and be protected in place
⊗	Existing tree to be removed

REFER TO SHEET L-4.3 FOR PLANTING DETAILS

NORTH

0 16' 32' 48'

SCALE: 1/16" = 1'-0"

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
JAIGRAM W. MAYER
No. 2617
Signature
Renewal Date
Date
STATE OF CALIFORNIA

LA HABRA LANDFILL
VISTA GRANDE PARK

TREE PLANTING PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE:	AS SHOWN	
CHECKED BY :	JM	DATE :	L-305	SHEET	45 OF 89
APPROVED BY :	RM/JM	DATE :			

MATCH LINE - SEE SHEET L-303

MATCH LINE - SEE SHEET L-305

MATCH LINE - SEE SHEET L-307

NO PARKING

TREE LEGEND

Symbol	Genus Species Name	Common Name	Box/Container Size	Plant Factor
T1	Quercus virginiana	Southern Live Oak	72" Box STD	moderate
T2	Pistacia Chinensis	Chinese Pistache	48" Box STD	moderate
T3	Arbutus Marina	Marina Strawberry Tree	24" Box STD	low
T4	Platnus Racemosa	California Sycamore	24" Box MULTI	low
T5	Koelreuteria bipinnata	Chinese Flame Tree	24" Box STD	moderate
T6	Schinus molle	California Pepper Tree	24" Box STD	moderate
T7	Ulmus parvifolia 'True Green'	True Green Chinese Elm	24" Box STD	
T8	Cercis occidentalis	Western Redbud	24" Box MULTI	

EXISTING TREE LEGEND

Symbol	Note
○	Existing tree to remain and be protected in place
⊗	Existing tree to be removed

REFER TO SHEET L-4.3 FOR PLANTING DETAILS



Quercus virginiana


Pistacia Chinensis


Arbutus Marina


Platnus Racemosa


Koelreuteria bipinnata


Schinus molle


Ulmus parvifolia 'True Green'


Cercis occidentalis

NORTH

0 16' 32' 48'

SCALE: 1/16" = 1'-0"

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

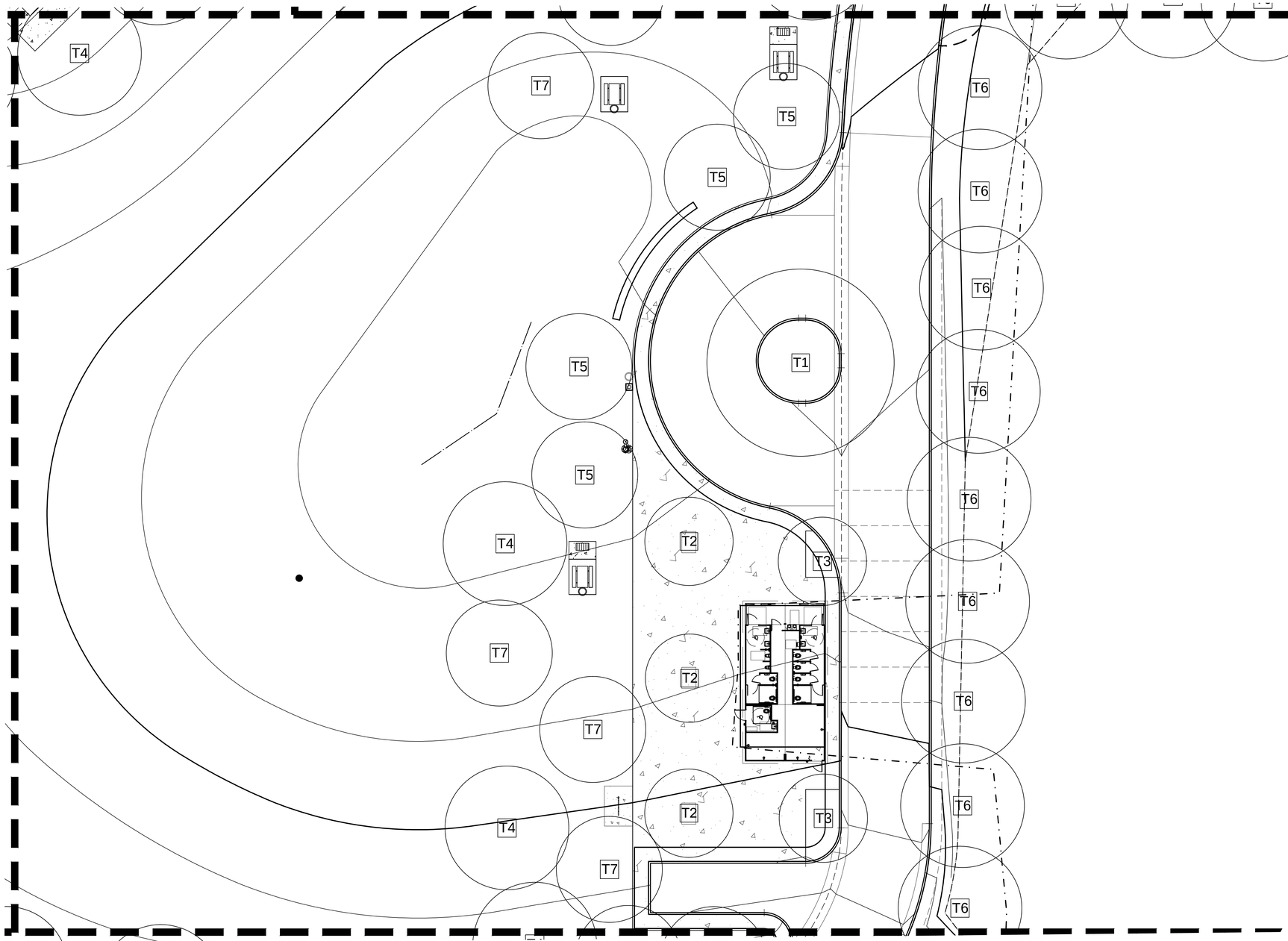
REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER No. 2437
STATE OF CALIFORNIA
Signature 12-31-24 Date
06-16-23 Date

LA HABRA LANDFILL
VISTA GRANDE PARK
TREE PLANTING PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-306	SHEET	46 OF 89
APPROVED BY :	RM/JM	DATE :			

MATCH LINE - SEE SHEET L-304

MATCH LINE - SEE SHEET L-302



MATCH LINE - SEE SHEET L-306

TREE LEGEND

Symbol	Genus Species Name	Common Name	Box/Container Size	Plant Factor
T1	Quercus virginiana	Southern Live Oak	72" Box STD	moderate
T2	Pistacia Chinensis	Chinese Pistache	48" Box STD	moderate
T3	Arbutus Marina	Marina Strawberry Tree	24" Box STD	low
T4	Platnus Racemosa	California Sycamore	24" Box MULTI	low
T5	Koelreuteria bipinnata	Chinese Flame Tree	24" Box STD	moderate
T6	Schinus molle	California Pepper Tree	24" Box STD	moderate
T7	Ulmus parvifolia 'True Green'	True Green Chinese Elm	24" Box STD	
T8	Cercis occidentalis	Western Redbud	24" Box MULTI	

EXISTING TREE LEGEND

Symbol	Note
○	Existing tree to remain and be protected in place
⊗	Existing tree to be removed

REFER TO SHEET L-4.3 FOR PLANTING DETAILS



Quercus virginiana


Pistacia Chinensis


Arbutus Marina


Platnus Racemosa


Koelreuteria bipinnata


Schinus molle


Ulmus parvifolia 'True Green'


Cercis occidentalis

NORTH

0 16' 32' 48'

SCALE: 1/16" = 1'-0"

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Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
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Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER No. 2497
STATE OF CALIFORNIA
Signature 12-31-24
Rich Mayer Date
06-16-23
Date
FOR INFORMATION ONLY

LA HABRA LANDFILL
VISTA GRANDE PARK
TREE PLANTING PLAN

DESIGNED BY :	TMA		
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN
CHECKED BY :	JM	DATE :	L-307
APPROVED BY :	RM/JM	DATE :	SHEET 47 OF 89



Quercus virginiana | Pistacia Chinensis | Arbutus Marina | Platnus Racemosa | Koelreuteria bipinnata | Schinus molle | Ulmus parvifolia 'True Green' | Cercis occidentalis

EXISTING TREE LEGEND

Symbol	Note
◯	Existing tree to remain and be protected in place
⊗	Existing tree to be removed

REFER TO SHEET L-4.3 FOR PLANTING DETAILS

TREE LEGEND

Symbol	Genus Species Name	Common Name	Box/Container Size	Plant Factor
T1	Quercus virginiana	Southern Live Oak	72" Box STD	moderate
T2	Pistacia Chinensis	Chinese Pistache	48" Box STD	moderate
T3	Arbutus Marina	Marina Strawberry Tree	24" Box STD	low
T4	Platnus Racemosa	California Sycamore	24" Box MULTI	low
T5	Koelreuteria bipinnata	Chinese Flame Tree	24" Box STD	moderate
T6	Schinus molle	California Pepper Tree	24" Box STD	moderate
T7	Ulmus parvifolia 'True Green'	True Green Chinese Elm	24" Box STD	
T8	Cercis occidentalis	Western Redbud	24" Box MULTI	

EXISTING TREE LEGEND

MATCH LINE - SEE SHEET L-305

MATCH LINE - SEE SHEET L-301

LAS LOMAS DRIVE

EXISTING TREE TO BE REMOVED

NORTH

0 16' 32' 48'

SCALE: 1/16" = 1'-0"

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NO.	REVISION DESCRIPTION	BY:

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(NOT FOR CONSTRUCTION)

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Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
JEHAD W. MAYER No. 5427
Signature 12-31-24
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA

LA HABRA LANDFILL
VISTA GRANDE PARK

TREE PLANTING PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-308	SHEET	48 OF 89
APPROVED BY :	RM/JM	DATE :			



Agave americana


Baccharis pilularis 'Pigeon Point'


Buxus m.japonica 'Green Beauty'


Callistemon 'Little John'


Galvezia speciosa


Lantana montevidensis 'Alba'


Lantana sellowiana


Lantana x 'New Gold'



Kikuyu sod Carex praegracilis


Chondropetalum tectorum


Juncus patens 'Elk Blue'


Leymus condensatus 'Canyon Prince'



Muhlenbergia rigens **Heteromeles arbutifolia**


Rhus ovata



Liriope muscari


Phormium 'Maori Queen'

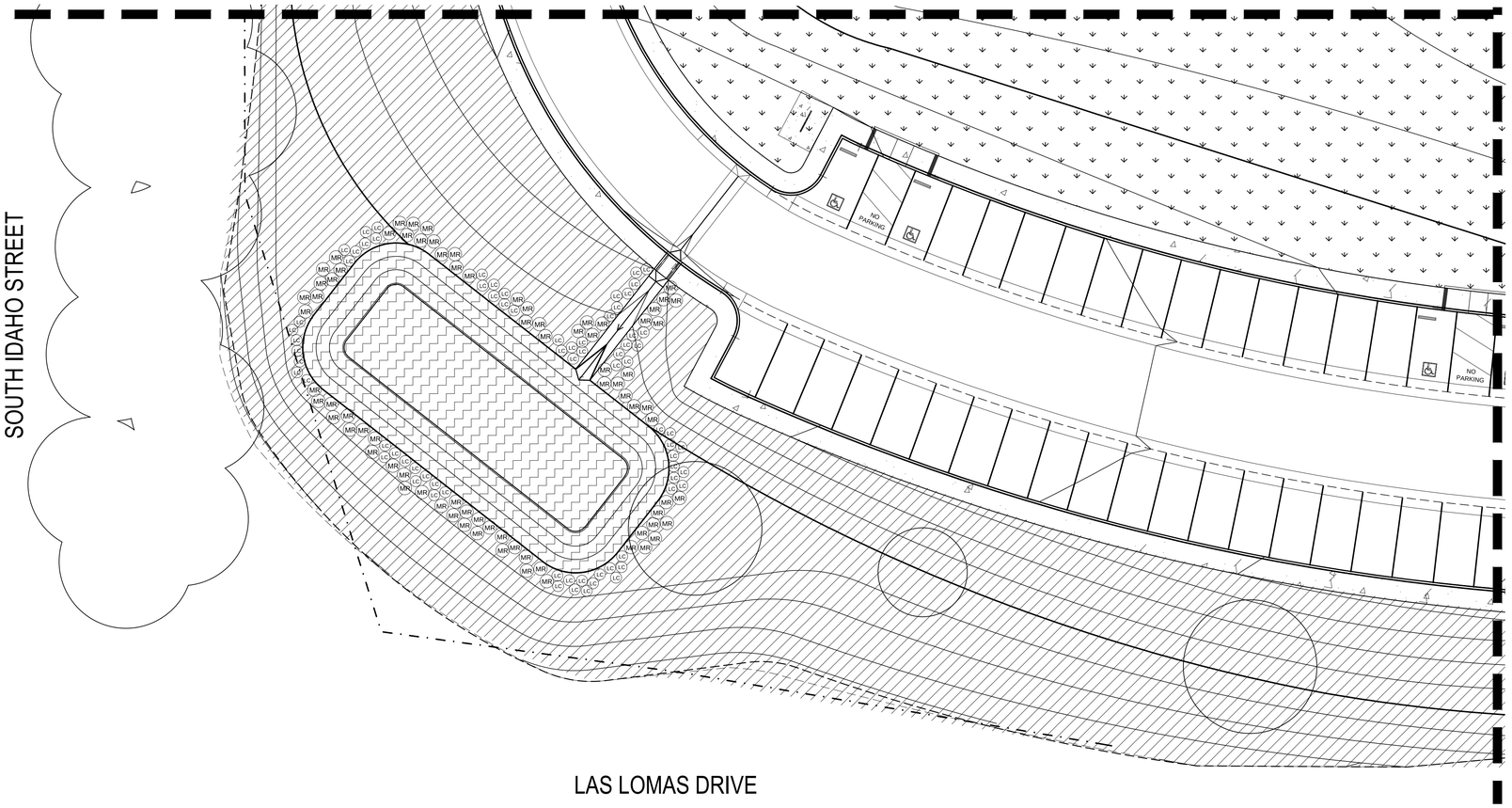

Pittosporum crassifolium 'Nana'


Rosa spp. 'Iceberg'


Rosmarinus o. 'Huntington Carpet'


Westringia 'Morning Light'

MATCH LINE - SEE SHEET L-310



NORTH

0 16' 32' 48'

SCALE: 1/16" = 1'-0"

SHRUB LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
AA	Agave americana	Century Plan	15 Gallon	96" O.C.	low	
	Baccharis pilularis 'Pigeon Point'	Pigeon Point Coyote brush	5 Gallon	6' O.C.	low	
BM	Buxus m.japonica 'Green Beauty'	Green Beauty Boxwood	5 Gallon	24" O.C.	moderate	
C	Callistemon 'Little John'	Dwarf Bottlebrush	5 Gallon	36" O.C.	low	
G	Galvezia speciosa	Island Snapdragon	5 Gallon	spaced as shown	very low	
	Lantana montevidensis 'Alba'	White Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
	Lantana sellowiana	Purple Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
LN	Lantana 'New Gold'	New Gold Lantana	5 Gallon	36" O.C.	low	18" from hardscape or curb
*	Liriope muscari	Big Blue Lilyturf	1 Gallon	16" O.C.	moderate	
P	Phormium 'Maori Queen'	Maori Queen New Zealand Flax	5 Gallon	42" O.C.	moderate	
PN	Pittosporum crassifolium 'Nana'	Dwarf Karo	5 Gallon	30" O.C.	moderate	
R	Rosa spp. 'Iceberg'	White Iceberg Shrub Rose	5 Gallon	36" O.C.	moderate	
	Rosmarinus officinalis 'Huntington Carpet'	Huntington Carpet Rosemary	1 Gallon	36" O.C.	low	36" from hardscape or curb
W	Westringia 'Morning Light'	Morning Light Coast Rosemary	5 Gallon	30" O.C.	low	

TURF LEGEND

Symbol	Genus Species Name	Common Name	Method Installed
	Pennisetum clandestinum	Kikuyu Grass	Contractor to install Hydrostolized Turf

Turf alternative #1 (pending owner approval): In lieu of Kikuyu, provide and install Hybrid Bermuda "Bandera" sod in the ballfield, including the outfield and turf area beyond the outfield up to the nearest mow strip or other paved perimeter of the turf area adjoining the ballfield. At all other remaining turf areas, provide and install West Coaster fescue blend in sod type. Both Hybrid Bermuda "Bandera" sod and "West Coaster" sod are to be purchased/provided from West Coast Turf. No alternatives will be accepted.

BIO-RETENTION PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
	Grass Mix: Carex praegracilis Chondropetalum tectorum Juncus patens 'Elk Blue'	Grass Mix: California Field Sedge Small Cape Rush Elk Blue California Rush	1 Gallon 5 Gallon 1 Gallon	12" O.C. 24" O.C. 12" O.C.	moderate low low	
LC	Leymus condensatus 'Canyon Prince'	Canyon Prince Wild Rye	5 Gallon	30" O.C.	low	
MR	Muhlenbergia rigens	Deer Grass	5 Gallon	36" O.C.	low	

SCREENING PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setback
HA	Heteromeles arbutifolia	Toyon	5 Gallon	spaced as shown	very low	
RO	Rhus ovata	Sugar Bush	5 Gallon	spaced as shown	very low	

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Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

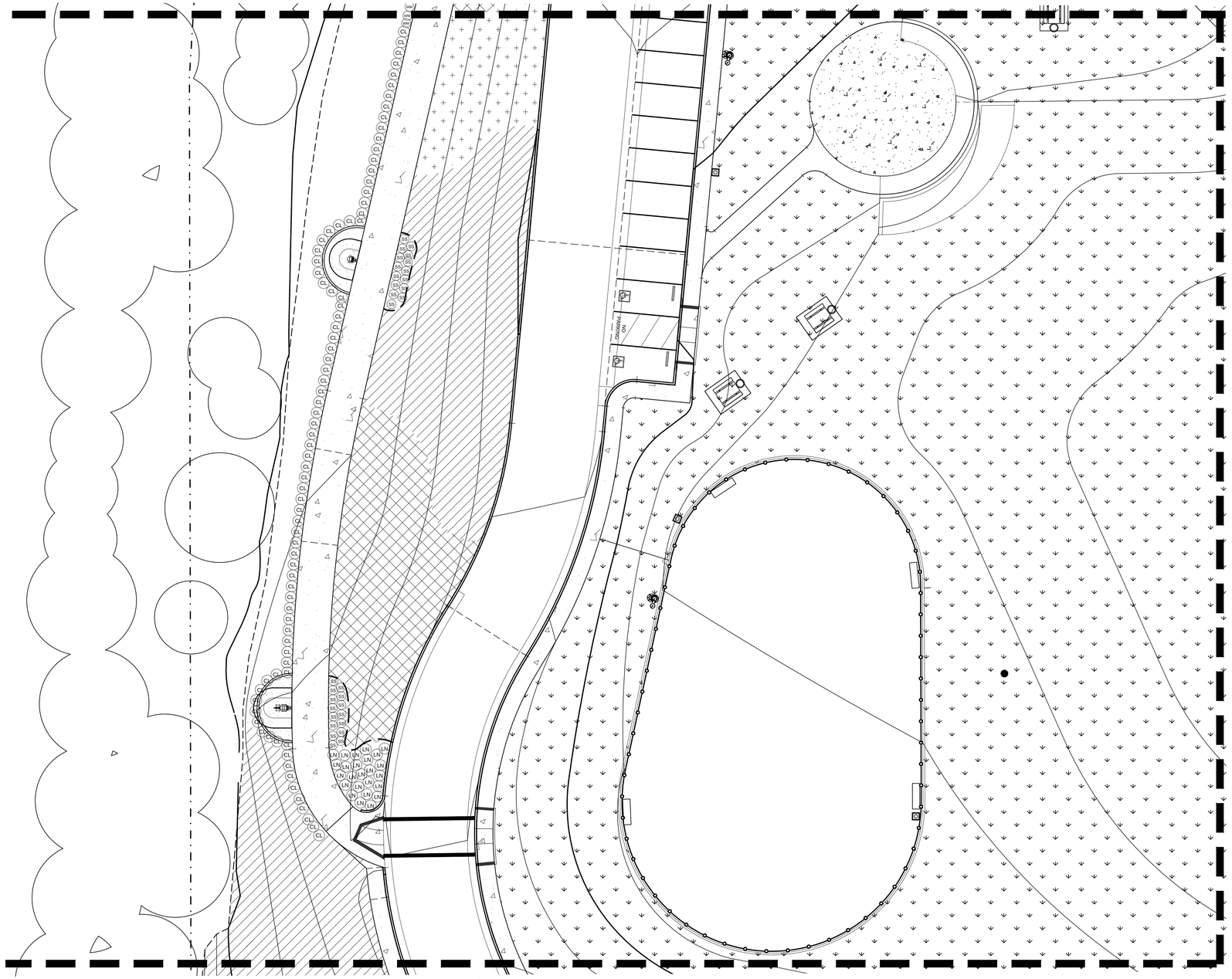
TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
JEREMIAS W. MAYER - NO. 5627
Signature 12-31-24
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA

LA HABRA LANDFILL
VISTA GRANDE PARK
SHRUB PLANTING PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-309	SHEET 49 OF 89	
APPROVED BY :	RM/JM	DATE :			

MATCH LINE - SEE SHEET L-311





0 16' 32' 48'

SCALE: 1/16" = 1'-0"

SHRUB LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
AA	Agave americana	Century Plan	15 Gallon	96" O.C.	low	
	Baccharis pilularis 'Pigeon Point'	Pigeon Point Coyote brush	5 Gallon	6' O.C.	low	
BM	Buxus m.japonica 'Green Beauty'	Green Beauty Boxwood	5 Gallon	24" O.C.	moderate	
C	Callistemon 'Little John'	Dwarf Bottlebrush	5 Gallon	36" O.C.	low	
G	Galvezia speciosa	Island Snapdragon	5 Gallon	spaced as shown	very low	
	Lantana montevidensis 'Alba'	White Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
	Lantana sellowiana	Purple Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
LN	Lantana 'New Gold'	New Gold Lantana	5 Gallon	36" O.C.	low	18" from hardscape or curb
*	Liriope muscari	Big Blue Lilyturf	1 Gallon	16" O.C.	moderate	
PH	Phormium 'Maori Queen'	Maori Queen New Zealand Flax	5 Gallon	42" O.C.	moderate	
PN	Pittosporum crassifolium 'Nana'	Dwarf Karo	5 Gallon	30" O.C.	moderate	
R	Rosa spp. 'Iceberg'	White Iceberg Shrub Rose	5 Gallon	36" O.C.	moderate	
	Rosmarinus officinalis 'Huntington Carpet'	Huntington Carpet Rosemary	1 Gallon	36" O.C.	low	36" from hardscape or curb
W	Westringia 'Morning Light'	Morning Light Coast Rosemary	5 Gallon	30" O.C.	low	

TURF LEGEND

Symbol	Genus Species Name	Common Name	Method Installed
	Pennisetum clandestinum	Kikuyu Grass	Contractor to install Hydrostolized Turf

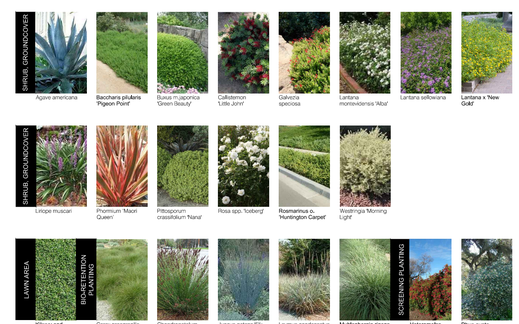
Turf alternative #1 (pending owner approval): In lieu of Kikuyu, provide and install Hybrid Bermuda "Bandera" sod in the ballfield, including the outfield and turf area beyond the outfield up to the nearest mow strip or other paved perimeter of the turf area adjoining the ballfield. At all other remaining turf areas, provide and install West Coaster fescue blend in sod type. Both Hybrid Bermuda "Bandera" sod and "West Coaster" sod are to be purchased/provided from West Coast Turf. No alternatives will be accepted.

BIO-RETENTION PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
	Grass Mix: Carex praegracilis Chondropetalum tectorum Juncus patens 'Elk Blue'	Grass Mix: California Field Sedge Small Cape Rush Elk Blue California Rush	1 Gallon 5 Gallon 1 Gallon	12" O.C. 24" O.C. 12" O.C.	moderate low low	
LC	Leymus condensatus 'Canyon Prince'	Canyon Prince Wild Rye	5 Gallon	30" O.C.	low	
MR	Muhlenbergia rigens	Deer Grass	5 Gallon	36" O.C.	low	

SCREENING PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setback
HA	Heteromeles arbutifolia	Toyon	5 Gallon	spaced as shown	very low	
RO	Rhus ovata	Sugar Bush	5 Gallon	spaced as shown	very low	



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Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

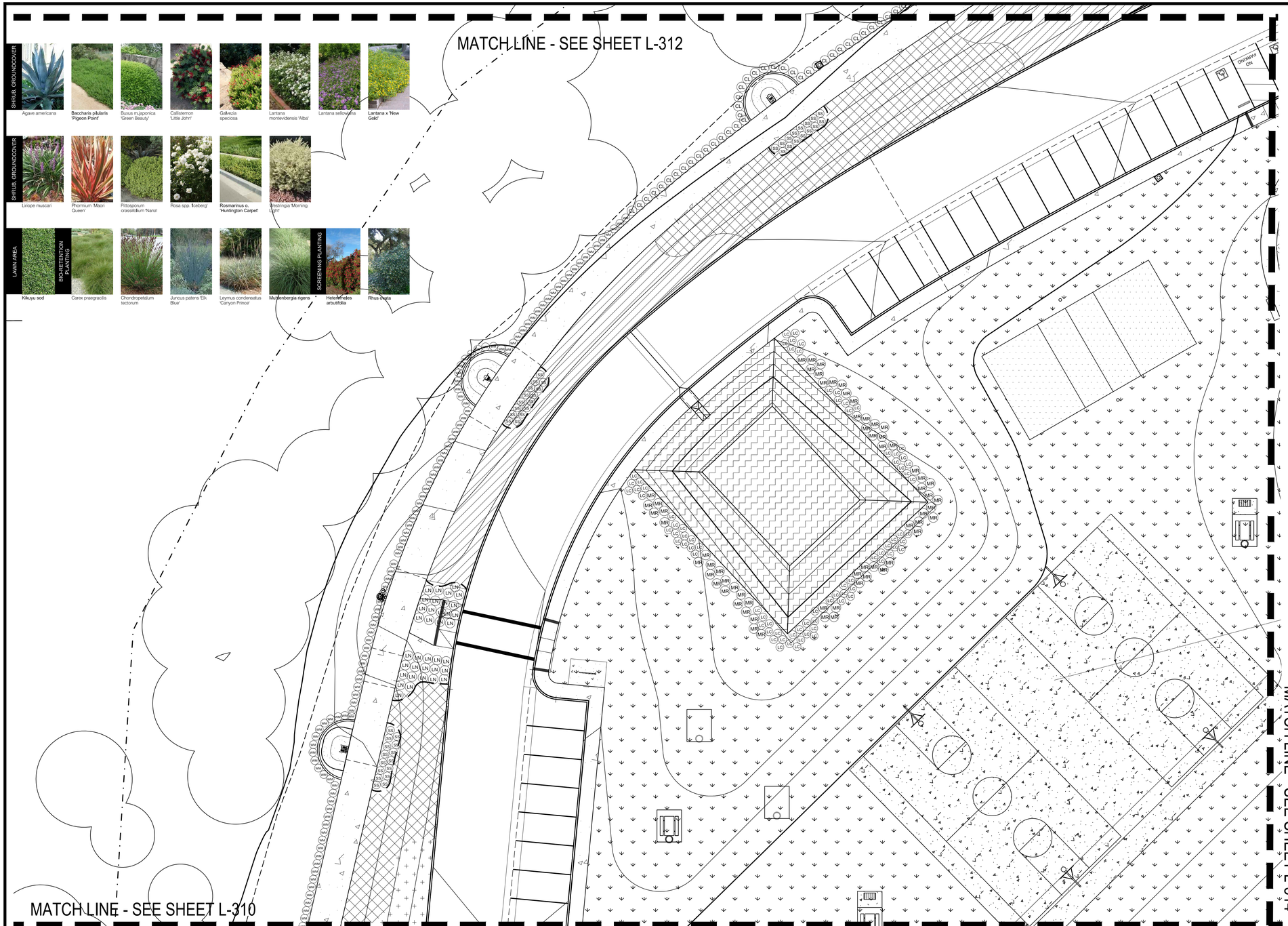
REGISTERED LANDSCAPE ARCHITECT
JEFFREY W. MAYER
No. 2427
Signature
12-31-24
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA
FOR PLANNING PURPOSES ONLY
NOT FOR CONSTRUCTION

LA HABRA LANDFILL

VISTA GRANDE PARK

SHRUB PLANTING PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-310	SHEET	50 OF 89
APPROVED BY :	RM/JM	DATE :			



SHRUB LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
AA	Agave americana	Century Plan	15 Gallon	96" O.C.	low	
	Baccharis pilularis 'Pigeon Point'	Pigeon Point Coyote brush	5 Gallon	6' O.C.	low	
BB	Buxus m.japonica 'Green Beauty'	Green Beauty Boxwood	5 Gallon	24" O.C.	moderate	
CL	Callistemon 'Little John'	Dwarf Bottlebrush	5 Gallon	36" O.C.	low	
GS	Galvezia speciosa	Island Snapdragon	5 Gallon	spaced as shown	very low	
	Lantana montevidensis 'Alba'	White Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
	Lantana sellowiana	Purple Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
LN	Lantana 'New Gold'	New Gold Lantana	5 Gallon	36" O.C.	low	18" from hardscape or curb
*	Liriope muscari	Big Blue Lilyturf	1 Gallon	16" O.C.	moderate	
PH	Phormium 'Maori Queen'	Maori Queen New Zealand Flax	5 Gallon	42" O.C.	moderate	
PN	Pittosporum crassifolium 'Nana'	Dwarf Karo	5 Gallon	30" O.C.	moderate	
RI	Rosa spp. 'Iceberg'	White Iceberg Shrub Rose	5 Gallon	36" O.C.	moderate	
	Rosmarinus officinalis 'Huntington Carpet'	Huntington Carpet Rosemary	1 Gallon	36" O.C.	low	36" from hardscape or curb
WI	Westringia 'Morning Light'	Morning Light Coast Rosemary	5 Gallon	30" O.C.	low	

TURF LEGEND

Symbol	Genus Species Name	Common Name	Method Installed
	Pennisetum clandestinum	Kikuyu Grass	Contractor to install Hydrostolized Turf

Turf alternative #1 (pending owner approval): In lieu of Kikuyu, provide and install Hybrid Bermuda "Bandera" sod in the ballfield, including the outfield and turf area beyond the outfield up to the nearest mow strip or other paved perimeter of the turf area adjoining the ballfield. At all other remaining turf areas, provide and install West Coaster fescue blend in sod type. Both Hybrid Bermuda "Bandera" sod and "West Coaster" sod are to be purchased/provided from West Coast Turf. No alternatives will be accepted.

BIO-RETENTION PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
	Grass Mix: Carex praegracilis Chondropetalum tectorum Juncus patens 'Elk Blue'	Grass Mix: California Field Sedge Small Cape Rush Elk Blue California Rush	1 Gallon 5 Gallon 1 Gallon	12" O.C. 24" O.C. 12" O.C.	moderate low low	
LC	Leymus condensatus 'Canyon Prince'	Canyon Prince Wild Rye	5 Gallon	30" O.C.	low	
MR	Muhlenbergia rigens	Deer Grass	5 Gallon	36" O.C.	low	

SCREENING PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setback
HA	Heteromeles arbutifolia	Toyon	5 Gallon	spaced as shown	very low	
RO	Rhus ovata	Sugar Bush	5 Gallon	spaced as shown	very low	

NORTH

0 16' 32' 48'

SCALE: 1/16" = 1'-0"

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Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER
No. 2497
Signature
12/31/24
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA
FOR PLANNING PURPOSES ONLY
NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK

SHRUB PLANTING PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-311	SHEET	51 OF 89
APPROVED BY :	RM/JM	DATE :			



Agave americana



Baccharis pilularis 'Pigeon Point'



Buxus m.japonica 'Green Beauty'



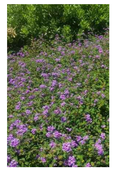
Callistemon 'Little John'



Galvezia speciosa



Lantana montevidensis 'Alba'



Lantana sellowiana



Lantana x 'New Gold'



Liriope muscari



Phormium 'Maori Queen'



Pittosporum crassifolium 'Nana'



Rosa spp. 'Iceberg'



Rosmarinus o. 'Huntington Carpet'



Westringia 'Morning Light'



Kikuyu sod

Carex praegracilis

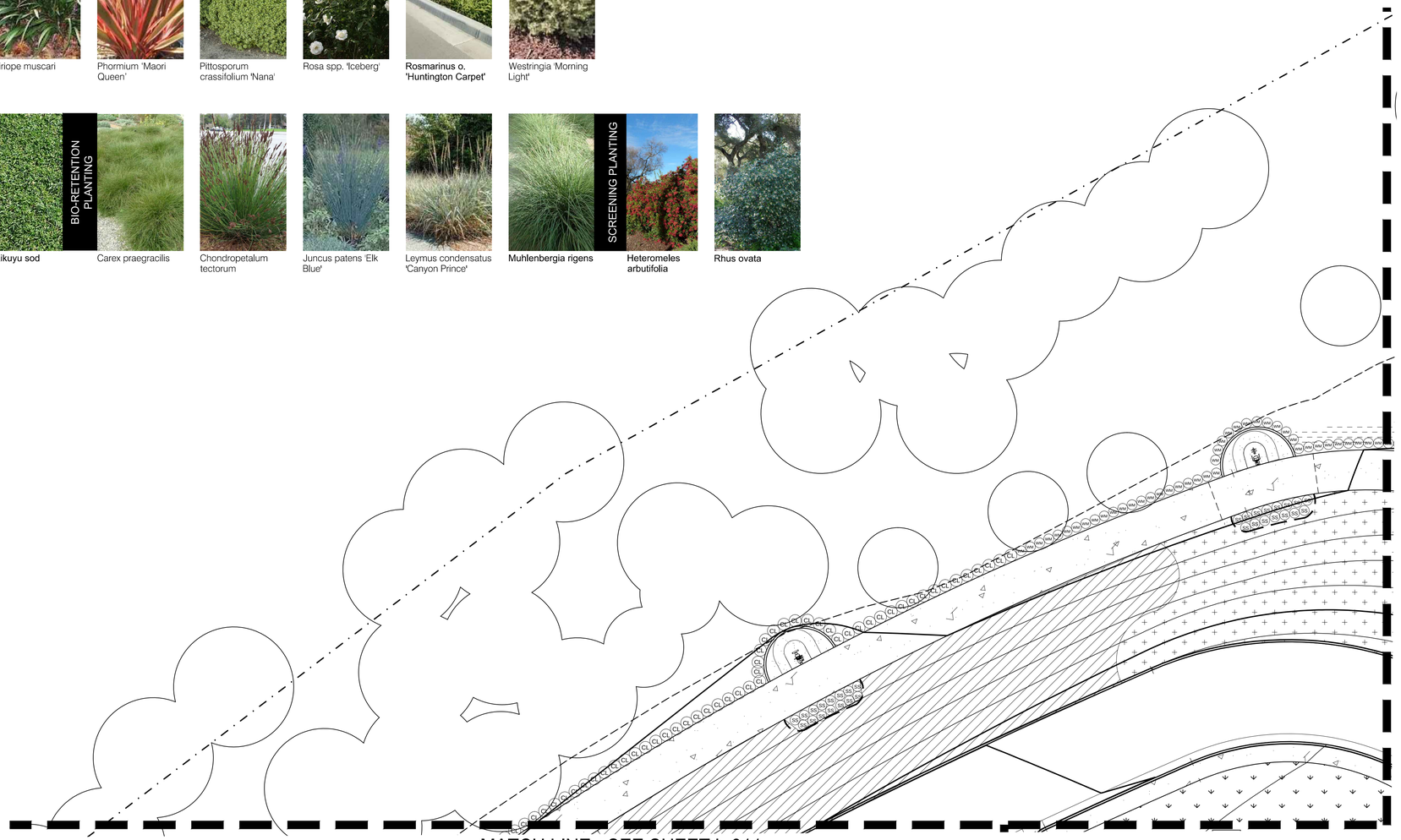
Chondropetalum tectorum

Juncus patens 'Elk Blue'

Leymus condensatus 'Canyon Prince'

Muhlenbergia rigens **Heteromeles arbutifolia**

Rhus ovata



SHRUB LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
AA	Agave americana	Century Plan	15 Gallon	96" O.C.	low	
	Baccharis pilularis 'Pigeon Point'	Pigeon Point Coyote brush	5 Gallon	6' O.C.	low	
BM	Buxus m.japonica 'Green Beauty'	Green Beauty Boxwood	5 Gallon	24" O.C.	moderate	
C	Callistemon 'Little John'	Dwarf Bottlebrush	5 Gallon	36" O.C.	low	
G	Galvezia speciosa	Island Snapdragon	5 Gallon	spaced as shown	very low	
	Lantana montevidensis 'Alba'	White Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
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LN	Lantana 'New Gold'	New Gold Lantana	5 Gallon	36" O.C.	low	18" from hardscape or curb
M	Liriope muscari	Big Blue Lilyturf	1 Gallon	16" O.C.	moderate	
PM	Phormium 'Maori Queen'	Maori Queen New Zealand Flax	5 Gallon	42" O.C.	moderate	
PN	Pittosporum crassifolium 'Nana'	Dwarf Karo	5 Gallon	30" O.C.	moderate	
R	Rosa spp. 'Iceberg'	White Iceberg Shrub Rose	5 Gallon	36" O.C.	moderate	
	Rosmarinus officinalis 'Huntington Carpet'	Huntington Carpet Rosemary	1 Gallon	36" O.C.	low	36" from hardscape or curb
W	Westringia 'Morning Light'	Morning Light Coast Rosemary	5 Gallon	30" O.C.	low	

TURF LEGEND

Symbol	Genus Species Name	Common Name	Method Installed
	Pennisetum clandestinum	Kikuyu Grass	Contractor to install Hydrostolized Turf

Turf alternative #1 (pending owner approval): In lieu of Kikuyu, provide and install Hybrid Bermuda "Bandera" sod in the ballfield, including the outfield and turf area beyond the outfield up to the nearest mow strip or other paved perimeter of the turf area adjoining the ballfield. At all other remaining turf areas, provide and install West Coaster fescue blend in sod type. Both Hybrid Bermuda "Bandera" sod and "West Coaster" sod are to be purchased/provided from West Coast Turf. No alternatives will be accepted.

BIO-RETENTION PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
	Grass Mix: Carex praegracilis Chondropetalum tectorum Juncus patens 'Elk Blue'	Grass Mix: California Field Sedge Small Cape Rush Elk Blue California Rush	1 Gallon 5 Gallon 1 Gallon	12" O.C. 24" O.C. 12" O.C.	moderate low low	
L	Leymus condensatus 'Canyon Prince'	Canyon Prince Wild Rye	5 Gallon	30" O.C.	low	
MR	Muhlenbergia rigens	Deer Grass	5 Gallon	36" O.C.	low	

SCREENING PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setback
HA	Heteromeles arbutifolia	Toyon	5 Gallon	spaced as shown	very low	
RO	Rhus ovata	Sugar Bush	5 Gallon	spaced as shown	very low	

NORTH

0 16' 32' 48'

SCALE: 1/16" = 1'-0"

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

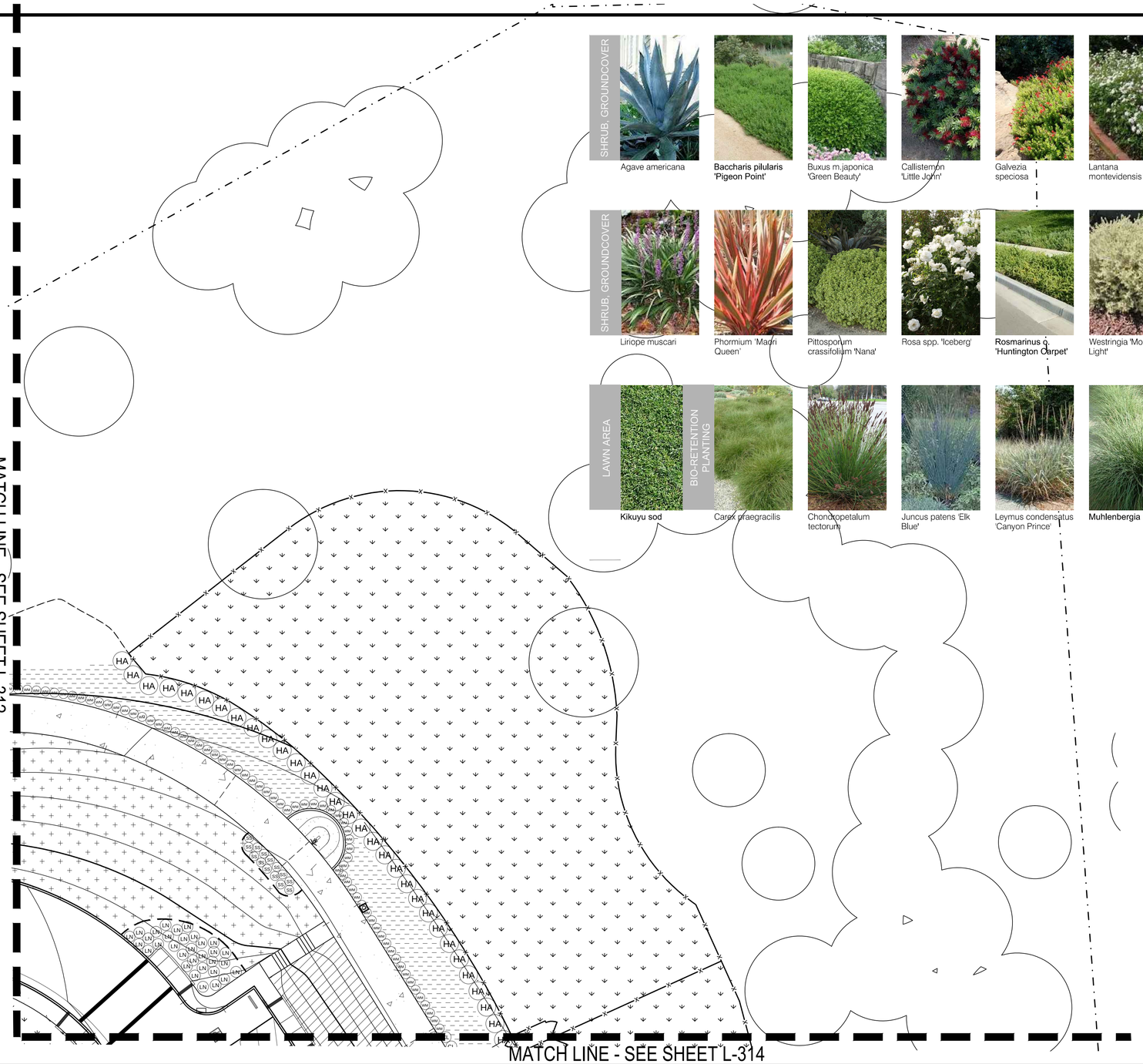
REGISTERED LANDSCAPE ARCHITECT
JERARD W. MAYER No.2437
Signature
12-31-24
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA

LA HABRA LANDFILL
VISTA GRANDE PARK

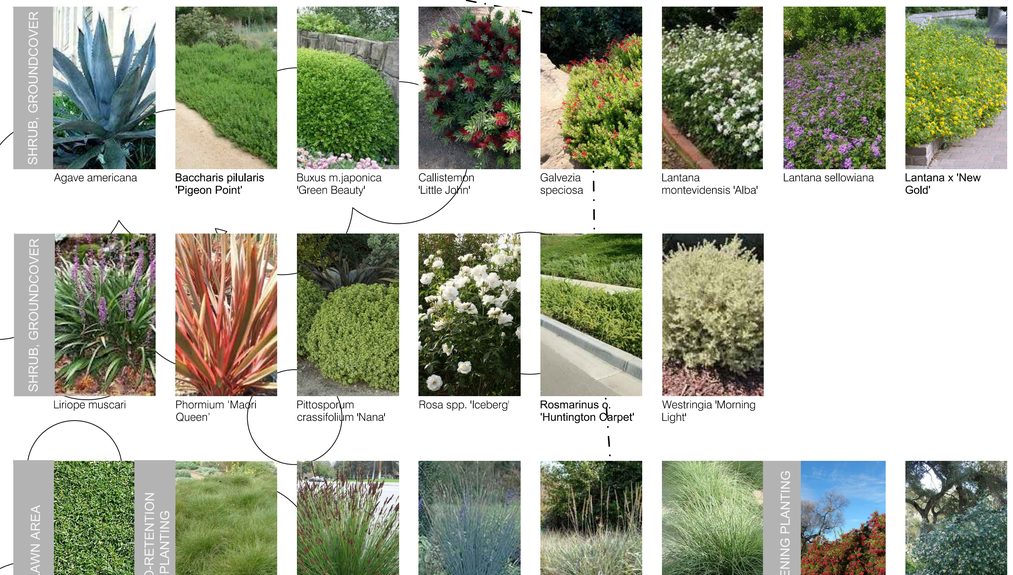
SHRUB PLANTING PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-312	SHEET 52 OF 89	
APPROVED BY :	RM/JM	DATE :			

MATCH LINE - SEE SHEET L-312



MATCH LINE - SEE SHEET L-314



SHRUB LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
AA	Agave americana	Century Plan	15 Gallon	96" O.C.	low	
	Baccharis pilularis 'Pigeon Point'	Pigeon Point Coyote brush	5 Gallon	6' O.C.	low	
BM	Buxus m.japonica 'Green Beauty'	Green Beauty Boxwood	5 Gallon	24" O.C.	moderate	
C	Callistemon 'Little John'	Dwarf Bottlebrush	5 Gallon	36" O.C.	low	
G	Galvezia speciosa	Island Snapdragon	5 Gallon	spaced as shown	very low	
	Lantana montevidensis 'Alba'	White Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
	Lantana sellowiana	Purple Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
LN	Lantana 'New Gold'	New Gold Lantana	5 Gallon	36" O.C.	low	18" from hardscape or curb
*	Liriope muscari	Big Blue Lilyturf	1 Gallon	16" O.C.	moderate	
PM	Phormium 'Maori Queen'	Maori Queen New Zealand Flax	5 Gallon	42" O.C.	moderate	
PN	Pittosporum crassifolium 'Nana'	Dwarf Karo	5 Gallon	30" O.C.	moderate	
R	Rosa spp. 'Iceberg'	White Iceberg Shrub Rose	5 Gallon	36" O.C.	moderate	
	Rosmarinus officinalis 'Huntington Carpet'	Huntington Carpet Rosemary	1 Gallon	36" O.C.	low	36" from hardscape or curb
W	Westringia 'Morning Light'	Morning Light Coast Rosemary	5 Gallon	30" O.C.	low	

TURF LEGEND

Symbol	Genus Species Name	Common Name	Method Installed
	Pennisetum clandestinum	Kikuyu Grass	Contractor to install Hydrostolized Turf

Turf alternative #1 (pending owner approval): In lieu of Kikuyu, provide and install Hybrid Bermuda "Bandera" sod in the ballfield, including the outfield and turf area beyond the outfield up to the nearest mow strip or other paved perimeter of the turf area adjoining the ballfield. At all other remaining turf areas, provide and install West Coaster fescue blend in sod type. Both Hybrid Bermuda "Bandera" sod and "West Coaster" sod are to be purchased/provided from West Coast Turf. No alternatives will be accepted.

BIO-RETENTION PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
	Grass Mix: Carex praegracilis Chondropetalum tectorum Juncus patens 'Elk Blue'	Grass Mix: California Field Sedge Small Cape Rush Elk Blue California Rush	1 Gallon 5 Gallon 1 Gallon	12" O.C. 24" O.C. 12" O.C.	moderate low low	
C	Leymus condensatus 'Canyon Prince'	Canyon Prince Wild Rye	5 Gallon	30" O.C.	low	
M	Muhlenbergia rigens	Deer Grass	5 Gallon	36" O.C.	low	

SCREENING PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setback
HA	Heteromeles arbutifolia	Toyon	5 Gallon	spaced as shown	very low	
RO	Rhus ovata	Sugar Bush	5 Gallon	spaced as shown	very low	

NORTH

0 16' 32' 48'

SCALE: 1/16" = 1'-0"

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Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
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NO.	REVISION DESCRIPTION	BY:

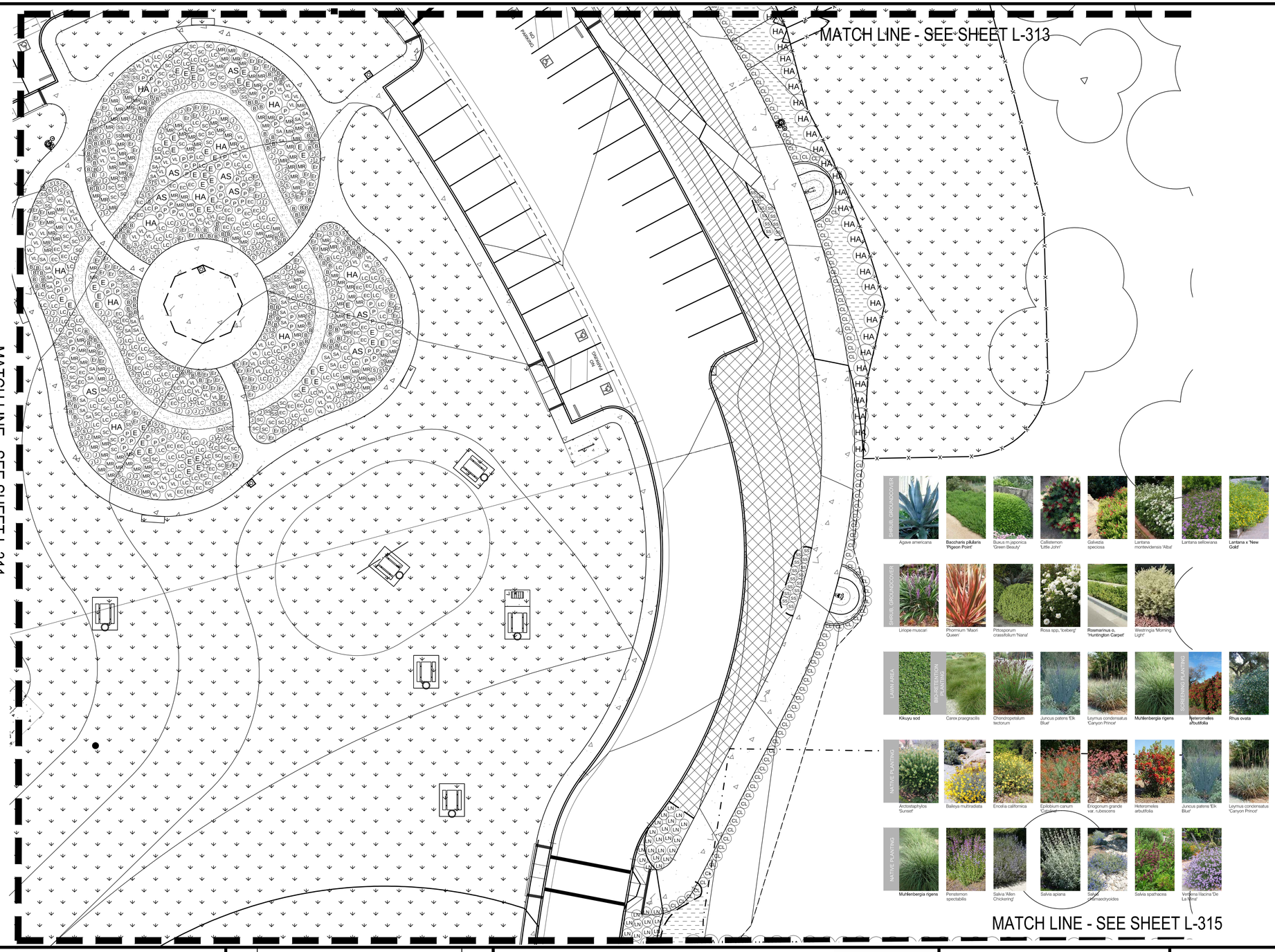
BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER No.1437
Signature 12-31-23
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA
FOR INFORMATIONAL PURPOSES ONLY NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
SHRUB PLANTING PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :			
APPROVED BY :	RM/JM	DATE :	L-313	SHEET 53 OF 89	



SHRUB LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
AA	Agave americana	Century Plan	15 Gallon	96" O.C.	low	
	Baccharis pilularis 'Pigeon Point'	Pigeon Point Coyote brush	5 Gallon	6' O.C.	low	
BB	Buxus m.japonica 'Green Beauty'	Green Beauty Boxwood	5 Gallon	24" O.C.	moderate	
CL	Callistemon 'Little John'	Dwarf Bottlebrush	5 Gallon	36" O.C.	low	
GS	Galvezia speciosa	Island Snapdragon	5 Gallon	spaced as shown	very low	
	Lantana montevidensis 'Alba'	White Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
	Lantana sellowiana	Purple Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
LN	Lantana 'New Gold'	New Gold Lantana	5 Gallon	36" O.C.	low	18" from hardscape or curb
LM	Liriope muscari	Big Blue Lilyturf	1 Gallon	16" O.C.	moderate	
PH	Phormium 'Maori Queen'	Maori Queen New Zealand Flax	5 Gallon	42" O.C.	moderate	
PN	Pittosporum crassifolium 'Nana'	Dwarf Karo	5 Gallon	30" O.C.	moderate	
RI	Rosa spp. 'Iceberg'	White Iceberg Shrub Rose	5 Gallon	36" O.C.	moderate	
	Rosmarinus officinalis 'Huntington Carpet'	Huntington Carpet Rosemary	1 Gallon	36" O.C.	low	36" from hardscape or curb
WI	Westringia 'Morning Light'	Morning Light Coast Rosemary	5 Gallon	30" O.C.	low	

TURF LEGEND

Symbol	Genus Species Name	Common Name	Method Installed
	Pennisetum clandestinum	Kikuyu Grass	Contractor to install Hydrostolized Turf

Turf alternative #1 (pending owner approval): In lieu of Kikuyu, provide and install Hybrid Bermuda "Bandera" sod in the ballfield, including the outfield and turf area beyond the outfield up to the nearest mow strip or other paved perimeter of the turf area adjoining the ballfield. At all other remaining turf areas, provide and install West Coaster fescue blend in sod type. Both Hybrid Bermuda "Bandera" sod and "West Coaster" sod are to be purchased/provided from West Coast Turf. No alternatives will be accepted.

NATIVE PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setback
AS	Arctostaphylos 'Sunset'	Sunst manzanita	5 Gallon	5' O.C.	low	
BM	Baileya multiradiata	Desert Marigold	1 Gallon	2' o.c.	low	
EC	Encelia californica	Coast Sunflower	5 Gallon	spaced as shown	low	
EP	Eplobium canum 'Catalina'	Catalina Fuchsia	5 Gallon	spaced as shown	low	
EG	Eriogonum grande var. rubescens	Red buckwheat	1 Gallon	3'	low	
HA	Heteromeles arbutifolia	Toyon	5 Gallon	spaced as shown	low	
JP	Juncus patens 'Elk Blue'	Elk Blue California Rush	5 Gallon	2' O.C.	low	
LC	Leymus condensatus 'Canyon Prince'	Canyon Prince Wild rye	5 Gallon	spaced as shown	low	
MR	Muhlenbergia rigens	Deer Grass	5 Gallon	spaced as shown	low	
PS	Penstemon spectabilis	Showy penstemon	5 Gallon	60" O.C.	low	
SC	Salvia 'Allen Chickering'	Allen Chickering sage	5 Gallon	spaced as shown	low	
SA	Salvia apiana	White sage	5 Gallon	spaced as shown	low	
SC	Salvia chamaedryoides	Germander Sage	5 Gallon	spaced as shown	low	
SS	Salvia spathacea	Hummingbird Sage	5 Gallon	spaced as shown	low	
VL	Verbena lilacina 'De La Mina'	Lilac verbena	5 Gallon	spaced as shown	low	

NORTH

0 16' 32' 48'

SCALE: 1/16" = 1'-0"

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Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

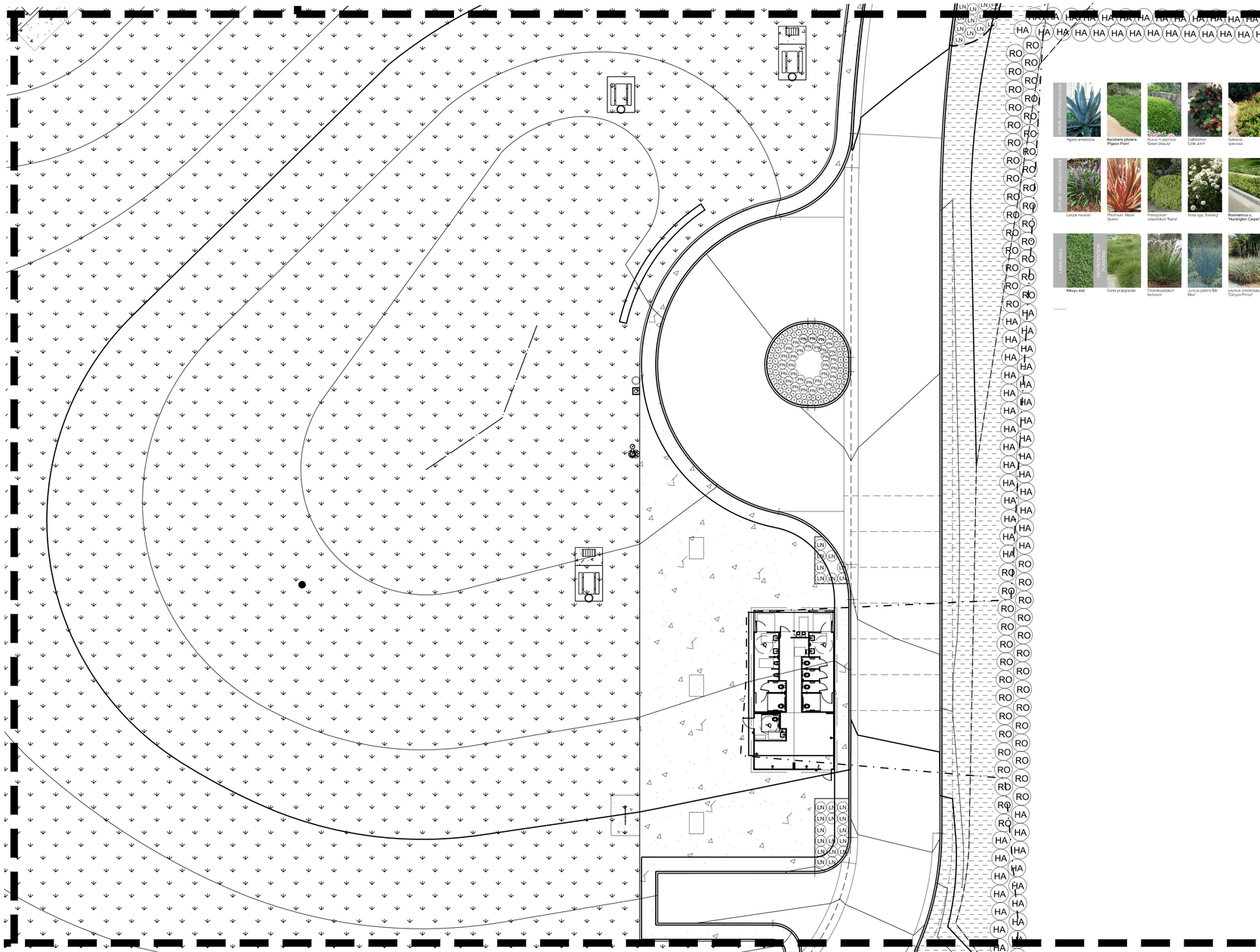
TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
JEHANNE W. MAYER No. 5137
Signature
06-16-23
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA

LA HABRA LANDFILL
VISTA GRANDE PARK
SHRUB PLANTING PLAN

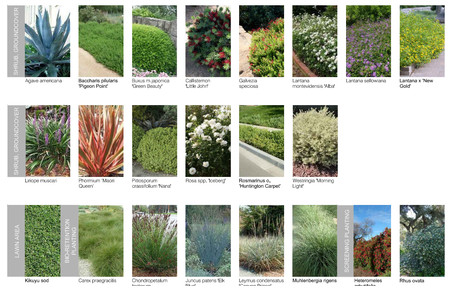
DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-314	SHEET 54 OF 89	
APPROVED BY :	RM/JM	DATE :			

MATCH LINE - SEE SHEET L-314



MATCH LINE - SEE SHEET L-310

MATCH LINE - SEE SHEET L-316



SHRUB LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
AA	Agave americana	Century Plan	15 Gallon	96" O.C.	low	
	Baccharis pilularis 'Pigeon Point'	Pigeon Point Coyote brush	5 Gallon	6' O.C.	low	
BM	Buxus m.japonica 'Green Beauty'	Green Beauty Boxwood	5 Gallon	24" O.C.	moderate	
C	Callistemon 'Little John'	Dwarf Bottlebrush	5 Gallon	36" O.C.	low	
G	Galvezia speciosa	Island Snapdragon	5 Gallon	spaced as shown	very low	
	Lantana montevidensis 'Alba'	White Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
	Lantana sellowiana	Purple Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
LN	Lantana 'New Gold'	New Gold Lantana	5 Gallon	36" O.C.	low	18" from hardscape or curb
+	Liriope muscari	Big Blue Lilyturf	1 Gallon	16" O.C.	moderate	
PM	Phormium 'Maori Queen'	Maori Queen New Zealand Flax	5 Gallon	42" O.C.	moderate	
PN	Pittosporum crassifolium 'Nana'	Dwarf Karo	5 Gallon	30" O.C.	moderate	
R	Rosa spp. 'Iceberg'	White Iceberg Shrub Rose	5 Gallon	36" O.C.	moderate	
	Rosmarinus officinalis 'Huntington Carpet'	Huntington Carpet Rosemary	1 Gallon	36" O.C.	low	36" from hardscape or curb
W	Westringia 'Morning Light'	Morning Light Coast Rosemary	5 Gallon	30" O.C.	low	

TURF LEGEND

Symbol	Genus Species Name	Common Name	Method Installed
	Pennisetum clandestinum	Kikuyu Grass	Contractor to install Hydrostolized Turf

Turf alternative #1 (pending owner approval): In lieu of Kikuyu, provide and install Hybrid Bermuda "Bandera" sod in the ballfield, including the outfield and turf area beyond the outfield up to the nearest mow strip or other paved perimeter of the turf area adjoining the ballfield. At all other remaining turf areas, provide and install West Coaster fescue blend in sod type. Both Hybrid Bermuda "Bandera" sod and "West Coaster" sod are to be purchased/provided from West Coast Turf. No alternatives will be accepted.

BIO-RETENTION PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
	Grass Mix: Carex praegracilis Chondropetalum tectorum Juncus patens 'Elk Blue'	Grass Mix: California Field Sedge Small Cape Rush Elk Blue California Rush	1 Gallon 5 Gallon 1 Gallon	12" O.C. 24" O.C. 12" O.C.	moderate low low	
LM	Leymus condensatus 'Canyon Prince'	Canyon Prince Wild Rye	5 Gallon	30" O.C.	low	
MR	Muhlenbergia rigens	Deer Grass	5 Gallon	36" O.C.	low	

SCREENING PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setback
HA	Heteromeles arbutifolia	Toyon	5 Gallon	spaced as shown	very low	
RO	Rhus ovata	Sugar Bush	5 Gallon	spaced as shown	very low	

NORTH

0 16' 32' 48'

SCALE: 1/16" = 1'-0"

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Glendale, California 91201-1421
Ph:(310) 738-2088
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NO.	REVISION DESCRIPTION	BY:

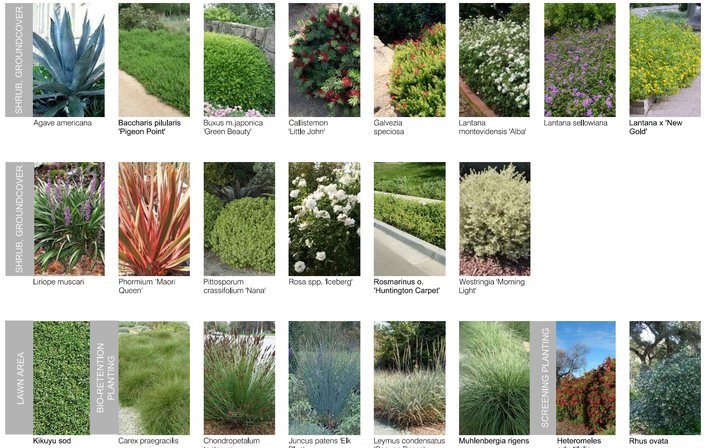
BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER No.1947
Signature
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA
FOR REGULATORY AGENCY REVIEW ONLY
NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
SHRUB PLANTING PLAN

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-315	SHEET 55 OF 89	
APPROVED BY :	RM/JM	DATE :			



SHRUB LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
AA	Agave americana	Century Plan	15 Gallon	96" O.C.	low	
	Baccharis pilularis 'Pigeon Point'	Pigeon Point Coyote brush	5 Gallon	6' O.C.	low	
BG	Buxus m.japonica 'Green Beauty'	Green Beauty Boxwood	5 Gallon	24" O.C.	moderate	
C	Callistemon 'Little John'	Dwarf Bottlebrush	5 Gallon	36" O.C.	low	
G	Galvezia speciosa	Island Snapdragon	5 Gallon	spaced as shown	very low	
	Lantana montevidensis 'Alba'	White Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
	Lantana sellowiana	Purple Trailing Lantana	5 Gallon	60" O.C.	low	30" from hardscape or curb
LN	Lantana 'New Gold'	New Gold Lantana	5 Gallon	36" O.C.	low	18" from hardscape or curb
*	Liriope muscari	Big Blue Lilyturf	1 Gallon	16" O.C.	moderate	
PM	Phormium 'Maori Queen'	Maori Queen New Zealand Flax	5 Gallon	42" O.C.	moderate	
PN	Pittosporum crassifolium 'Nana'	Dwarf Karo	5 Gallon	30" O.C.	moderate	
R	Rosa spp. 'Iceberg'	White Iceberg Shrub Rose	5 Gallon	36" O.C.	moderate	
	Rosmarinus officinalis 'Huntington Carpet'	Huntington Carpet Rosemary	1 Gallon	36" O.C.	low	36" from hardscape or curb
W	Westringia 'Morning Light'	Morning Light Coast Rosemary	5 Gallon	30" O.C.	low	

TURF LEGEND

Symbol	Genus Species Name	Common Name	Method Installed
	Pennisetum clandestinum	Kikuyu Grass	Contractor to install Hydrostolized Turf

Turf alternative #1 (pending owner approval): In lieu of Kikuyu, provide and install Hybrid Bermuda "Bandera" sod in the ballfield, including the outfield and turf area beyond the outfield up to the nearest mow strip or other paved perimeter of the turf area adjoining the ballfield. At all other remaining turf areas, provide and install West Coaster fescue blend in sod type. Both Hybrid Bermuda "Bandera" sod and "West Coaster" sod are to be purchased/provided from West Coast Turf. No alternatives will be accepted.

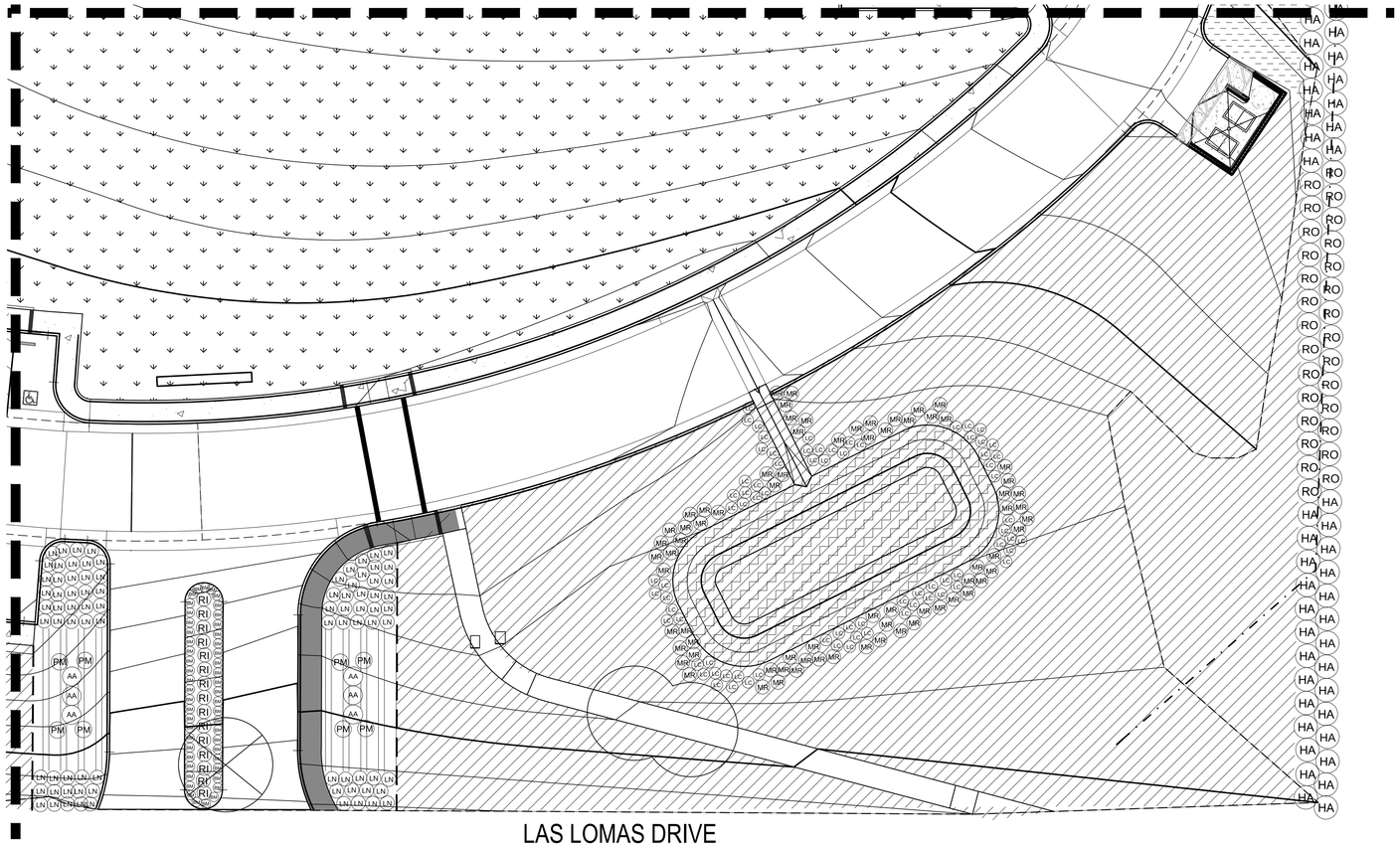
BIO-RETENTION PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setbacks
	Grass Mix: Carex praegracilis Chondropetalum tectorum Juncus patens 'Elk Blue'	Grass Mix: California Field Sedge Small Cape Rush Elk Blue California Rush	1 Gallon 5 Gallon 1 Gallon	12" O.C. 24" O.C. 12" O.C.	moderate low low	
LC	Leymus condensatus 'Canyon Prince'	Canyon Prince Wild Rye	5 Gallon	30" O.C.	low	
MR	Muhlenbergia rigens	Deer Grass	5 Gallon	36" O.C.	low	

SCREENING PLANTING LEGEND

Symbol	Genus Species Name	Common Name	Container Size	Spacing	Plant Factor	Setback
HA	Heteromeles arbutifolia	Toyon	5 Gallon	spaced as shown	very low	
RO	Rhus ovata	Sugar Bush	5 Gallon	spaced as shown	very low	

MATCH LINE - SEE SHEET L-315



MATCH LINE - SEE SHEET L-309

LAS LOMAS DRIVE

NORTH

0 16' 32' 48'

SCALE: 1/16" = 1'-0"

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

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(NOT FOR CONSTRUCTION)

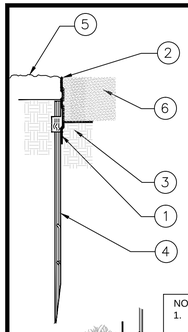
TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
JEREMIAH W. MAYER No.5637
Signature 12-31-24
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA

LA HABRA LANDFILL
VISTA GRANDE PARK

SHRUB PLANTING PLAN

DESIGNED BY : TMA			
DRAWN BY : TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY : JM	DATE :	L-316	SHEET 56 OF 89
APPROVED BY : RM/JM	DATE :		



SIZE:
3/16" X 5½" (4.8MM X 140MM), 0.116" (2.95MM) THICK
w/ 0.187" (4.75MM) EXPOSED TOP

FINISH LEGEND
(MF) MILL FINISH-NATURAL ALUMINUM

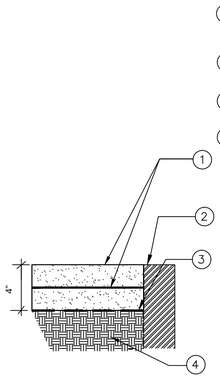
1. PERMALOC CLEANLINE ALUMINUM EDGING
2. TOP OF EDGING TO BE FLUSH WITH CONCRETE CURB
3. 95% COMPACTED SOIL ADJACENT TO EDGING TO AVOID SETTLING
4. 12" ALUMINUM STAKES TO LOCK INTO PREFORMED LOOPS ON THE EDGING
5. 3" LAYER MULCH BETWEEN SHRUBS / GROUNDCOVER - SEE PLAN
6. 2" DEEP LAYER OF STABILIZED DECOMPOSED GRANITE - FLUSH WITH EDGE- SEE PLANS/SPECS

ISOMETRIC VIEW

NOTES:
1. INSTALL PER MANUFACTURER'S "INSTALLATION GUIDELINES"
2. 8'-0" SECTIONS TO INCLUDE (3) 12" ALUMINUM STAKES.
3. 16'-0" SECTIONS TO INCLUDE (5) 12" ALUMINUM STAKES.
4. CORNERS - CUT BASE EDGING UP HALFWAY AND FORM A CONTINUOUS CORNER.
5. PERMALOC CLEANLINE AS MANUFACTURED BY PERMALOC CORPORATION, HOLLAND MI. (800) 356-9660, (616) 399-9600
6. CONTRACTOR'S NOTE: FOR PRODUCT AND PURCHASING INFORMATION VISIT:WWW.PERMALOC.COM

NOT TO SCALE

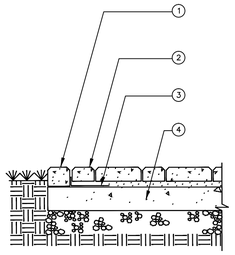
ALUMINUM EDGING | 5



1. STABILIZED DECOMPOSED GRANITE PER PLAN LAY DOWN IN TWO -2" LIFTS (SEE SPECIFICATIONS)
2. CONCRETE MOW CURB, PER PLAN (FLUSH WITH DECOMPOSED GRANITE)
3. FILTER FABRIC MIRAFI 140N OR APPROVED EQUAL
4. UNDISTURBED NATIVE GRADE OR SOILS WITH A MINIMUM RELATIVE COMPACTION OF 90% PER GEOTECHNICAL REPORT

NOT TO SCALE

STABILIZED DECOMPOSED GRANITE | 4

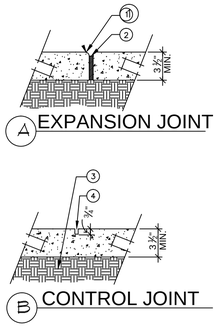


1. FASTENED TO CONCRETE SLAB W/ POLYMER ADHESIVE
2. CONCRETE PAVERS - FILL INSIDE BORDER PAVERS
3. GEOTEXTILE - 12" WIDE - TURN UP AGAINST BORDER PAVERS
4. CONCRETE SLAB 4" MIN. THICKNESS

NOTE:
CONCRETE SLAB SHOULD BE FREE OF CRACKS AND HEAVING. COVER CRACKS WITH GEOTEXTILE.

NOT TO SCALE

PRE CAST PAVERS | 3

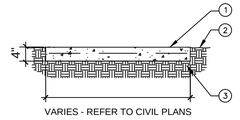


1. 1/2" RADIUS
2. 3"x1/2" POLYFELT EXPANSION JOINT (TYPICAL). TOP WITH 2 PART SELF-LEVELING SEALER.
3. NATIVE SUBGRADE OR CERTIFIED COMPACTED FILL
4. SAW CUT CONTROL JOINT

NOTE
REFER TO STRUCTURAL SOIL REPORT FOR ALL SECTIONS, SUB-BASE AND REINFORCING.

NOT TO SCALE

CONCRETE PAVING JOINTS | 2

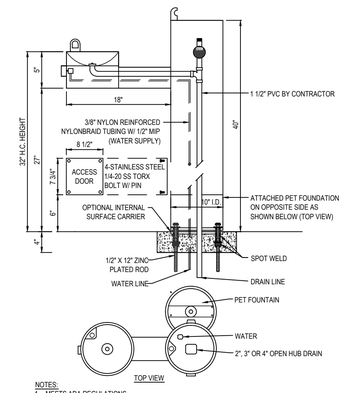


1. CONCRETE PAVING -STRUCTURAL DESIGN PER STRUCTURAL PLANS
2. FINISH SURFACE OF CONCRETE PAVING SHALL BE: FLUSH WITH DECOMPOSED GRANITE, 1" ABOVE FINISH GRADE
3. COMPACTED SUBGRADE PER CIVIL PLANS

NOTES:
1. CONCRETE SHALL BE NATURAL GRAY COLOR & MEDIUM BROOM FINISH
2. JOINTS SHALL BE PER DETAIL 2 ON THIS SHEET.

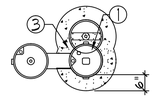
NOT TO SCALE

CONCRETE PAVING | 1

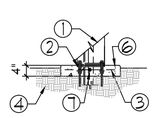


NOTES:
1. MEETS ADA REGULATIONS.
2. OPTIONAL STAINLESS STEEL SURFACE CARRIER RECOMMENDED.
3. SHOWN WITH OPTIONAL 10 STAINLESS STEEL SURFACE CARRIER, ATTACHED PET FOUNTAIN.
4. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

1. DRINKING FOUNTAIN
2. SURFACE MOUNT - INSTALL PER MANUFACTURE'S SPECIFICATIONS
3. C.I.P. CONCRETE FOOTING
4. COMPACTED SUBGRADE
5. FINISH GRADE
6. ½" RAD. TOOLED OUTER EDGE - TYP.
7. #3 REBAR @ 10" O.C.



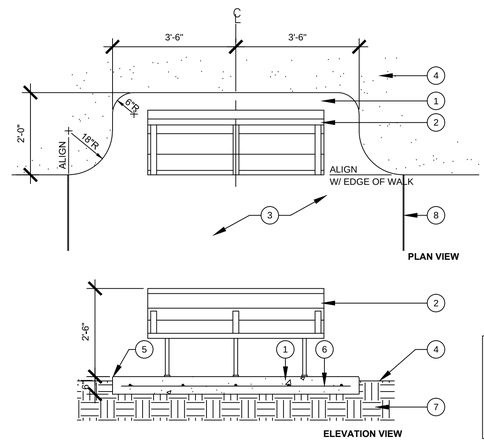
CONCRETE PAD PLAN



CONCRETE PAD ELEVATION

NOT TO SCALE

DRINKING FOUNTAIN W/ PET FOUNTAIN | 8

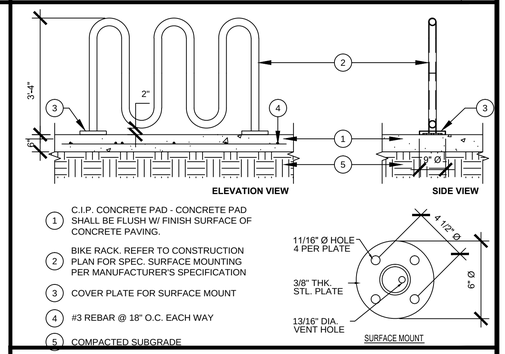


1. C.I.P. CONCRETE PAD - CONCRETE PAD SHALL BE FLUSH W/ FINISH SURFACE OF ADJACENT CONCRETE PAVING, COLOR AND FINISH TO MATCH.
2. BENCH W/ ARM RESTS AT BOTH ENDS AND MIDDLE (3 TOTAL), ALIGN W/ CENTERLINE OF CONCRETE PAD. REFER TO CONSTRUCTION PLAN FOR SPEC. MOUNTING PER MANUFACTURER'S SPECIFICATION
3. CONCRETE PAVING. REFER TO CONSTRUCTION PLAN FOR COLOR AND FINISH.
4. ADJACENT PLANTING AREA, 1 1/2" BELOW FINISH SURFACE @ TURF AREAS AND 2" IN PLANTING AREAS
5. ½" RADIUS TOOLED OUTER EDGE - TYPICAL
6. #3 REBAR @ 18" O.C. EACH WAY
7. COMPACTED SUBGRADE
8. EXPANSION JOINT

NOTE:
1. EXPANSION JOINTS SHALL BE LOCATED AS SHOWN ON THE CONSTRUCTION PLAN
2. FINISH SURFACE SHALL BE OF CONCRETE PAD SHALL BE TOPCAST RETARDANT FINISH, NATURAL CONCRETE COLOR & SHALL RECEIVE A 1/2% MIN.- 2% MAX. GRADIENT TO DRAIN.
3. FINAL ORIENTATION AND LOCATION OF BENCH SHALL BE REVIEWED & APPROVED PRIOR TO CONSTRUCTION.

NOT TO SCALE

BENCH W/ CONCRETE PAD | 7

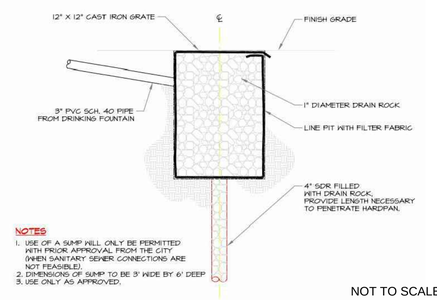


1. C.I.P. CONCRETE PAD - CONCRETE PAD SHALL BE FLUSH W/ FINISH SURFACE OF CONCRETE PAVING.
2. BIKE RACK. REFER TO CONSTRUCTION PLAN FOR SPEC. SURFACE MOUNTING PER MANUFACTURER'S SPECIFICATION
3. COVER PLATE FOR SURFACE MOUNT
4. #3 REBAR @ 18" O.C. EACH WAY
5. COMPACTED SUBGRADE

NOTE:
1. EXPANSION JOINTS SHALL BE LOCATED AS SHOWN ON THE CONSTRUCTION PLAN
2. FINISH SURFACE SHALL BE OF CONCRETE PAD SHALL BE TOPCAST RETARDANT FINISH, NATURAL CONCRETE COLOR & SHALL RECEIVE A 1/2% MIN.- 2% MAX. GRADIENT TO DRAIN.
3. FINAL LOCATION OF BIKE RACK SHALL BE REVIEWED & APPROVED PRIOR TO CONSTRUCTION.

NOT TO SCALE

BILE RACK W/ CONCRETE PAD | 6



NOTES
1. USE OF A SUMP WILL ONLY BE PERMITTED WITH PRIOR APPROVAL FROM THE CITY (WHEN SANITARY SEWER CONNECTIONS ARE NOT FEASIBLE).
2. DIMENSIONS OF SUMP TO BE 3' WIDE BY 6' DEEP
3. USE ONLY AS APPROVED.

NOT TO SCALE

DRINKING FOUNTAIN SUMP | 9

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

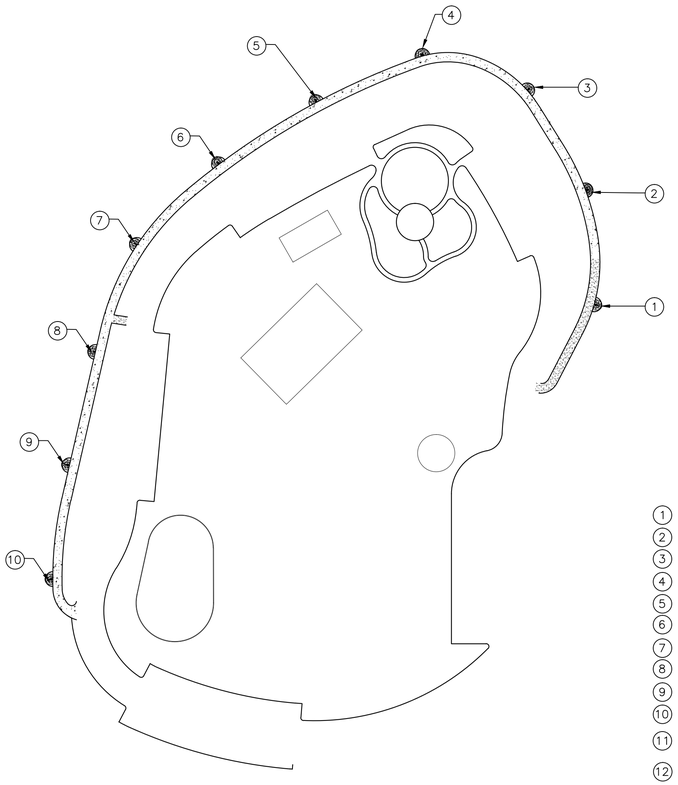
TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT — JERARD W. MAYER — No. 5437 — Signature 12-31-24 — Renewal Date — 06-16-23 — Date — STATE OF CALIFORNIA

LA HABRA LANDFILL
VISTA GRANDE PARK

CONSTRUCTION DETAILS

DESIGNED BY : TMA			
DRAWN BY : TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY : JM	DATE :	L-401	SHEET 57 OF 89
APPROVED BY : RM/JM	DATE :		



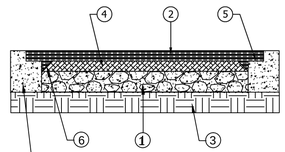


1. CHEST PRESS - MODEL #: UBX-246
2. SQUAT - MODEL #: UBX-217
3. ROWER - MODEL #: UBX-290
4. LEG PRESS - MODEL #: UBX-215
5. AB TONER - MODEL #: UBX-211
6. TRICEPS PRESS - MODEL #: UBX-244
7. SHOULDER PRESS - MODEL #: UBX-248
8. STEPPER - MODEL #: UBX-292
9. VERTICAL PRESS - MODEL#: UBX-247
10. LEG EXTENSION & CURL - MODEL #: UBX-298
11. CONCRETE MOW CURB - SEE DETAIL #3 ON THIS SHEET
12. DECOMPOSED GRANITE - SEE DETAIL #4 ON SHEET L-401

EXERCISE EQUIPMENT BY GREENFIELDS - HTTP://GFOUTDOORFITNESS.COM/
EQUIPMENT TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

NOT TO SCALE

EXERCISE STATION | 4



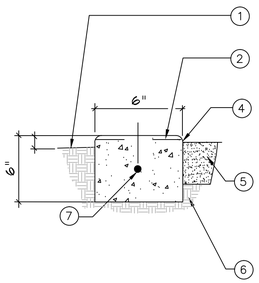
3 L-402 6" CONCRETE MOW STRIP

KEYNOTES	
1	SUB-BASE OPTIONS PER ADA GUIDELINES: (1) COMPACTED AGGREGATE - 4" OF 3/4" MINUS IRREGULAR STONE WITH FINES COMPACTED TO 95% IN 2" WATERED LIFTS.
2	WEAR COURSE - 1/2" INCH MINIMUM THICKNESS
3	EXISTING SOLID COMPACTED DIRT
4	SBR CUSHION LAYER (DEPTH VARIES BY CRITICAL FALL HEIGHT REQUIREMENTS AND PRODUCT SOLD)
5	CONCRETE BORDERS WITH 1/2" DEEP, 2" WIDE INSTALLATION KEYWAY
6	1-1/2" BEVEL

Robertson Recreational Surfaces
a PLAYCORE Company

NOT TO SCALE

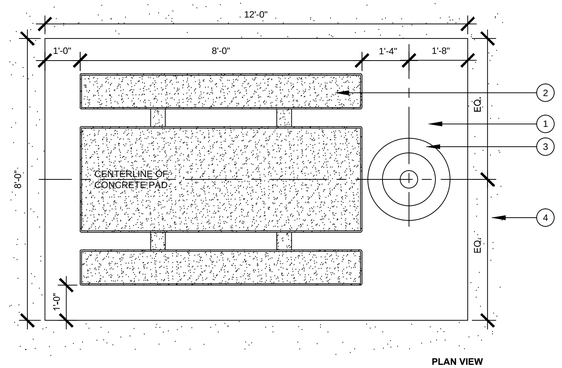
P.I.P. RUBBER SURFACE | 2



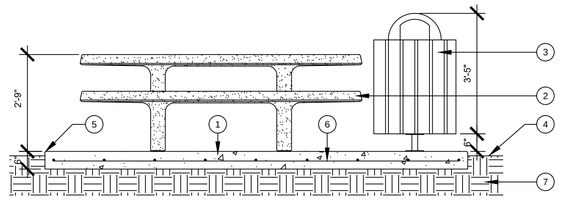
1. 1" IN TURF AND 2" IN SHRUB / GROUNDCOVER AREA
2. CONSTRUCT 1/2" DEEP SCORE LINE ACROSS MOW STRIP AT 4' O.C.
4. NATURAL COLOR CONCRETE MOWSTRIP WITH MEDIUM BROOM FINISH & 1/2" RADIUS AT EXPOSED EDGES ONLY. PROVIDE SAWCUTS 8' O.C.
5. 4" THICK STABILIZED D.G. SHALL BE FLUSH WITH FINISH SURFACE OF CONCRETE MOW STRIP. SEE DETAIL 4 ON THIS SHEET L-4.1 FOR MORE INFORMATION.
6. UNDISTURBED NATIVE GRADE OR SOILS BELOW CONCRETE FLATWORK WITH A MINIMUM RELATIVE COMPACTION OF 90% PER GEOTECHNICAL REPORT
7. #4 HORIZ. REBAR, CONTINUOUS, LOCATED IN CENTER

NOT TO SCALE

6" CONCRETE MOW STRIP | 3



PLAN VIEW



ELEVATION VIEW

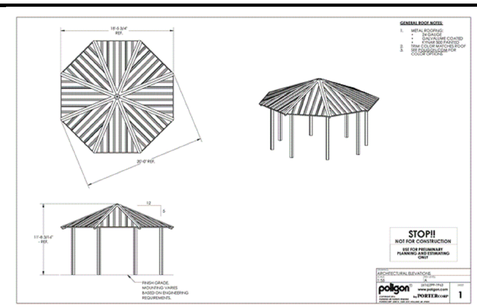
1. C.I.P. CONCRETE PAD - CONCRETE PAD SHALL BE FLUSH W/ FINISH SURFACE OF ADJACENT CONCRETE MOW STRIP AND DECOMPOSED GRANITE, WHERE OCCURS.
2. CONCRETE PICNIC TABLE, ALIGN W/ CENTERLINE OF CONCRETE PAD. REFER TO CONSTRUCTION PLAN FOR SPEC. MOUNTING PER MANUFACTURER'S SPECIFICATION
3. TRASH RECEPTACLE, ALIGN W/ CENTERLINE OF CONCRETE PAD. REFER TO CONSTRUCTION PLAN FOR SPEC. MOUNTING PER MANUFACTURER'S SPECIFICATION
4. ADJACENT PLANTING AREA, 1 1/2" BELOW FINISH SURFACE @ TURF AREAS AND 2" IN PLANTING AREAS
5. ½" RADIUS TOOLED OUTER EDGE - TYPICAL
6. #3 REBAR @ 18" O.C. EACH WAY
7. COMPACTED SUBGRADE

NOTE:
1. EXPANSION JOINTS SHALL BE LOCATED AS SHOWN ON THE CONSTRUCTION PLAN
2. FINISH SURFACE OF CONCRETE PAD SHALL BE TOPCAST RETARDANT FINISH, NATURAL CONCRETE COLOR & SHALL RECEIVE A 1/2% MIN.- 2% MAX. GRADIENT TO DRAIN.
3. FINAL ORIENTATION OF TABLE & FINAL LOCATION OF TRASH RECEPTACLE SHALL BE REVIEWED & APPROVED PRIOR TO CONSTRUCTION.

NOT TO SCALE

PICNIC TABLE W/ CONCRETE PAD | 1





NOT TO SCALE

POLIGON GAZEBO | 5

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

CITY OF LA HABRA — A CARING COMMUNITY — EST. 1925

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT — JERAMIAH W. MAYER — NO. 5637 — STATE OF CALIFORNIA
Signature 06-16-23
Renewal Date 06-16-23
Date

LA HABRA LANDFILL
VISTA GRANDE PARK
CONSTRUCTION DETAILS

DESIGNED BY : TMA			
DRAWN BY : TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY : JM	DATE :	L-402	SHEET 58 OF 89
APPROVED BY : RM/JM	DATE :		



STATION 3



STATION 2



STATION 1



STATION 6



STATION 5



STATION 4



STATION 8



STATION 7



STATION 9



STATION 10

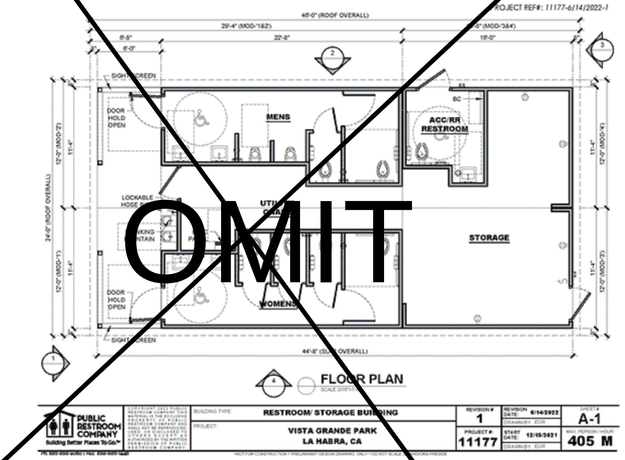
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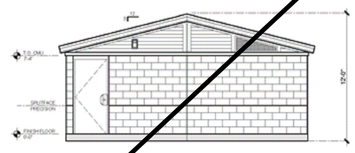
EXERCISE EQUIPMENTS | 2

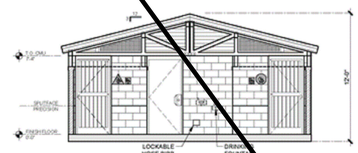
NOTE:
CONTACT PUBLIC STORAGE COMPANY FOR STRUCTURAL ENGINEERING INFORMATION INCLUDING FOUNDATION.

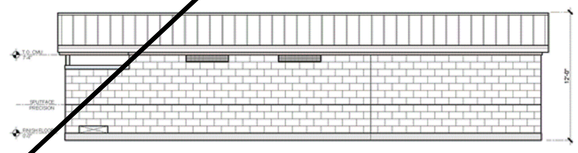


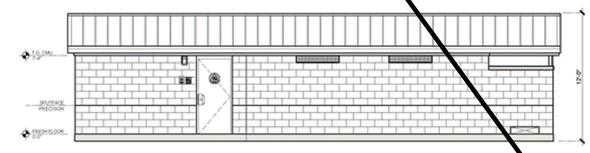
OMIT











A-3

A-2

NOT TO SCALE

RESTROOM | 1

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

A CARING COMMUNITY EST. 1925 CITY OF LA HABRA

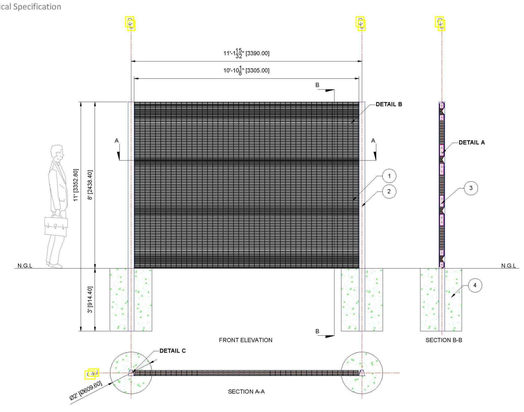
TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT RICHARD W. MAYER No. 2617 STATE OF CALIFORNIA

LA HABRA LANDFILL
VISTA GRANDE PARK
CONSTRUCTION DETAILS

DESIGNED BY : TMA			
DRAWN BY : TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY : JM	DATE :	L-403	SHEET 59 OF 89
APPROVED BY : RM/JM	DATE :		

Clearvu - Technical Specification



SPECIFICATION

CLEARVU INVISIBLE WALL PANEL

1	PANEL	CLEARVU MESH PANELS 11'-1 15/32" [3305] WIDE x 8' [2438.4] HIGH GALVANIZED,93mm WIRE WITH APERTURE SIZE (CENTERS) @ 3" [76.2] x 1/2" [12.7]. PANEL FORMATION: PANEL REINFORCED WITH 4 x 1 31/32" [50] DEEP "V" FORMATION HORIZONTAL RECESSED BANDS (RIGIDITY), 2 x 2 61/64" [75] 70° FLANGES ALONG SIDES (INTERNAL FIXTURES) - ANTI-VANDAL, ALLOWING FOR FLUSH POST AND PANEL FINISH. 48 LINE WIRE SECURE CONNECTION, LOCKING RECESS MECHANISM) AND 2 x 30° FLANGES ALONG TOP AND TOE (ARROW)- STRAIGHT EDGES, INTEGRATED ANGLE). COATING: MESH GALVANIZED,THEN MARINE FUSION BOND COATED. (PATENTS AND DESIGN REGISTRATIONS APPLY)
2	POST	COCHRANE TAPER LOCKING POST 3 11/32" [83] x 1 49/64" [43] x 3 11/32" [85], THEN SEALED WITH UV STABILIZED POLYMER CAP. COATING: HOT DIPPED GALVANIZED,THEN MARINE FUSION BOND COATED.
3	CLAMPS	8 X SINGLE BOLT COMB CLAMPS. 8 X DOUBLE BOLT COMB CLAMPS. COATING: GALVANIZED,THEN MARINE FUSION BOND COATED.
4	FOUNDATION	Ø2' [609.6] x 3' [914.4] CONCRETE FOUNDATION

APPROVED BY CLIENT

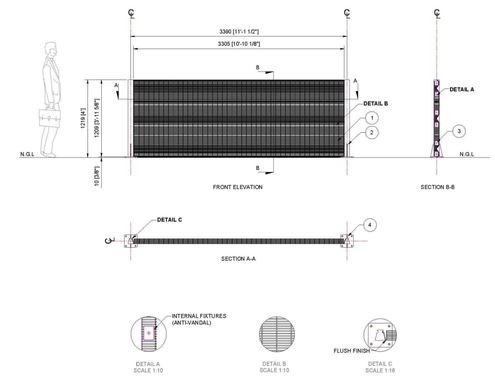
NOTE:
CONTRACTOR SHALL PROVIDE A SHOP DRAWING FOR THE DOUBLE SWING GATE FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT.

NOT TO SCALE

6' FENCE | 2

ISO Registered ISO9001:2008 | www.cochrane.co | service@cochrane.co | +1 305.607.7665 | 1013 14th STREET NW WASHINGTON, DC

Clearvu - Technical Specification



SPECIFICATION

CLEARVU INVISIBLE WALL PANEL

NO#	ITEM	DESCRIPTION
1	PANEL	CLEARVU MESH PANELS 10'-10 ⅛" WIDE x 4' HIGH GALVANIZED 93mm WIRE WITH APERTURE SIZE (CENTERS) @ 3" x 2" PANEL FORMATION: PANEL REINFORCED WITH 3 x 2" DEEP "V" FORMATION HORIZONTAL RECESSED BANDS (RIGIDITY), 2 x 3" 70° FLANGES ALONG SIDES (INTERNAL FIXTURES)- ANTI-VANDAL, ALLOWING FOR FLUSH POST AND PANEL FINISH, 48 LINE WIRE SECURE CONNECTION, LOCKING RECESS MECHANISM) AND 2 x 30° FLANGES ALONG TOP AND TOE (ARROW) - STRAIGHT EDGES, INTEGRATED ANGLE). COATING: MESH GALVANIZED. (PATENTS AND DESIGN REGISTRATIONS APPLY)
2	POST	COCHRANE TAPER LOCKING POST, THEN SEALED WITH UV STABILIZED POLYMER CAP. COATING: HOT DIPPED GALVANIZED.
3	CLAMPS	12 X SINGLE BOLT COMB CLAMPS. COATING: GALVANIZED.
4	BASE PLATE	BASE PLATE, WITH 4 x HOLES TO ACCOMMODATE FIXING, WITH GUSSETS.

APPROVED BY CLIENT

COCHRANE ENGINEERING AND DESIGN						PROJECT NAME: Rose Bowl Stadium		
REVISION SCHEDULE						CHECKED BY: TN	DRAWN BY: EVELOS	DRAWING NAME: 4659-OC-CV-01-01-05-00-A-R00
REV.	REV DESCRIPTION	REV DATE	DRAWN BY	CHECKED BY	APPROVED BY	CHECKED DATE: 2018-02-08	DWG TYPE: CLIENT APPROVAL	SHEET NO: 1 OF 1
						APPROVED BY: SG	SCALE: NTS	DRAWING DISCRIPTION: DETAIL DRAWING OF CLEARVU PANEL
						APPROVED DATE: 2018-02-08	MATERIAL: MILD STEEL	PRINT DATE: N/A
								CURRENT REV.: 0

NOTE:
CONTRACTOR SHALL PROVIDE A SHOP DRAWING FOR THE DOUBLE SWING GATE FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT.

NOT TO SCALE

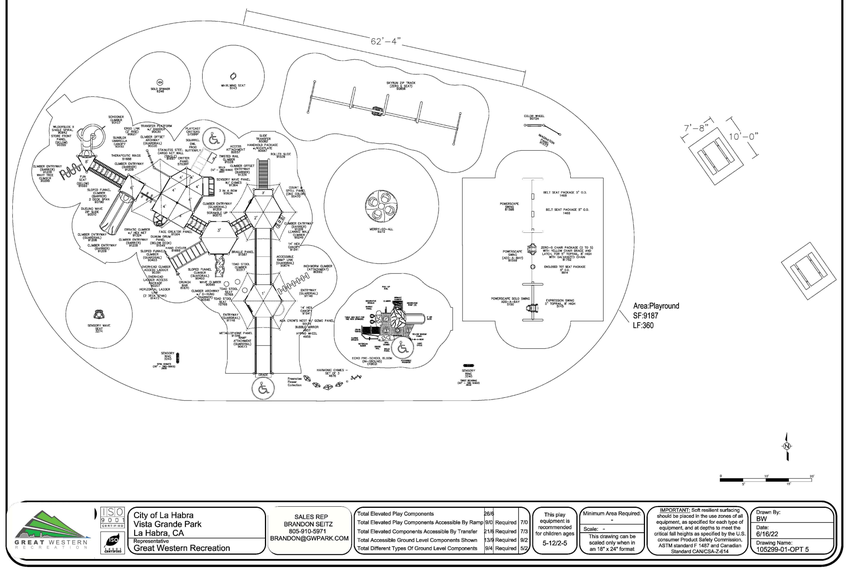
4' FENCE | 1











NOTES:
1. PLAY STRUCTURE / TOT LOT BY GREAT WESTERN RECREATION
   1-805-910-5971 brandon@gwpark.com
   CONTACT NAME: BRANDON SEITZ
2. COLORS OF EQUIPMENT SHALL BE GREEN AND TAN COLORS. INSTALL EQUIPMENT PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS. CONTRACTOR SHALL COORDINATE PLACEMENT OF EQUIPMENT WITH LOCATIONS OF CONCRETE WALK, CURBS AND DRAINS.
3. REFER TO DETAIL '2' ON SHEET L-402 FOR INFORMATION ON PLAYGROUND SURFACE.

NOT TO SCALE

PLAY STRUCTURE | 3

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

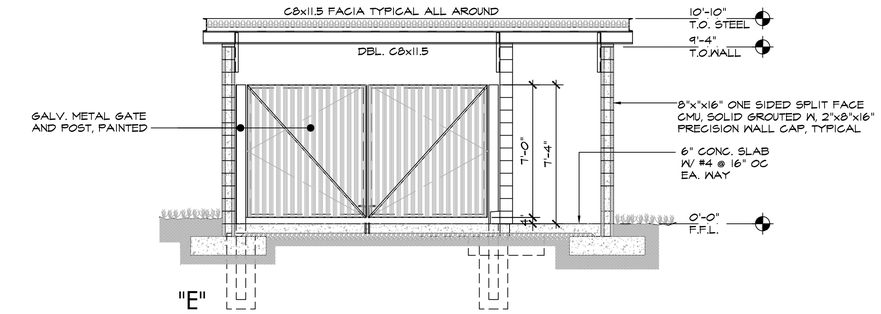
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TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
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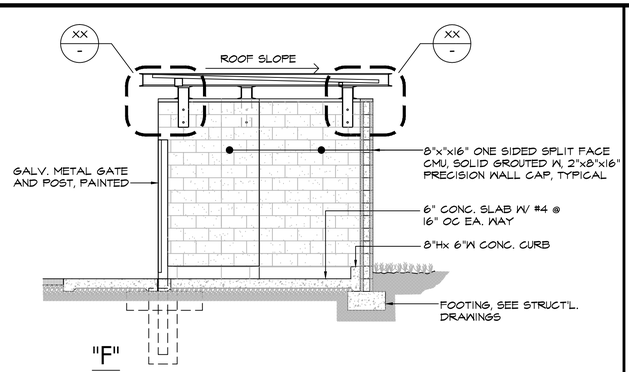
REGISTERED LANDSCAPE ARCHITECT
JERARD W. MAYER No.2437
Signature 12-31-24
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA
FOR INFORMATION ONLY NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
CONSTRUCTION DETAILS

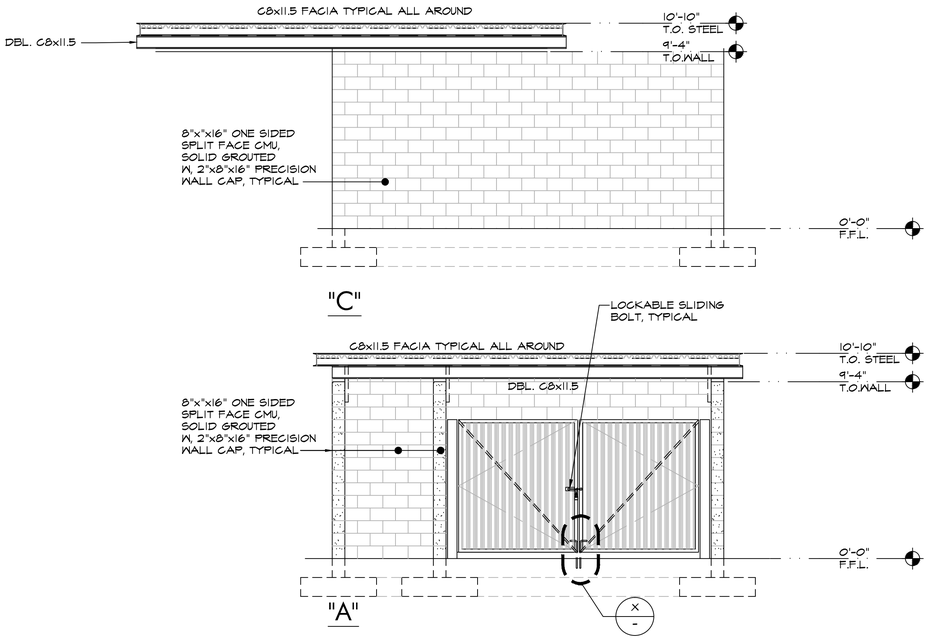
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DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-404	SHEET 60 OF 89	
APPROVED BY :	RM/JM	DATE :			



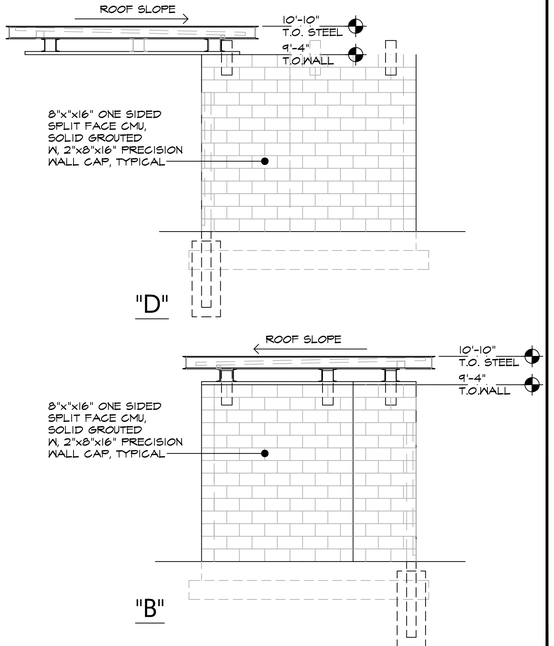
"E"



"F"



"C"

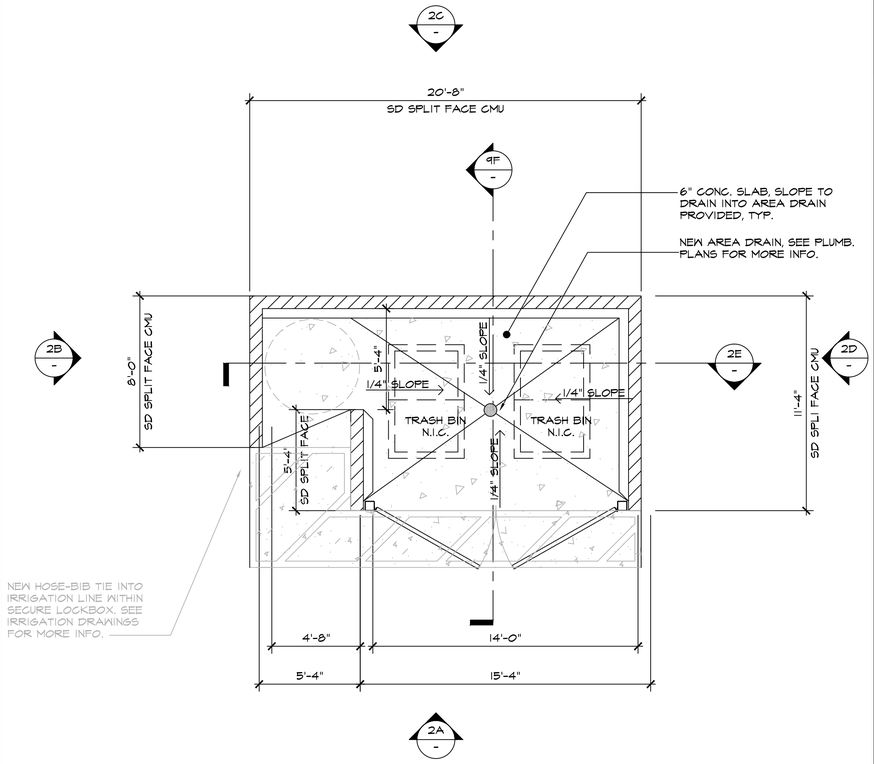


"D"

"A"

"B"

EXTERIOR ELEVATION AND SECTION N.T.S 2



NOTE FOR TRASH ENCLOSURE ONLY:

1. APPLY CLEAR MASONRY SEALER TO ALL EXPOSED CMU, TYPICAL, SEE A204 (CONCRETE MASONRY UNIT)
2. PAINT ALL EXPOSED STEELS WITH DE6364; LEGENDARY GREY BY: DUNN EDWARDS

TRASH ENCLOSURE ENLARGED PLAN N.T.S 1

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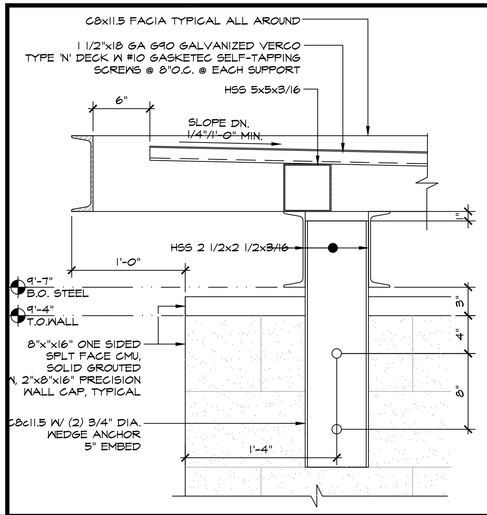
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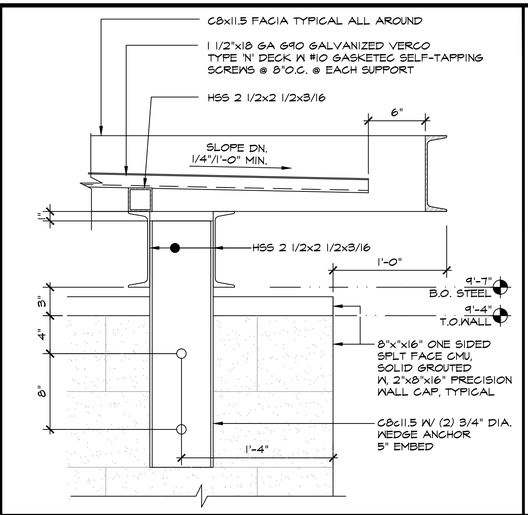
REGISTERED LANDSCAPE ARCHITECT RICHARD W. MAYER No. 4317 STATE OF CALIFORNIA
FOR INFORMATION ONLY

LA HABRA LANDFILL
VISTA GRANDE PARK
CONSTRUCTION DETAILS

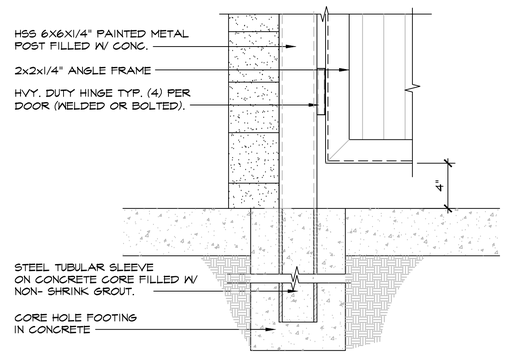
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DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN
CHECKED BY :	JM	DATE :	L-405
APPROVED BY :	RM/JM	DATE :	SHEET 61 OF 89



DETAIL N.T.S. 4

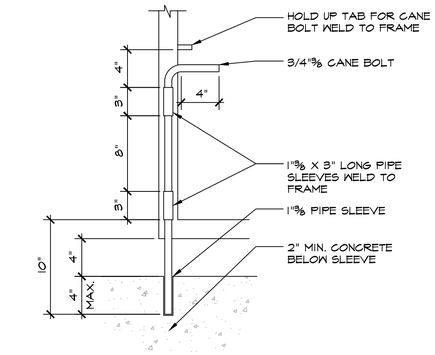


DETAIL N.T.S 3



NOTE:
1. FOR FRAMING, CONNECTIONS, FOOTING AND REINFORCING REFER TO STRUCTURAL DRAWINGS.
2. GRIND SMOOTH ALL WELDS BEFORE APPLYING PAINT.
3. ALL STEEL TO HAVE 1 COAT OF RED OXIDE PRIME WITH 2 COATS OF SEMI-GLOSS LATEX.

TRASH FOOTING POST DETAIL N.T.S. 2



CANE BOLT DETAIL N.T.S 1



1. 4" THICK ORGANIC-LOCK DECOMPOSED GRANITE (D.G.) PATH. LAY DOWN IN 2" LIFTS. COLOR SHALL BE CALIFORNIA GOLD, AVAILABLE FROM GAIL MATERIALS (909) 279-1095 OR APPROVED EQUAL. SEE LANDSCAPE SPECIFICATIONS FOR MORE INFORMATION.
2. DECOMPOSED GRANITE SHALL BE PLACED ON UNDISTURBED NATIVE GRADE OR SOILS WITH A MINIMUM RELATIVE COMPACTION OF 90% PER GEOTECHNICAL REPORT.
3. 6" WIDE CONCRETE MOW STRIP SHALL BE FLUSH WITH FINISH SURFACE OF DECOMPOSED GRANITE. SEE DETAIL 3 ON SHEET L-402 FOR MORE INFORMATION.

D.G. WITH CONCRETE MOW STRIP N.T.S. 8

NOTE:
1. FOR FRAMING, CONNECTIONS, FOOTING AND REINFORCING REFER TO STRUCTURAL DRAWINGS.
2. GRIND SMOOTH ALL WELDS BEFORE APPLYING PAINT.
3. ALL STEEL TO BE 1 COAT OF RED OXIDE PRIME WITH 2 COATS OF SEMI-GLOSS LATEX.

NOTE:
GRIND SMOOTH ALL WELDS BEFORE APPLYING PAINT.

TRASH GATE DETAILS N.T.S. 7

TRASH ENCLOSURE WALL SECTION N.T.S 6

TRASH ENCLOSURE ROOF PLAN N.T.S 5

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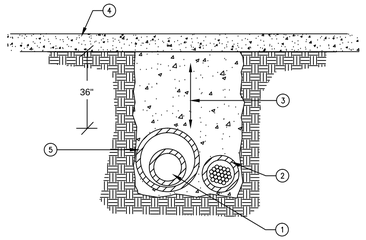
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TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT JASMIND W. MAYER No. 4567 STATE OF CALIFORNIA
Signature 08/31/06 Renewal Date 08/16/23 Date
FOR PLANNING PURPOSES ONLY NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
CONSTRUCTION DETAILS

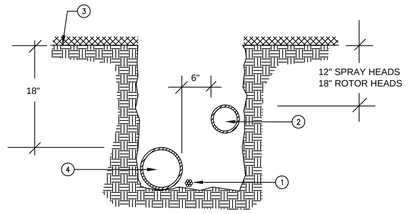
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APPROVED BY :	RM/JM	DATE :	SHEET 62 OF 89



1. MAIN LINE PIPING
2. WIRE SLEEVE AND WIRE
3. 1 SACK SLURRY MIX FILL TO BOTTOM OF PAVEMENT
4. PAVEMENT
5. SLEEVE FOR MAIN LINE PIPING 2 X THE DIAMETER OF THE PIPE PASSING THROUGH

NOT TO SCALE

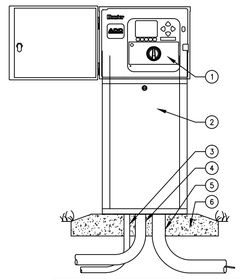
TRENCHING UNDER PAVING | 5



1. CONTROL WIRE BUNDLE
2. SPRINKLER LATERAL
3. FINISH GRADE
4. MAIN LINE PIPING

NOT TO SCALE

PIPE PLACEMENT AND TRENCHING | 4

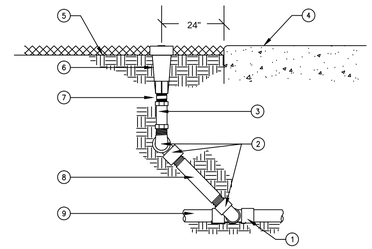


NOTE:
CONTROLLER SHALL BE HARD-WIRED TO GROUNDED 110 VAC POWER SOURCE

1. IRRIGATION CONTROLLER (PRO-C) PER PLAN
2. ACC-PED
3. ELECTRICAL SUPPLY CONDUIT CONNECT TO POWER SOURCE, J-BOX INSIDE CONTROLLER
4. GROUND WIRE CONDUIT GROUND PER ASIC GUIDELINES
5. IRRIGATION CONTROL WIRE IN CONDUIT - SIZE AND TYPE PER LOCAL CODES
6. PEDESTAL BASE: CONCRETE OR PREFABRICATED - POSITIVE DRAINAGE AWAY FROM PEDESTAL

NOT TO SCALE

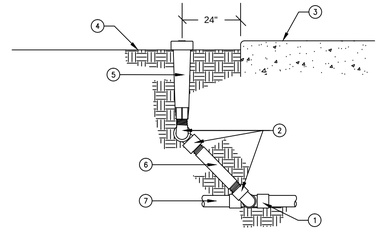
CONTROLLER - METAL PEDESTAL MOUNT | 3



1. PVC TEE OR ELL
2. MARLEX 90° STREET ELLS (3)
3. ADJUSTABLE SPRING CHECK VALVE (KBI OR VALCON)
4. WALK, WALL OR CURB
5. FINISH GRADE
6. 2" POP-UP HEAD
7. SCHEDULE 80 PVC NIPPLE
8. SCHEDULE 80 PVC NIPPLE
9. SPRINKLER LATERAL PIPE

NOT TO SCALE

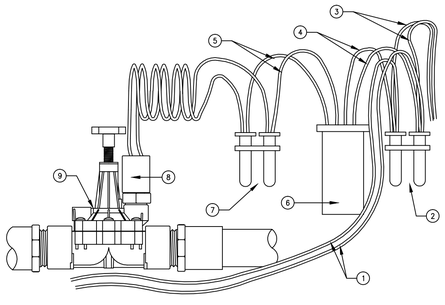
POP-UP BUBBLER HEAD | 2



1. PVC TEE OR ELL
2. MARLEX 90° STREET ELLS (3)
3. WALK, WALL OR CURB
4. FINISH GRADE
5. 6" POP-UP SPRAY HEAD
6. SCHEDULE 80 PVC NIPPLE
7. SPRINKLER LATERAL PIPE

NOT TO SCALE

POP-UP SHRUB HEAD | 1

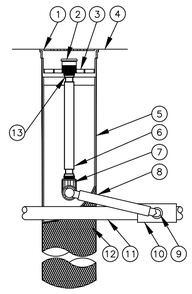


NOTE:
2 WIRE TO BE GROUNDED OUTSIDE THE CONTROLLER AT THE END OF EACH 2 WIRE LINE & EVERY 1,000 FT OR AFTER EVERY 12 DECODER

1. WIRES FROM CONTROLLER (2)
2. HIT DBC-R CONNECTORS
3. WIRES TO NEXT VALVE (2)
4. RED WIRES
5. BLACK WIRES
6. RECIEVER
7. HIT DBC-R CONNECTORS
8. SOLANOID
9. REMOTE CONTROL VALVE

NOT TO SCALE

TYPICAL WIRING FOR REMOTE CONTROL VALVE | 10

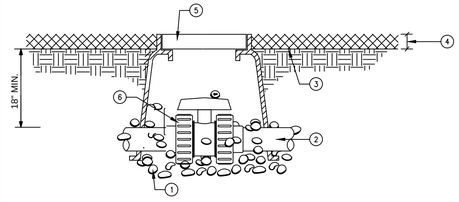


NOTES:
1. INSTALL 2 PER TREE ON OPPOSITE SIDE OF THE ROOT BALL.
2. LOCATE 1" FROM ROOT BALL IN PLANTING BASIN.
3. FOR TREES PLANTED IN TURF AREAS OMIT SURFACE BUBBLERS

1. 4-INCH LOCKING GRATE (INCLUDED)
2. BUBBLER: RAINBIRD .5 GPM
3. ROOT WATERING SYSTEM
4. FINISH GRADE/TOP OF MULCH
5. RZWS SLEEVE
6. /2-INCH POLY SWING PIP1E (INCLUDED)
7. 1/2-INCH SPIRAL BARB ELBOW (INCLUDED)
8. 12-INCH SWING ASSEMBLY (INCLUDED)
9. 1/2-INCH MALE NPT INLET (INCLUDED)
10. PVC SCH 40 TEE OR EL
11. PVC OR POLYETHYLENE LATERAL PIPE
12. 4" WIDE X 36" LONG RIGID BASKET WEAVE CANISTER
13. 1/2-INCH STRAIGHT SPIRAL BARB FITTING

NOT TO SCALE

DEEP WATER TREE WELLS | 9

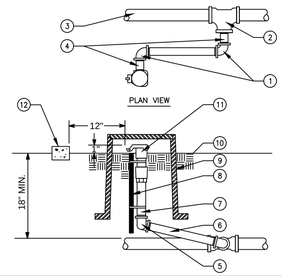


NOTE:
USE 8" CLASS 200 PVC PIPE FOR ANY NECESSARY EXTENSIONS

1. 1 CUBIC FT. PEA GRAVEL
2. MAIN LINE PIPING
3. FINISH GRADE
4. 1" TURF, 2" G.C. AND SHRUBS
5. 10" ROUND PLASTIC VALVE BOX
6. BALL VALVE

NOT TO SCALE

TRUE UNION BALL VALVE | 8

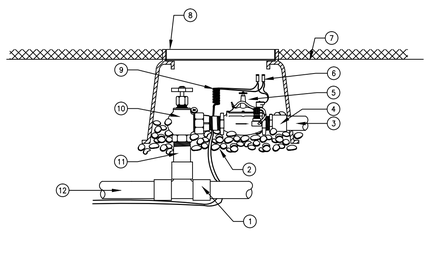


NOTES:
1. NIPPLES AND FITTINGS TO BE SAME SIZE AS VALVE IPT INLET SIZE
2. LOCATE QUICK COUPLING VALVES IN GROUND COVER OR PLANTER AREAS

1. SCH 80 PVC THREADED 90° ELL
2. UPC APPROVED SCH 40 PVC TEE OR ELBOW
3. PVC MAIN LINE
4. 3" LONG SCH 80 PVC THREADED NIPPLE
5. SCH 80 PVC THREADED 90° ELL
6. 10" LONG SCH 80 PVC THREADED NIPPLE
7. 6" LONG SCH 80 PVC THREADED NIPPLE
8. #4 REBAR CLAMPED IN TWO PLACES W/GALV. OR STAINLESS STEEL BANDS
9. 10" DIA. VALVE BOX
10. FINISH GRADE
11. QUICK COUPLING VALVE (SET VALVE & BOX AT FINISH GRADE IN TURF AREAS WHERE APPLICABLE)
12. WALL, WALK, CURB OR HEADER

NOT TO SCALE

QUICK COUPLER VALVE | 7



1. PVC TEE OR ELL
2. 1 CUBIC FT. PEA GRAVEL
3. PIPE TO SYSTEM
4. PVC MALE ADAPTER
5. REMOTE CONTROL VALVE
6. WATERPROOF CONNECTORS
7. FINISH GRADE
8. VALVE BOX-APPLIED ENGINEERING #1324-12
9. 18" OF WIRE COIL AROUND A 1" PIPE
10. CHAMPION 300 MANUAL ANGLE VALVE
11. SCHEDULE 80 PVC TOE NIPPLE
12. MAIN LINE PIPING

NOT TO SCALE

REMOTE CONTROL VALVE | 6

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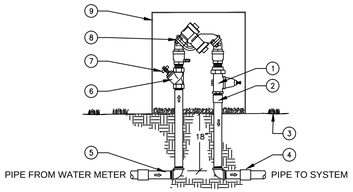
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TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT — JERARD W. MAYER — No. 2437 — STATE OF CALIFORNIA
Signature 12-31-24 — Renewal Date — 06-16-23 Date
FOR INFORMATION ONLY — NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
IRRIGATION DETAILS

DESIGNED BY :	TMA		
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN
CHECKED BY :	JM	DATE :	L-407
APPROVED BY :	RM/JM	DATE :	SHEET 63 OF 89

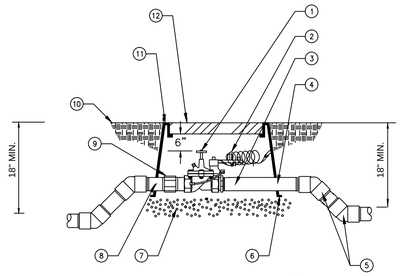


NOTE:
ALL PIPE AND FITTINGS SHALL BE RED BRASS OR COPPER.
IF COPPER IS USED, PIPING SHALL BE TYPE K.

1. PRESSURE REGULATOR VALVE SET AT 65 P.S.I.
2. CXMIP ADAPTER IF COPPER IS USED (TYPICAL)
3. FINISH GRADE
4. SCHEDULE 40 PVC COUPLING LINE SIZE (2)
5. SCHEDULE 80 PVC TOE NIPPLE (2)
6. WYE STRAINER
7. BALL VALVE
8. "N" PATTERN BACKFLOW PREVENTER FEBCO 825YA
9. METAL BACKFLOW ENCLOSURE: STRONG BOX BC-30CR, COLOR: GREEN OR EQUAL. CONTRACTOR SHALL INSTALL PER MFG. SPECIFICATIONS.

NOT TO SCALE

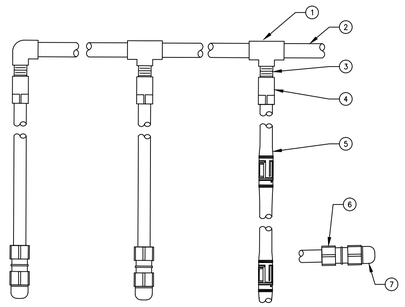
BACK FLOW PREVENTER W/ENCLOSURE 15



1. MASTER CONTROL VALVE WITH FLOW CONTROL AND MANUAL BLEED
2. VALVE CONTROL WIRE - USE PEN-TITE CONNECTORS AND 36" OF EXCESS OF WIRE IN A 1" DIAMETER COIL
3. SCH 80 PVC THREAD/NIPPLE
4. SCH 80 PVC NIPPLE LENGTH AS REQUIRED
5. MAIN LINE WITH SCH 80 PVC 45° ELBOWS
6. 2"x4" NOM. RECYCLED PLASTIC LUMBER
7. PEA GRAVEL - 4" DEEP BELOW VALVE (NO SOIL IN VALVE BOX)
8. SCHEDULE 80 PVC THREADED FITTINGS (AS REQUIRED)
9. SCH.80 PVC UNION
10. FINISH GRADE
11. RECTANGULAR PLASTIC VALVE BOX WITH BOLT DOWN LID. ONE VALVE PER BOX, NO EXCEPTIONS. TOP DIMENSION: 11 3/4" x 17" (12" DEEP)
12. ROUTE OR BRAND MV INTO LID

NOT TO SCALE

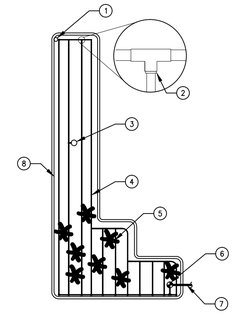
MASTER VALVE 14



1. PVC SCH 40 TEE OR ELL
2. PVC LATERAL PIPE
3. RAIN BIRD EASY FIT COMPRESSION ADAPTER
4. EASY FIT COMPRESSION COUPLING: RAIN BIRD MDCFCOUP
5. LANDSCAPE DRIPLINE TUBING: RAIN BIRD #XFD-09-12 4" FROM EDGE OF CURB/PLANTER
6. EASY FIT COMPRESSION COUPLING: RAIN BIRD MDCFCOUP
7. EASY FIT COMPRESSION FLUSH CAP: RAIN BIRD MDCFCAP

NOT TO SCALE

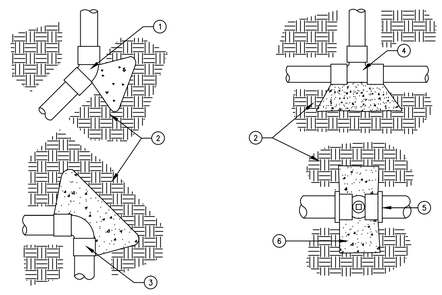
DRIP LINE LATERALS 13



1. FLUSH CAP RAINBIRD #MDCFCAP/COMP FTTG MDCFCOUP
2. COMPRESSION ADAPTER: RAINBIRD 600-CF-1
3. AIR/VACUUM RELIEF VALVE: INSTALL AT HIGH POINT
4. LANDSCAPE DRIPLINE TUBING RAINBIRD#XFD-09-12
5. DRIP LINE ON BOTH SIDE OF SHRUB(TYPICAL)
6. CONTROL ZONE VALVE
7. PRESSURE SUPPLY LINE
8. SUPPLY HEADER SCH.40 PVC WITH RAINBIRD # 600-CF-1 COMPRESSION FTTGS 4" AWAY FROM CURB

NOT TO SCALE

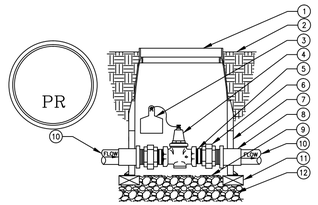
TYPICAL LAYOUT OF DRIP IRRIGATION 12



1. 45° ELL
2. UNDISTURBED EARTH
3. 90° ELL
4. TEE
5. GATE VALVE
6. CONCRETE (TYPICAL)

NOT TO SCALE

TYPICAL THRUST BLOCKS 11

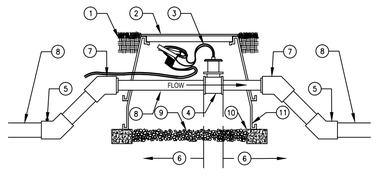


NOTES:
1. ALL VALVE BOXES TO BE PLACED IN SHRUB AREAS WHERE POSSIBLE. SET VALVE BOX 1/2" ABOVE FINISH GRADE IN LAWN AREAS, 1" IN PLANTING AREAS AND 12" MIN FROM EDGE OF HARDSCAPE.
2. CLOSED NIPPLES OR BUSHINGS ARE NOT ALLOWED.
3. USE TEFLON TAPE BETWEEN TWO DISSIMILAR MATERIAL.
4. GALVANIZED NIPPLE SHALL NOT BE USED.

1. VALVE BOX W/BOLT-DOWN COVER. HEAT BRAND "PR" ON VALVE BOX LID IN 2" HIGH CHARACTERS.
2. FINISH GRADE
3. CHRISTY'S I.D.TAG -NUMBERED TO MATCH DRAWINGS AND CHRISTY'S RECYCLED WATER WARNING TAG.
4. PRESSURE REGULATOR VALVE - LINE SIZE
5. BRASS NIPPLE
6. BRASS UNION
7. VALVE BOX EXTENSION (AS REQUIRED)
8. PVC SCH 80 ADAPTOR
9. 1/4"SQ 16GA. GALV. WELDED WIRE MESH
10. IRRIGATION MAINLINE
11. THREE (3) BRICK SUPPORTS
12. 3/4" GRAVEL (12" DEEP)

NOT TO SCALE

PRESSURE REGULATOR 20

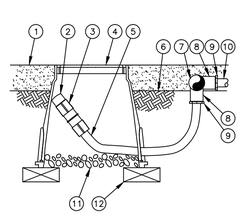


NOTE:
INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

1. FINISH GRADE
2. VALVE BOX PER PLAN
3. CONTROL WIRES WITH 12" MIN. SERVICE COIL AND WATERPROOF WIRE SPLICE CONNECTORS - WIRE COLORS PER SPECIFICATIONS
4. FLOW SENSOR PER SPECIFICATIONS
5. PVC 45 DEGREE ELL (TYP.)
6. MINIMUM 10x PIPE DIAMETER UPSTREAM & MINIMUM 5x PIPE DIAMETER DOWNSTREAM OF STRAIGHT PIPE
7. PVC 45 DEGREE ELL (TYP.) BUSH DOWN TO FLOW METER SIZE AS NECESSARY
8. PVC MAINLINE - LENGTH AS REQUIRED - SEE SPECIFICATIONS FOR TYPE AND DEPTH
9. GRAVEL (1 CU. FT.)
10. CONTINUOUS BRICK SUPPORTS
11. VALVE BOX EXTENSIONS
12. AS REQUIRED

NOT TO SCALE

FLOW SENSOR 19

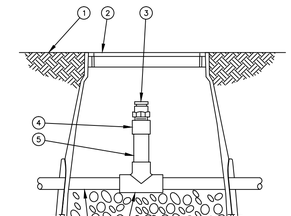


NOTE:
ALLOW A MINIMUM OF 6-INCHES OF DRIPLINE TUBING IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

1. MULCH
2. FLUSH CAP FOR EASY FIT COMPRESSION FITTINGS: POTABLE:RAIN BIRD MDCFCAP
3. EASY FIT COUPLING: RAIN BIRD MDCFCOUP
4. SUBTERRANEAN EMITTER BOX: RAIN BIRD SEB 7XB
5. ½" POLYETHYLENE TUBING: RAIN BIRD XF BLANK TUBING
6. FINISH GRADE
7. PVC EXHAUST HEADER
8. PVC SCH 40 TEE OR EL
9. BARB X MALE FITTING: RAIN BIRD XFF-MA FITTING (TYPICAL)
10. ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE POTABLE: XFCV DRIPLINE
11. 3-INCH MINIMUM DEPTH OF ¾" WASHED GRAVEL
12. BRICK (1 OF 2)

NOT TO SCALE

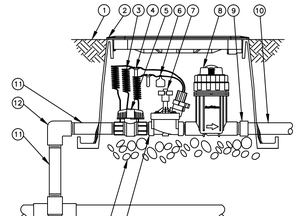
FLUSH CAP 18



1. FINISH GRADE
2. SUBTERRANEAN EMITTER BOX: RAIN BIRD SEB 7XB
3. ½" AIR RELIEF VALVE: RAIN BIRD ARV050 TO BE INSTALLED AT HIGH POINTS IN DRIP ZONE
4. PVC SCH 40 FEMALE ADAPTER
5. PVC SCH 80 RISER
6. BRICK (1 OF 2)
7. PVC HEADER PIPE
8. PVC SCH 40 TEE
9. 3" MINIMUM DEPTH OF ¾" WASHED GRAVEL

NOT TO SCALE

AIR RELIEF VALVE 17



1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER: RAIN BIRD VB-STD
3. 30-INCH LINEAR LENGTH OF WIRE, COILED
4. WATERPROOF CONNECTION: RAIN BIRD DB SERIES
5. 1-INCH BALL VALVE (INCLUDED IN XCZ-PRB-100-COM KIT)
6. ID TAG
7. REMOTE CONTROL VALVE: RAIN BIRD PESB (INCLUCED IN XCZ-PRB-100-COM KIT)
8. PRESSURE REGULATING QUICK CHECK BASKET FILTER: RAIN BIRD PRB-QKCHK-100 (INCLUDED IN XCZ-PRB-100-COM KIT)
9. PVC SCH 40 FEMALE ADAPTOR
10. LATERAL PIPE
11. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
12. PVC SCH 40 ELL
13. PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL
14. PVC SCH 40 TEE OR ELL
15. MAINLINE PIPE
16. 3-INCH MINIMUM DEPTH OF WASHED GRAVEL
17. PVC SCH 80 NIPPLE, CLOSE (INCLUDED IN XCZ-PRB-100-COM KIT)

NOT TO SCALE

DRIP CONTROL VALVE 16

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NO.	REVISION DESCRIPTION	BY:

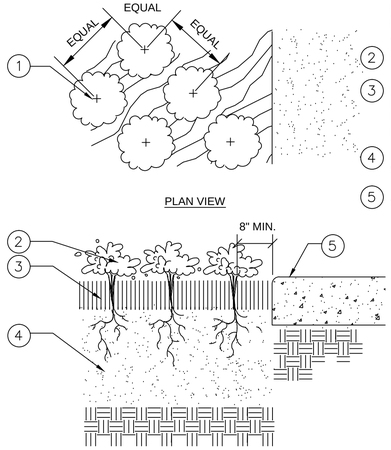
BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER No. 2437
Signature
06-16-23
Date
STATE OF CALIFORNIA
FOR INFORMATION ONLY NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
IRRIGATION DETAILS

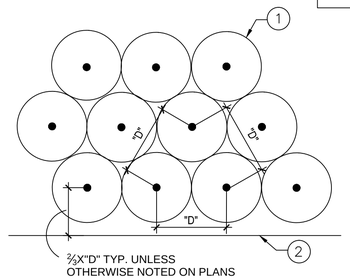
DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-408	SHEET 64 OF 89	
APPROVED BY :	RM/JM	DATE :			



1. LOCATE ALL PLANTS SPACED EQUIDISTANT (EQUAL) FROM EACH OTHER WITH SPACING AS NOTED ON PLAN
2. PLANT SPACING AS PER PLAN
3. INSTALL 3" LAYER OF MULCH PER SPECIFICATIONS BEFORE PLANTING. - KEEP MULCH OFF PLANT STEMS
4. PREPARE BED AS PER SPECIFICATIONS
5. ADJACENT PAVING

NOT TO SCALE

G.C. SPACING/PLANTING | 4



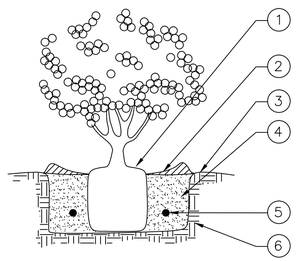
1. PLANT LOCATIONS
2. EDGE OF PLANTING BED, PAVING, WALK, WALL, OR CURB

NOTE:
LOCATE ALL PLANTS SPACED EQUIDISTANT ("D") FROM EACH OTHER AS NOTED ON PLANTING LEGEND.

⅔X"D" TYP. UNLESS OTHERWISE NOTED ON PLANS

NOT TO SCALE

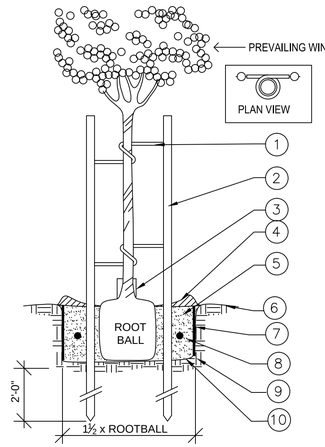
SHRUB SPACING | 3



1. CROWN OF PLANT TO BE 1/2" ABOVE FINISH GRADE
2. DEPRESSED WATERING BASIN W/ 3" LAYER OF MULCH PER SPECIFICATIONS
3. FINISH GRADE
4. BACKFILL MIX: 85% NATIVE SOIL BY VOLUME 15% ORGANIC AMEND BY VOLUME (3-5% ON A DRY WEIGHT BASIS - SEE SPECS.)
5. FERTILIZER TABLETS (SEE SPECS.)
6. NATIVE SOIL

NOT TO SCALE

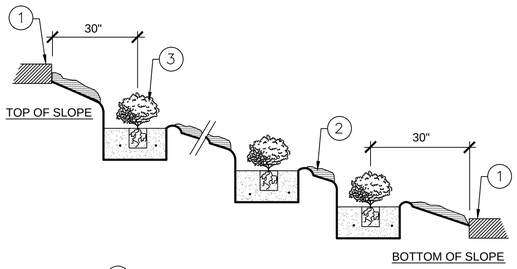
SHRUB PLANTING | 2



1. 'CINCH TIES' (#CT32) BY V.I.T. PRODUCTS INC. NAILED TO STAKES W/ GALV. ROOFING NAILS
2. 2"Ø TREATED LODGEPOLE PINE STAKES
3. 'ARBOR-GARD' (AG 9-4) BY 'DEEP ROOT' - LAWN AREA ONLY
4. DEPRESSED WATERING BASIN FILL W/ 3" LAYER OF MULCH PER SPECIFICATIONS.
5. BACKFILL MIX: 85% NATIVE SOIL BY VOLUME 15% ORGANIC AMEND BY VOLUME (3-5% ON A DRY WEIGHT BASIS - SEE SPECS)
6. FINISH GRADE
7. LINEAR ROOT CONTROL BARRIER (FOR TREES PLANTED WITHIN 6 FEET OF WALKWAY OR OTHER HARDSCAPE.)
8. FERTILIZER TABLETS (SEE SPECS.)
9. NATIVE SOIL
10. PLANTING PIT SHALL BE EXCAVATED PLUMB AND ALL SIDES SCARIFIED

NOT TO SCALE

TREE PLANTING - DOUBLE STAKED | 1



1. WALL, CURB OR PAVING
2. 4-5" ORGANIC MULCH PER SPECIFICATIONS
3. SEE SHRUB SLOPE PLANTING

NOT TO SCALE

GROUND COVER SET BACK | 8

1. NO MULCH IN PLANTING BASIN
2. 4-5" ORGANIC MULCH PER SPECIFICATIONS
3. ROOTBALL
4. FERTILIZER TABLETS PER SPECIFICATIONS
5. SCARIFY BOTTOM OF SIDES OF PLANT PIT

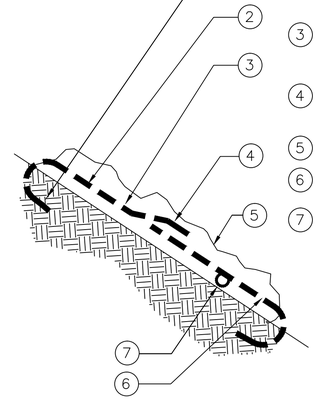
NOT TO SCALE

SHRUB SLOPE PLANTING | 7

1. 'CINCH TIES' (#CT32) BY V.I.T. PRODUCTS INC. (4 PER 15 GAL., 6 PER BOX TREE) NAILED TO STAKES W/ GALV. ROOFING NAILS CROSS TIE BETWEEN STAKE & TREE
2. 2" DIA X 10' LONG LODGE POLE STAKES
3. FERTILIZER TABLETS (SEE SPECS.)
4. EARTH WATERING BASIN (RAKE SMOOTH PRIOR TO SEEDING, IF APPLICABLE)
5. COMPACT BACKFILL MIX: 2/3 NATIVE SOIL 1/3 ORGANIC AMEND. (SEE SPECS.)
6. ROOTBALL, SET CROWN FLUSH W/FINISH GRADE

NOT TO SCALE

TREE SLOPE PLANTING | 6



1. BURY ENDS IN 6" TRENCH USE NO.11 GA. WIRE STAPLES @ 12" O.C.
2. ROLL JUTE MESH DOWN THE SLOPE IN THE DIRECTION OF WATER FLOW.
3. JUTE MESH (ANTI-WASH/ GEO JUTE BY PACIFIC SOIL STABILIZATION (805) 925-7737)
4. OVERLAP ENDS 4" MIN - USE 6" LONG STAPLES @ 3'-0" O.C. OVER DOWN SLOPE ENDS
5. GROUND COVERS
6. ANCHOR WITH 1 STAPLE PER SQ. YARD ALL ALONG THE JUTE MESH
7. JUTE MESH SHALL COVER ANY ON GRADE PIPE

NOTE:
INSTALL ON 3:1 SLOPES OR GREATER
DO NOT STRETCH

NOT TO SCALE

SOIL STABILIZATION FABRIC /JUTE MESH | 5

Underground Service Alert

CALL BEFORE YOU DIG

Call: TOLL FREE
1-800
422-4133

TWO WORKING DAYS BEFORE YOU DIG

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NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

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REGISTERED LANDSCAPE ARCHITECT
JEROME W. MAYER, JR.
Signature
Renewal Date
Date
STATE OF CALIFORNIA
FOR REGULATORY AGENCY REVIEW ONLY NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
PLANTING DETAILS

DESIGNED BY :	TMA		
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN
CHECKED BY :	JM	DATE :	L-409
APPROVED BY :	RM/JM	DATE :	SHEET 65 OF 89

SECTION 01532

TREE PROTECTION

1.01 SUMMARY:

A. Provide all labor, materials, equipment, services, and miscellaneous and incidental work to provide all TREE PROTECTION as indicated on the Drawings and as specified including:

1. Protection and welfare of all existing trees that are to remain, including trimming, cabling, and repair of such trees as necessary.
2. Contractor shall submit tree maintenance plans including temporary irrigation system for Owner's Representative's approval.
3. Completely coordinate all Work.

B. Related Sections:

1. Section 01500 - Construction Facilities and Temporary Controls.
2. Section 02060 - Demolition.

1.02 DEFINITIONS:

A. "Injury" is defined, without limitation, as any bruising, scarring, tearing, or breaking of roots, branches or trunk.

B. "Drip line" is defined as the outermost limits of the tree canopy.

1.03 QUALITY ASSURANCE:

A. General Responsibility: The Contractor shall be directly responsible for protection and welfare of existing trees within the Contract Limits, which are noted to remain. This responsibility shall continue throughout the full construction period until the entire Project is completed and accepted by Owner and through completion of the guarantee period.

B. Qualifications of Workmen: only a certified arborist or certified tree worker shall perform Trimming. Provide at least one person approved by Owner who shall be present at all times during tree protection and trimming operations, who shall be thoroughly familiar with the type of work involved, and who shall direct all protection and trimming work.

1. All tree trimming on this project shall be under the direction of Owner's Representative.
2. Pruning of mature trees shall be considered as part of this project at the discretion of the Landscape Architect and/or Owner's Representative.

C. Reference Standards: Published specifications, standards, tests, or recommended methods of trade, industry or governmental organization apply to work of the Section.

1. International Society of Arboriculture (ISA) "Guide for Establishing Values of Tree and Other Plants," prepared by the Council of Tree and Landscape Appraisers (CTLA).
2. "Cabling, Bracing and Guying Standards for Shade Trees", as published by the National Arborist Association (NAA), 174 RT 101, Bedford, New Hampshire, 03102.
3. International Society of Arboriculture (I.S.A.) - Tree Pruning Guidelines.

1.04 SUBMITTALS:

A. Refer to Section 01300 for procedure.

B. Pruning.

C. Moving Equipment.

D. Guying materials.

E. Fencing materials.

F. Maintenance plan.

1.05 JOB CONDITIONS:

A. Prior to performing any work of the Contract, Contractor shall call for a site meeting with the Owner's Representatives. This meeting shall occur prior to construction of any nature on site. The purpose of the meeting shall be to establish the conditions of all existing trees to be preserved or relocated upon receipt of the site by the Contractor. Failure to call for said meeting implies acceptance by the Contractor of trees to be preserved in their existing condition.

B. Sequencing Schedule: Coordinate and cooperated with other trades to enable 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 in a healthy and flourishing condition of active growth 1 year from the date of Substantial Completion.

B. During the warranty period the Contractor shall be liable for damages to all trees covered by the provisions of this Section and shall pay compensation to Owner.

1. Contractor shall reimburse Owner for loss of trees due to damage or lack of care (See Section 1.13 - Repair Compensation).
2. For trees injured, but not a complete loss to Owner, the Owner's Representative shall determine the amount of penalty.

C. Contractor will not be held responsible for failures due to neglect by Owner, vandalism, etc., during the warranty period. Report such conditions to Owner's Representative.

1.07 TREE PROTECTION FENCING:

A. Tree Protection Fence: Eight (8') foot high cyclone fence, sturdy and capable of acting as a barrier against objects, vehicles, etc., on site during construction process. It shall be constructed and designed so as to allow for relocations as required and shall have gate access to inside for care of tree. It shall be continuously maintained and repaired as necessary. Metal shall be galvanized with posts set in 12" diameter x 24"depth footings with top rails.

B. Install tree protection fencing around trees to be preserved at their dripline or at a minimum of 15' from the tree's trunk. Stands of trees may be fenced as a group. Fencing shall remain until landscape work has commenced, and it shall then be removed as directed by the Owner's Representative.

C. During the course of construction, relocation of the fence may be required to facilitate construction. The Contractor shall do so as directed by the Owner's Representative at no additional expense to the Owner and reset if necessary.

1.08 PROTECTION OF TREES:

A. Water: Provide ample water supply of potable quality and sufficient quantity for all operations required under this section.

B. The existing trees to be preserved presently are in excellent condition. 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.

D. Trees subject to the provisions of this Section, which have been injured, shall be repaired immediately by an approved, certified arborist. Repair may include removal of rough edges and sprung bark and severely injured branches as directed by the Owner's Representative.

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 Owner's Representative.

1. Approval by the Owner's Representative 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 (2") inches in diameter shall be cut without prior written approval by the Owner's Representative.

F. During construction the existing site surface drainage patterns shall not be altered within the area of drip line or in compliance with the development plans.

G. Contractor shall not alter the existing water table within area of drip line during rough grading (as directed by Owner's Representative.)

H. Take necessary measures to maintain healthy living conditions for existing trees to be preserved. Such measures shall include but not be limited to periodic washing of leaves for the removal of dust, etc.

I. Do not permit the following within the 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, dirty water, concrete slurry, 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 written approval by Owner's Representative.
7. Damage to trunk, limbs, or foliage caused by maneuvering vehicles or stacking material or equipment too close to tree.
8. Compaction of the root area by movement of trucks or grading machines; storage equipment, gravel, earth fill, or construction supplies, etc.
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.

J. Excavation Around Trees:

1. Excavation or fill within drip lines of trees shall be done only where absolutely necessary and with the direction of the Owner's Representative.
2. Where trenching for utilities is required within drip lines, it shall be under the supervision and direction of the Owner's Representative. Trenching within a tree's dripline area may require the use of hand tools.
3. Where excavation for new construction is required within drip line of trees, hand excavation may be required to minimize damage to root system. Damaged roots or roots requiring removal that are larger than 2" diameter shall be cleanly cut by a hand saw. Cuts shall be made back to healthy root tissue.
4. Exposed roots and soil areas shall not be allowed to dry out before permanent backfill is placed. Temporary earth cover or organic mulch shall be provided, or roots shall be packed with wet peat moss or four layers of wet, untreated burlap and temporarily supported and protected from damage until permanently covered with backfill. The cover over the roots shall be wetted to the point of runoff daily. When complete, install broken concrete retaining walls as shown on Plan Details wherever the grade around a tree to be saved is higher of lower by 6" from the existing grade. See Planting Plan and Details.
5. Pruning may be required to balance loss to root system caused by damage or cutting of root system. Thinning shall not exceed 30 percent of existing foliage and shall be directed by the Owner's Representative.

1.09 TREE PRUNING:

Pruning: Trees, which require pruning shall be inspected by Owner's Representative and the Contractor before starting work this work. All Pruning shall be in accordance with the standards of the International Society of Arboriculture or as directed by the Owner's Representative. A sample tree shall serve as a guide in the pruning of the remaining trees.

1.10 TREE REMOVAL:

Trees designated for removal shall be removed to a point at least 1' (one foot) or more below subgrade. Refer to Spec. Sect. 02060, Demolition. Trees shall not be felled but cut down in sections and lowered to the ground to minimize damage to other trees and planting and protect against injury to anyone in the vicinity.

1.11 TREE REMOVAL:

A. The Owner's Representative and the Contractor's Arborist will identify limbs and roots, which are to be trimmed.

B. The Owner's Representative shall direct the removal of branches from trees and large shrubs that are to remain if required clearing for new construction.

C. Dead and damaged trees that are determined by the Owner's Representative and arborist to be incapable of restoration to normal growth pattern shall be removed.

D. Cut evenly, using proper tools and skilled workmen, to achieve neat severance with the least possible damage to the tree.

E. In the case of root cuts, apply wet burlap or other protection, approved as noted herein, to prevent drying out, and maintain them in a wet condition as long as necessary for temporary protection.

1.12 IRRIGATION SYSTEM:

A. Protect existing irrigation system from damage. Wherever possible leave water source for watering trees and keep ground around all trees to remain in the area sufficiently moist until the end of project.

1.13 REPAIR COMPENSATION:

A. Damage to existing tree crowns or roots over 2 inches in diameter shall be immediately reported to Owner's Representative in writing, and, at the direction of the Owner's Representative, repaired immediately at the Contractor's expense by an approved, certified arborist.

B. The Owner's Representative shall direct repair of trees damaged by construction operations. Repairs shall be made promptly after damage occurs to prevent progressive deterioration of damaged trees.

C. 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 in accordance with "The Guide for Establishing Values of Tress and Other Plants" as produced by the International Society of Arboriculture.

D. Maintenance including watering, fertilizing, pruning, pest control, and other care to bring the replacement tree to the same general condition of original item shall be the responsibility of the Contractor.

E. Damaged tree limbs or trees which have died as a result of injury during construction shall remain the property of Owner and shall remain or be removed by the Contractor as directed by Owner's Representative.

1.14 MAINTENANCE:

A. Contractor shall be responsible to perform periodic inspections of existing trees to be preserved and submit written proposals to the Owner's Representative 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 Owner's Representative additional specialists as may be required to perform this work.

B. Irrigation: During construction the existing trees to be preserved shall, at the directions of the Owner's Representative, be irrigated to a minimum of 3' depth. Quantities and lengths of time are variable and shall depend upon climactic conditions or per the direction of the Owner's Representative.

END OF SECTION

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E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

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(NOT FOR CONSTRUCTION)

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REGISTERED LANDSCAPE ARCHITECT
SIGMUND W. MAYER 1987
Signature
06-16-23
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA

LA HABRA LANDFILL
VISTA GRANDE PARK
SPECIFICATIONS

DESIGNED BY :	TMA		
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN
CHECKED BY :	JM	DATE :	L-501
APPROVED BY :	RM/JM	DATE :	SHEET 66 OF 89

SECTION 02810
LANDSCAPE IRRIGATION SYSTEM

1.0 GENERAL
1.1 DESCRIPTION:

A. Division 1 applies to this Section. Provide all labor, materials, appliances, tools, equipment, facilities, transportation, and services necessary for and incidental to performing all operations in connection with furnishing, delivery, and installation of the Work of this Section, complete as shown on the Drawings and/or specified herein.

B. Work In This Section: Principal items include:

1. Irrigation mains.
2. Laterals.
3. Sprinkler heads.
4. Control valves.
5. Coupler valves, etc.
6. Automatic controllers.

C. Related Work Not In This Section: Examine all Sections for Work related to Work of this Section; principal items of which are:

1. Section 01532 - Tree Protection
Section 02900 - Landscape
2. Section 02970 - Landscape Maintenance

1.2 QUALITY ASSURANCE AND REQUIREMENTS:

A. Permits and Fees: Contractor shall obtain and pay for any and all permits and all inspections as required.

B. Manufacturer's Directions: The manufacturer's directions and detailed drawings shall be followed in all cases where the manufacturers of articles used in this contract furnish directions covering points not shown in the Drawings and Specifications.

C. Ordinances and Regulations: All local, municipal and state laws, and rules and regulations governing or relating to any portion of this Work are hereby incorporated into and made a part of these Specifications, and their provisions shall be carried out by the Contractor. Anything contained in these Specifications shall not be construed to conflict with any of the above rules and regulations or requirements of the same. However, when these Specifications and Drawings call for, or describe materials, workmanship, or construction of a better quality, higher standard, or larger size than is required by the above rules and regulations, the provisions of these Specifications and Drawings shall take precedence.

D. Explanation of Drawings:

1. Due to the scale of the Drawings, it is not possible to indicate all offsets, fittings, sleeves, etc. which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of his Work and plan his Work accordingly, furnishing such fittings, etc., as may be required to meet such conditions. Drawings are diagrammatic and indicative of the Work to be installed. The Work shall be installed in such a manner as to avoid conflicts between Irrigation systems, planting, and architectural features.

2. All Work called for on the Drawings by notes or details shall be furnished and installed whether or not specifically mentioned in Specifications.

3. Contractor shall not willfully install the irrigation system as shown on the Drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in the engineering. Such obstructions or differences should be brought to the attention of the Owner's authorized representative. In the event this notification is not performed, Contractor shall assume full responsibility for any revision necessary.

4. Work of this Section which is allied with the Work of other trades shall be coordinated as necessary.

E. Underwriters Laboratories: Electrical wiring, controls, motors, and devices shall be UL listed and so labeled.

1.3 SUBMITTALS:

A. (SD_60) Materials List:

1. The Contractor shall furnish the articles, equipment, materials, or processes specified by name in Drawings and Specifications. No substitutions will be allowed without prior written acceptance by the Architect.

2. Complete material list shall be submitted prior to performing any Work. Material list shall include manufacturer, model number, and description of all materials and equipment to be used.

3. Equipment or materials installed or furnished without prior approval of the Architect may be rejected and the Contractor required to remove such materials from the site at his own expense.

4. Approval of any item, alternate, or substitute indicated only that the product or products apparently meet the requirements of the Drawings and Specifications of the basis of the information or samples submitted.

5. Manufacturer's warranties shall not relieve Contractor of his liability under the guarantee. Such warranties shall only supplement the guarantee.

6. If equipment is as specified, no manufacturer descriptive catalogs are necessary in submittal.

B. Record Drawings:

1. Contractor shall provide and keep up to date and complete "as_built" record set of black line Xerox prints which shall be corrected daily and shown every change from the original Drawings and Specifications and exact "as_built" locations, sizes, and kinds of equipment. Prints for these purposes may be obtained from the Architect at cost. This set of Drawings shall be kept on the site and shall be used only as a record set.

2. These Drawings shall also serve as Work progress sheets and shall be the basis for measurement and payment for Work completed. These Drawings shall be available at all times for site reviews and shall be kept in a location designated by the Architect. Should the record as_built progress sheets not be available for review or not up to date at the time of any site reviews, it will be assumed that no Work has been completed and the Contractor will be assessed the cost of that site visit at the current billing rate of the Architect. No other inspections shall take place prior to payment of that assessment.

3. The Contractor shall make neat and legible notations on the as_built progress sheets daily as Work proceeds, showing the Work as actually installed. For example, should a piece of equipment be installed in a location that does not match the plan, the Contractor must indicate that equipment has been relocated in a graphic manner so as to match the original symbols as indicated in the irrigation legend. The relocated equipment and dimensions will then be transferred to the original as built plan at the proper time.

4. Before the date of the final site review, Contractor shall transfer all information from the as_built prints to mylar showing all information from the as-built plans. The dimensions shall be made so as to be easily readable even on the final controller chart (See Section C below) The original mylar as_built plan shall be submitted to the Architect for approval prior to the making of the controller chart.

5. The Contractor shall dimension from two permanent points of reference, building corners, sidewalk, or road intersections, etc., the location of the following items:
a. Connection to existing water lines.
b. Connection to existing electrical power.
c. Gate valves.
d. Routing of sprinkler pressure lines. (Dimension max. 100' along routing.)
e. Sprinkler control valves.
f. Routing of control wiring.
g. Quick coupling valves.
h. Other related equipment as directed by the Architect.

6. On or before the date of the final site review, the Contractor shall deliver the corrected and completed mylars to the Architect. Delivery of the mylars will not relieve the Contractor of the responsibility of furnishing required information that may be omitted from the Drawings.

C. Controller Charts:

1. Record Drawings shall be approved by the Architect before controller charts are prepared.

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.

4. The chart is to be a reduced drawing of the actual as_built system, of a maximum size that will fit inside controller housing, double sided if required for readability.

5. The chart shall be a blackline print and a different color shall be used to indicate area of coverage for each station, using pastel or transparent colors.

6. When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being a minimum 20 mils.

7. These charts shall be completed and approved prior to final acceptance of the irrigation system.

D. Operation and Maintenance Manuals:

1. Prepare and deliver to the Architect within 10 calendar days prior to completion of construction, two hard cover binders with three rings containing the following information:

a. Index sheets stating Contractor's address and telephone number, list of equipment with name and addresses of local manufacturer's representative.
b. Catalog and part sheets on all materials and equipment installed under this Contract.
c. Guarantee statement.
d. Complete operating and maintenance instruction on all major equipment.

2. In addition to the above mentioned maintenance manuals, provide the Owner's maintenance personnel with instructions for major equipment, and show evidence in writing to the Architect at the conclusion of the project that this service has been rendered.

E. Equipment to Be Furnished:

1. At time of final acceptance, Irrigation Contractor shall deliver to the City::
a. Two (2) keys for opening valve boxes.
b. Two (2) keys for each automatic controller.
c. Hose and Swivel Assemblies: Supply one (1) set of hose and swivel assemblies for every five (5) quick coupler valves installed.
d. Two special wrenches suitable for operating each type of shut-off valve installed.
e. Tools for disassembly and assembly, or adjustment, of each type equipment used in this installation requiring such special tools.
f. Operating instructions and parts lists, as printed by each manufacturer of each type equipment installed. Refer to "Material" section of the specifications and legend on the drawings.
g. List of equipment with names and addresses of local manufacturer representatives.
h. "As-built" drawings and controller charts.

2. The above mentioned equipment shall be turned over to the Owner at the conclusion of the project. Before final acceptance can occur, evidence that the Owner has received material must be shown to Architect.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING:

A. Contractor is cautioned to exercise care in handling, loading, unloading, and storing of PVC pipe and fittings. All PVC pipe shall be transported in a vehicle which allows the length of pipe to lie flat so as not to subject it to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged will be discarded and, if installed shall be replaced with new piping.

1.5 SUBSTITUTIONS:

A. Substitutions: If the Irrigation Contractor wishes to substitute any equipment or materials for those equipment or materials listed on the Irrigation Drawings and Specifications, he may do so by providing the following information to the Architect for approval, in conformance with Section 01340:

1. Provide a statement indicating the reason for making the substitution. Use a separate sheet of paper for each item to be substituted.

2. Provide descriptive catalog literature, performance charts and flow charts for each item to be substituted.

3. Provide the amount of cost savings if the substituted item is approved.

4. Approval of any item as a substitution or alternate is for design only, based on information or samples provided by the Contractor.

5. Contractor shall be responsible for the total performance of such substitution to equal or surpass the original in every respect.

6. If the substitution proves to be unsatisfactory in the opinion of the Architect, Contractor shall remove such Work and replace it with originally specified item, including installation as part of the Work of this Section.

B. Architect Responsibility: Architect shall have the sole responsibility for accepting or rejecting any substituted item as approved equal to equipment and materials listed on the Irrigation Drawings and Specifications.

1.6 GUARANTEE:

A. The one (1) year guarantee for sprinkler irrigation system shall be made in accordance with Section 01700. A copy of the guarantee form shall be included in the operations and maintenance manual.

2.0 PRODUCTS

2.1 MATERIALS:

A. Materials for irrigation installation shall be new materials and as specified unless specifically approved in writing by the Owner's representative as equal products. They shall conform to provisions of the Drawings and Specifications.

B. Pipe & Fittings:

1. Pressure Main Line Piping and Fittings: Sizes 2_1/2" and smaller shall be Schedule 40 PVC, on surface Schedule 40 galvanized pipe and fittings.

2. Non_Pressure Lines (buried): Shall be PVC Class 200.

3. Plastic fitting shall be the schedule of pipe being fitted (Sch. 40 and 80), PVC II, N.S.F. rated. Plastic fitting shall be polyvinyl chloride (PVC) high impact, extruded from B.F. Goodrich Geon 8700 A similar and equal to Lasco Industries, Sloane Mfg. Co., or equal, and PVC solvent weld cement as recommended by pipe manufacturers.

4. All pipe and fittings shall conform to specific requirements as follows:
a. PVC (Solvent Weld):
(i) Pipe: Manufactured from virgin polyvinyl chloride compound in accordance with ASTM D 1785or ASTM D 2241, cell classification 12454B, hydrostatic design stress rating not less than 2,000 P.S.I.
(ii) Fittings (Solvent weld or thread) Standard weight, schedule 40, side gated, injection molded PVC complying with ASTM D 2466, cell classification 12454B, including threads when required.
(iii) PVC nipples shall be schedule 80 with machine threads.
(iv) All PVC pipe must be labeled with the following markings:
(a) Manufacturer's name.
(b) Nominal pipe size.
(c) Schedule or class.
(d) Pressure rating in A.S.T. (Not required on drip tubing).
(e) NSF National Sanitation Foundation) approval (Not required on drip tubing).
(f) Date of extrusion.
(v) Solvent cement and primer for PVC solvent_weld pipe and fittings shall be of type and installation method prescribed by the manufacturer.
(vi) Galvanized Pipe and Fittings:
(a) Pipe shall be galvanized steel, American National Standard Institute (ANSI), Schedule 40 galvanized, mild steel screwed pipe.
(b) Fittings: Screwed beaded malleable iron, or 125 pound cast iron, flanged.
(c) Unions (2" and Smaller): Ground joint pattern.
(d) Unions (Larger Than 2"): Flanged type, packed with 1/16" thick fiber gaskets.

C. Quick Coupling Valves: Valves shall be as shown in legend and details.

D. Hose and Swivel Assemblies: Supply 1 set of hose and swivel assemblies for every 5 quick coupling valves.

E. Sprinkler Heads: Heads shall be of the adjustable type, sizes, and designations as shown on Drawings, or equal, and shall be sized, selected, and placed in a manner to achieve complete water coverage of areas to be watered.

F. True Union Ball Valves: Valves shall be as shown in the plans and legend.

G. True Union Ball Boxes: Boxes shall be round plastic valve boxes with locking covers, manufactured by Brooks or Carson or equal, and shall be of size and type as called out on the Drawings and in the details.

H. Remote Controller and Valves: Shall be as indicated in the legend and on the drawings.

I. Boxes For Remote Control Valves: Boxes shall be rectangular plastic boxes with locking covers, manufactured by Brooks or Carson or equal.

J. Controller Hunter I-Core: Controller shall be as shown in legend and plans.

K. 1-1/2" Water Meter: Water Meter shall be as shown in legend and plans.

L. Electrical:

1. High Voltage: All high voltage electrical service required for automatic controller and other equipment noted on Drawing for irrigation system will be provided by others. Irrigation Contractor shall be responsible for final connection.

2. Low Voltage: Connections between controller and remote control valves shall be made with direct burial AWG_UF, 600 volt wire, insulation thickness 3/64", utilizing low density high molecular weight polyethylene insulation. Splices, where permitted, shall be waterproofed using Rainbird, Pen_tite, or 3M_DBY connectors or fusible heat shrinking tubing and housed in a box. Boxes for other irrigation may be utilized for this purpose. Wire sizing shall be a minimum of #14 "UF. 600 volt underground wiring. Common wire is to be white in color, and all others a different color.

M. Copper Pipe and Copper Fittings: Pipe and fittings shall be provided wherever local codes require its use, as for example under building slabs and attached to parking structure roofs.

3.0 EXECUTION

3.1 WORK PROCEDURES:

A. Contractor shall follow local building codes, customary practices and as follows:

B. General: The Contractor shall connect to existing water supply as shown on the Drawings and as necessary to carry out the intent of the Drawings and Specifications. Check location of lines, valves, other underground utilities, etc., and receive approval of Owner's representative before any installation. The Contractor shall check and verify existing water pressure and available gallonage before starting Work and shall inform the Architect if not adequate as designed.

C. Trenches, Subgrades, and Backfill. Excavate trenches, prepare subgrades and backfill true to line and grade with sufficient room for pipe fittings, testing, and inspection operations. Cut bottom of trench so that pipe barrel rests uniformly on trench bottom. Do not backfill until pipe system has been subjected to a hydrostatic test as specified.

D. Depth: Depth of coverage for irrigation piping shall be as follows:

1. Main lines _ 18 inches minimum depth.

2. Lateral lines _ 12 inches minimum depth.

3. Where subslab conflicts, install as deep as possible.

4. 24 inch depth for all lines under driveways.

E. Backfill: Backfill trenches after acceptance of Work with suitable approved material, tamping soil around pipe, and thoroughly water settling all trench fills. Trenches under walks and roads shall be backfilled in accordance with General and Special Conditions of the Specifications. Wherever subsidence of trenches occurs, the Contractor shall be responsible for restoring all to final grade.

F. Control Valves: Locate control valves in close proximity to walks or to accessible areas; control valves shall never be more than 12" from walks or nearest access as indicated on Drawings and in a manner to make them accessible to manual operations without interference of water spray from heads.

G. Quick Coupling Valves: Install all quick coupling valves as indicated on Drawings and to conform to the full intent and meaning of the Drawings and the Specifications.

H. Pipe: All pipe shall be laid true and accurate to grade with full length of pipe section lying solidly on a firm base. If grade or joint of pipe is disturbed after laying, it shall be taken up and relaid.

1. Clean interior of pipe thoroughly and remove all dirt or foreign matter before lowering pipe into trench, and keep clean during operations by plugs or other approved method. The ends of all threaded pipe shall be reamed out full size and with a long taper reamer so as to be partially bell_mouthed and perfectly smooth. All offsets shall be made with fittings. All water lines shall be thoroughly flushed out before the heads are installed.
2. Threads on pipe shall be cut with sharp clean dies to conform to American Standards Association Specifications and so that not more than 2 threads are left exposed on the pipe.

3. Joints in all screwed metallic and metallic to plastic piping shall be made by applying specified pipe joint compound tape to the threaded end with one_half inch lapping before screwing joints together.

4. Do not lay pipe in water or mud. Keep ends of pipe securely closed when work is not in operations to prevent water or other matter from entering the lines.

5. Long runs of PVC pipe shall be slightly snaked in the trench to allow for contraction.

6. Replace without cost to the Owner any pipe that is found to be defective.

7. Provide unions and fittings as necessary to make all connections to existing lines and to complete Work as intended on the Drawings.

8. Install dielectric couplings and flanges as required at the junction of pipes or fittings made of dissimilar metal.

9. Risers to sprinkler heads shall be schedule 80 PVC, or as shown in the details, and offset from laterals as indicated on the Drawings.

10. All sprinkler heads next to walks, paths, parking areas, and any areas where people normally walk shall be the pop_up type. No fixed sprinkler risers shall be installed next to such walks, paths, or parking areas.

11. Solvent weld joints will be made as follows:
a. Good square cuts, clean and free of debris and shavings and moisture.
b. Main Line Only: Apply p_70 Weldon or equal. Finish make up of joint using Weldon 711 or equal. Hot glue will not be permitted.

I. Tests: Test all sprinkler mains after pipe is laid and joint completed by submitting to a pressure test of 125 p.s.i. static pressure in the presence of the Owner's representative. Do not backfill any trench until the Owner's representative has approved the test. Repair any leaks until lines meet test requirements and the Owner's representative's approval. All laterals shall be tested under main pressure for leaks; any leaks shall be repaired. All tests with the exception of the laterals shall be for a duration of 4 hours with a maximum drop of 4 psi allowed.

J. 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 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 Architect.

K. Sprinkler Heads: Install sprinkler heads as directed. Where they adjoin the edges of walks, set turf pop_up heads in 2" from edge and shrub and rotor heads 6" in from edge. Special conditions for installing heads shall be as shown on the Drawings.

1. Space the sprinkler heads as shown on Drawings or as directed and as necessary to gain full water coverage of the sprinkler areas. Adjust heads as necessary, changing sizes and nozzles until Work is approved.

2. Add sprinkler heads as needed or as directed for full water coverage of all areas without extra cost to the Owner.

3. Make final adjustments of all sprinkler heads after soil has settled.

L. Finish Grade: Bring all areas excavated for the installation to a neat and true finish grade to match adjoining areas.

M. Completion: Leave entire installation in complete working order, free from any and all defects in material, workmanship, or finish, regardless of any discrepancies and/or omissions in Drawings and Specifications.

3.2 TEMPORARY REPAIRS:

A. Owner reserves the right to make temporary repairs as necessary to keep the sprinkler system equipment in operating condition. The exercise of this right by the Owner shall not relieve the Contractor of his responsibility under the terms of the guarantee as herein specified.

3.3 MAINTENANCE:

A. The entire sprinkler irrigation system shall be under full automatic operation for a period of seven days prior to any planting.

3.3 CLEANUP:

A. Clean_up shall be performed as each portion of Work progresses. Refuse and excess dirt shall be removed from the site, all walks and paving shall be broomed or washed down, and any damage sustained to the Work of others shall be repaired and Work returned to its original condition.

END OF SECTION

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(310) 738-2088
E-mail: jmassoud@trollermayer.com

NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

REGISTERED LANDSCAPE ARCHITECT
JIGRAD W. MAYER, No. 3137
Professional
Signature
12/31/24
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA
FOR PLANNING PURPOSES ONLY
NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
SPECIFICATIONS

DESIGNED BY :	TMA		
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN
CHECKED BY :	JM	DATE :	
APPROVED BY :	RM/JM	DATE :	L-502

SHEET 67 OF 89

SECTION 02900

LANDSCAPING

PART 1 - GENERAL.

1.01 DESCRIPTION: Division 1 applies to this Section. Provide all labor, materials, appliances, tools, equipment, facilities, transportation, and services necessary for and incidental to performing all operations in connection with the installation of the Work of this Section, complete as shown on the Drawings and/or specified herein.

A. Work In This Section: Principal items include:

1. Examine all other Sections for Work related to those other Sections and required to be included in this Section.
2. Fine grading in landscaping areas.
3. Landscaping.
4. Rodent and vermin control.
5. Soil Testing and Soil Preparation
6. Plants and Planting
7. Staking
8. Herbicide
9. Watering and maintenance

B. Related Work Not In This Section:

1. Section 01532 - Tree Protection
2. Section 02810 - Irrigation
3. Section 02970 - Landscape Maintenance

1.02 SUBMITTALS: Refer to Section 01300 for procedures.

A. Materials list: Submit complete material list prior to performing any work. Material list shall include manufacturer, model number, and description of all materials and equipment to be used. The Contractor shall also furnish the articles, equipment, materials, or processes specified by name in Drawings and Specifications. For Tree Submittals, provide photo image, height, canopy, width and caliper at 4' height. A nursery worker shall stand next to the tree in the image for a sense of scale. For Shrub, Groundcover and Vine Submittals, provide photo image, height and width of the entire plant. No substitutes will be allowed without prior written acceptance. Equipment or materials installed or furnished without prior approval of the Architect may be rejected and the Contractor required to remove such materials from the site at his own expense. All cut sheets, nursery images of trees and samples of materials shall be submitted 3 weeks prior to installation

B. Manufacturer's Product Specification Cut Sheets/Data:

1. Provide 6 copies for all materials
2. Submit manufacturer's standard printed product data for all items, referenced to article number in this specification for which each item is being submitted.
3. Submit manufacturer's printed installation instruction and methods.
4. Material Safety Data Sheets (MSDS): For all products used.

C. Required Manufacturer's Product Specification Cut Sheets /Physical Samples:
Delivery may begin upon approval of Cut Sheets/Samples or as directed by Owner's Representative. Submit Samples in the form of Cut Sheets and Physical samples as required by the Landscape Architect or Owner's Representative and store on the site until furnishing of material is complete. Samples and Cut Sheets required are listed below:

1. Irrigation Equipment (see Section 02810)
2. Submit 'bagged' samples of each of the following, (2) samples of each, accompanied by (6) copies of the manufacturers specification cut sheets:

   Physical Samples of Bark Mulch
   Decomposed Granite/Stabilizer
   Decorative Rock/Pea Gravel
   Planting Mix, and Soil Amendments. NOTE: Approved samples of each to remain on site until furnishing of materials is complete. Delivery may begin upon approval of all submittals or as directed by Owner's Representative.

3. Cut Sheets for Tree Root Control Barriers and Aluminum Edging
4. Cut Sheets for Tree Stakes/Weed Whip Guards
5. There shall be at least one (1) photograph of each species of tree, shrub, vine and ground cover to be planted. All photographs shall be taken with a person/or a scale in each photo next to the plant. Include with the photographs of all trees a notation of caliper, canopy width and height of each species of tree. If there are multiple boxes or gallon sizes of the same plant, include separate information for each container sized tree.
6. Fertilizer Analysis: also provide labels of each fertilizer used and the quantities used in each application
7. Soil Amendment Analysis
8. Analysis of Imported Topsoils and Sand
9. Cut Sheets of Herbicides, Pesticides and Fungicides: Furnish manufacturer's certification by the USDA, description of ingredients, and recommendations for usage and application rates for each material to be used and dates of application
10. Cut Sheets shall be provided for all other products noted in Part 2, 2.01 Soil Additives, Fertilizers, and Herbicides and 2.02 Staking Material.

D. Certificates: The Contractor shall submit, at time of delivery, to the Inspector of Record (IOR), delivery receipts or tickets of all amendments and soil additives, reflection actual quantities and types of materials delivered to the project site. Delivery receipts or tickets shall include the name of the project and the date of the actual delivery. Four (4) copies of all receipts / tickets shall be forwarded to the Architect, by the Contractor. Approval of types and quantities by the IOR and Architect are required prior to working in or spreading any amendments or soil additives.

E. Prior to being placed on maintenance-Refer to Section 3.06 "Inspection, Start of Maintenance" - the Contractor shall submit a schedule of all activities planned during the maintenance period. This shall be accepted by the *Grounds Supervisor* prior to the start of the maintenance period. All schedule changes shall be documented and accepted by the Grounds Supervisor.

F. Prior to the date of the final walk-through, the Contractor shall acquire from the *Grounds Supervisor* approved reproducible prints and shall produce the final record from the job record set of all changes made to all plans during construction, label said prints, "As-Builts" and deliver to the *Grounds Supervisor* and as required by any Local Agency. Prior to the date of final inspection, the Contractor shall deliver to the *Grounds Supervisor* the "Landscape and Irrigation Guarantee" as required. Said Guarantee shall be on the Contractor's letterhead and dated the scheduled final acceptance date.

G. All turnover items noted in other specification sections shall be delivered prior to the final walk-through.

H. Supply a monthly record of all herbicides, insecticides, fertilizes, and disease control chemicals with rates and amounts used noted.

1.03 PROTECTION OF WORK: The Contractor shall be responsible for protection of all adjacent finished surfaces and materials, both interior and exterior, while performing all landscape and irrigation operations, including maintenance. These finishes and materials shall be cleaned and returned to as-new condition when work is completed.

1.04 GUARANTEES AND REPLACEMENTS: Refer to Section 01780.

A. Shrubs: Guarantee shrubs from the time of installation to the end date of the 90 day Maintenance Period.

B. Trees: Guarantee all trees to live in a healthy condition for (1) one year from the end date of the Maintenance Period. Dead or unhealthy trees shall be replaced within 10 days after notification of Contractor by the Owner's Representative or the Architect.

C. Dead and Non_Vigorous Plants: As soon as weather permits, replace all dead plants and all plants not in a vigorous condition as noted at the end of the Maintenance Period.

D. Replacements: Plants used for replacement shall be the same kind and size as specified on the Planting Plan. They shall be furnished, planted, and fertilized as specified at no additional cost to the Owner. Replacement plants shall be maintained for a period of time equal to the original maintenance period. They shall be in excellent condition following the replacement and maintenance.

E. Provide Certificate of Compliance from authority having jurisdiction indicating approval of plants, fertilizer and herbicide mixture. Plant Materials: Described by ASTM Z60.1; free of disease or hazardous insects.

PART 2 - PRODUCTS.

2.01 SOIL ADDITIVES, FERTILIZERS, LANDSCAPE MATERIALS, AND HERBICIDES:

A. Mulch :"Walk On-Chips" as supplied by EarthWorks Soil Amendments Inc., (951)782-0260, or equal approved by the Owner's Representative. The mulch shall consist of fibrous, woody bark mixture of varied particle size.

B. Prepared Planting Mix for Backfill in all Planting Pits Except Raised Planters: Materials and amounts specified here are anticipated. This amendment is for bidding purposes and shall be superseded by recommendation of soil test/analysis report. Mix shall be the following materials thoroughly mixed:

By volume: 30% GroMulch and 70% excavated soil

Plus 2 lb. 12_12_12 commercial fertilizer per cubic yard of mix.

Plus: 3 lb. Agricultural grade gypsum per cubic yard of mix

Plus: 2 lb. Iron sulfate per cubic yard of mix

C. Ammonium Sulfate: Shall be standard brand (NH4) 2SO4.

D. Urea Formaldehyde: 35_0_0 shall be standard brand, as approved by the Architect.

E. Iron Sulfate: Shall be standard brand 20% Fe.

F. Vitamin B1 Root Hormone: Hormone shall be Superthrive, Hormex, or equal approved by the Architect.

G. Nitrolized Fir bark Fines: Fines shall be "Forest Humus" as sold by Kellogg Company, or equal approved by the Architect.

H. Commercial Fertilizer: Fertilizer shall be 12_12_12, standard commercial brand as approved by the Architect. Nitrogen for this mix shall be derived from 2% ammoniac, 5% urea, and 14% urea formaldehyde.

I. Gro Mulch: Mulch shall be as manufactured by the Kellogg Co.

J. Herbicide: Herbicide shall be Roundup or equal approved by the Architect.

K. Fertilizer Tablets: Agriform per manufacturer's recommendations.

L. Agricultural Gypsum: Gypsum shall be agricultural calcium sulfate CaS04 approved by Landscape Architect. This shall only be used in clay or adobe soils.

M. Mycorrhizal Fungal Inoculant: Plant and Tree Saver Transplant manufactured by Plant Health CareInc. or equal.

N. Soil Sulfur: Agricultural grade sulfur containing a minimum of 99% sulfur (expressed as elemental).

2.02 STAKING MATERIAL:

A. Stakes: Stakes for larger plant material shall be 2" diameter x 10'_0" long lodge pole stakes, actual dimension.

B. Ties: Ties shall be V.I.T. Cinch Ties, Model #CT32 For 24" box trees.

C. Tree Trunk Guards: Guards shall be Arbor Guard by Deep Root, (714) 898_0563, or equal approved by the Architect and shall be installed on the trunks of all trees in lawn areas.

A. Root Control Barrier: All 48" box, 36" box, 24" box and 15 gallon trees planted within 6' of any hardscape areas (sidewalks, walls, concrete drainage swales, cubs, driveways or any other structure) shall include root barriers, root barriers shall extend 5' on either side of the trunk for a total length of 10'. Root barriers are as follows:

1. 36" box trees, 24" box trees, and 15 gallon trees - Model # UB 18-2 available from DeepRoot, (800) 766-8835
2. 48" box trees - Model # UB 24-2 available from DeepRoot, (800) 766-8835

2.03 ALUMINUM EDGING:
not used

2.04 JUTE MESH:
Shall be Anti-Wash / Geo Jute by Pacific Soil Stabilization, (805) 925-7737

2.05 PLANT MATERIALS:

A. Quality and Size:

1. Quality and size of all plants shall be No. 1 grade. They shall be fresh, vigorous, of normal growth, free of disease, insects, insect eggs and larvae, with strong root systems.
2. Sizes of plants shall be as stated on the planting plan. No root bound or undersized materials shall be allowed.
3. Protect and maintain plant material in a healthy and vigorous condition until planted.
4. Do not install plant material when ambient temperatures may drop below 35 degrees F or rise above 90 degrees F.
5. Do not place plants in containers or asphalt paving when outdoor temperature exceed 100 degrees F. for a period exceeding 16 hours.

B. Pruning: Pruning shall not be done prior to delivery except by special approval of the Architect.

1. Tree Trimmer Qualifications: Company specializing in pruning trees with proof of ISA Arborist Certification and ISA Tree Worker Certification.
2. Tree Pruning: ISA - Pruning Standards for Shade Trees.

C. Inspection: Inspection of plant materials required by City, State, or Federal authorities shall be a responsibility of the Contractor, and he shall obtain permits or certificates prior to delivery of plants to site.

D. Plant Marking: Each plant shall be clearly marked with a waterproof tag as to its botanical name as required by California State Agricultural Laws.

E. Deliver, store, protect and handle products to site under provisions of Section 01600 - Materials and Equipment.

2.06 IMPORTED TOPSOIL:

A. Class A topsoil: good class A topsoil should be used as in the following definition. The soil must have good structure. If necessary, the soil can be conditioned to help improve the physical soil properties.

1. Topsoil shall be free of roots. Clods and stones larger than 1-inch in the greatest dimension, pockets of coarse sand, noxious weeds such as nut grass roots and nodules, sticks, brush and other litter. It shall not be infested with nematodes or other undesirable insects or plant disease organisms.
2. Topsoil shall be friable and have sufficient structure in order to give good tilth and aeration to the soil. Total pore space content on a volume/volume basis shall be at least 15 percent when moisture is present at field capacity. Soil shall have a field capacity of at least 15 percent by weight.
3. Gradation limits - Soil shall be a sandy loam, loam, or clay loam. The definition of soil texture shall be per the USDA classification scheme.

B. Quality controls: All topsoil's to be imported for the planting areas shall receive an "Agricultural Suitability Analysis" of soil before being placed in the planting areas. Soil shall be tested from the source site. There shall be 1 (one) test from each source site. After delivery to site the soil shall again receive 1 (one) soil test before final placement. These tests are to be collected at the site, by Wallace Labs; analysis and recommendations made by Wallace Laboratories, 365 Coral Circle, El Segundo CA 90245, Ph. (310) 615-0116 Fax (310) 640-6863. Tests shall be submitted to the architect for approval before placing soils. Tests shall include the following:

1. Must include pH measurement in the Saturation Extract, Electro conductivity of the saturation extract and Sodium Adsorption Ratio of the saturation extract. The approved procedures are the following:

PH	Method 21
Saturation Extract	Method 2
Sodium Adsorption Ratio	Method 20b

   Methods of the *United States Salinity Laboratory* as published in the Agricultural Handbook Number 60 entitled *"Diagnosis and Improvement* of *Saline and Alkali Soils"*.

2. The following nutrients and elements must be determined with an approved extraction method. Interpretation data must be given citing concentrations, which are considered to be low, medium and high: boron, calcium, copper, iron, magnesium, manganese, molybdenum , phosphorus, potassium, sodium, sulfur, and zinc.

   The approved methods are those cited by the Council on Soil Testing and Plant Analysis and those methods currently used by soil scientists and agronomists and published in *Communications in Soil Science and Plant Analysis, Soil Science and Soil Science Society of America Journal*. Approved methods are Mehlich Number 3, Bray PI, Bray P2, Olsen P, DTPA, ammonium acetate, ammonium bicarbonate-DTPA, wid hot water extract for boron.

3. The saturated extract must be analyzed for calcium, magnesium, sodium, boron, chloride, nitrate, and sulfate.
4. The following trace metals must be measured by the DTPA extract: Aluminum, arsenic, cadmium, chromium, cobalt, lead, lithium, nickel, selenium, silver, strontium, tin and vanadium.
5. The presence of calcium carbonate and/or magnesium carbonate must be determined by commonly used methods.
6. Soil Texture and Organic Matter content may be estimated or determined by commonly used methods.
7. Interpretation of nutritional deficiencies or excesses and potential toxicities must be given.
8. If required, determine the following by methods approved by the American Society of Agronomy as published in the *Methods of Soil Analysis,* methods of the United States Salinity Laboratory as published in the Agricultural Handbook Number 60 entitled *"Diagnosis and Improvement* 0f *Saline and Alkali Soils,"* and bulk density of clods by the method published in *Soil Science***,** vol 155, 325-330 (1993):
9.

   Exchangeable Ammonium cation
   Base Saturation
   Cation Exchange Capacity
   Carbonates Determination
   Soil Bulk Density (Compaction)
   Sand, Silt and Clay determination
   Water Infiltration Rate

   Elemental determinations to be made according to methods approved by the EPA or by the American Society of Agronomy.

C. Possible sources of class A topsoil:

1. Excavations or grading of native topsoil from undeveloped areas.
2. Excavations or grading of topsoil fronm previously landscaped or formed areas.
3. Excavations or grading of topsoil from previously non-landscaped or non-farmed areas if the soil is thoroughly evaluated for potential toxic materials.
4. Soil supply companies supplying natural topsoil without excessive amending.
5. Manufacturing of topsoil with less desirable soil as long as the soil has matured and developed the characteristics of class topsoil.

D. Contractor Responsibilities.

1. Provide inspections, tests and similar quality control services as specified below. The contractor will pay cost for these services.
2. Employ and pay an independent agency to perform specified quality control services.
3. Owner will engage and pay for services of an independent agency to perform inspections and tests, which are not required by the specification.
4. Retest where results of required inspections, tests or similar services prove unsatisfactory workmanship and materials and do not indicate compliance with specifications regardless of whether the tests and services where not the responsibility of the contractor will be paid by the Contractor.

E. Owner Responsibility: Owner will provide and pay for inspections, tests and similar quality control services not specified.

F. Duties of Testing Agency.

1. Retest where results of required inspections, tests or similar services prove unsatisfactory workmanship and materials and do not indicate compliance with specifications regardless of whether the tests and services where not the responsibility of the contractor will be paid by the Contractor.
2. Independent testing agency engaged to perform inspections, sampling and testing of materials shall cooperate with architect and contractor in performance of its duties and shall provide qualified personnel to perform required inspections and tests.
3. Agency shall notify architect, owner and contractor promptly of irregularities or deficiencies observed in the work or materials during performance of its services.
4. Agency is not authorized to release, revoke, alter or enlarge requirements of specifications or approves or accepts any portion of work or materials.
5. Agency shall not perform any duties of contractor.

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NO.	REVISION DESCRIPTION	BY:

BIDDING SET SUBMITTAL
(NOT FOR CONSTRUCTION)

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REGISTERED LANDSCAPE ARCHITECT
JEREMIAH W. MAYER
No. 5017
Signature
05-31-24
Renewal Date
06-16-23
Date
STATE OF CALIFORNIA

FOR REFERENCE ONLY
NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
SPECIFICATIONS

DESIGNED BY :	TMA				
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN		
CHECKED BY :	JM	DATE :	L-503	SHEET 68 OF 89	
APPROVED BY :	RM/JM	DATE :			

G. Submittals

1. Independent testing agency shall submit written report of each inspection, test or similar service to architect and owner unless contractor is responsible for service. If contractor is responsible for service, submit written report of each inspection, test or similar service through contractor.

2. Each source of topsoil shall be tested with representative submittal samples and at various depths. Soil shall be tested from the source site. There shall be a 1 (one) test from each source site. After delivery to site the soil shall again receive 1 (one) soil test before final placement. The owner reserves the right to test delivered materials at owner's expense. If any delivered material fails to meet the specifications, the material will be promptly removed from the site at the contractor's expense. The contractor shall pay for the testing of any materials not meeting specifications.

2.07 DECOMPOSED GRANITE MATERIALS

A. Decomposed Granite "Gail's Gold" or equal. Screen evenly and grade from 3/32" max to 0".

1. Sources:
   a. Gail Materials, INC 951.279.1095

B. Stabilized Binder

1. Patented, non-toxic, organic binder that is a colorless and odorless concentrated powder that binds decomposed granite.

2.08 EXCESS DECOMPOSED GRANITE MATERIALS

A. Provide owner's authorized rep. with the following excess materials for use in future decomposed granite repair: One (1) 40 to 50 lb. Bags of the aggregate paving blended with proper amount of Stabilizer.

PART 3 - EXECUTION.

3.01 FINE GRADING

A. Where any portion of irrigation system is installed after grading and fertilizing has been performed, refill and re-fertilize upper portion of backfill as specified herein.

B. Fine Grading: Upon completion of rough grading, perform required fine grading of planted areas.

1. Before and during preliminary fine grading, dig out and remove all weeds and grasses. Dispose of off-site at Contractor's expense.
2. Remove all rocks larger than one half (1/2) inch in upper 8" of soils.
3. Do not work the soil when moisture content is such that excessive compaction will occur, nor when soil is so dry that clods will not break readily.
4. Apply water, if necessary, to provide ideal density for cross-tilling and for planting.
5. Grade so as to anticipate or match the certified finished grades and swales.
   a. Remove or redistribute excess soil before the application of fertilizer and mulch.
   b. Where soil is to be replaced by plants and/or mulch, make allowance to prevent efficiency in the depth of mulch when final grading is completed.
   c. Excess soil generated from the planting holes and not used as backfill or in establishing the final grades shall be removed from the site.

C. Grades and Elevations: When weed abatement, soil preparation and amending is completed, and the soil has dried so as to be readily worked, fine grade planting areas to elevations shown on Contract Drawings.

1. Where grades are not otherwise indicated, provide uniform levels or slopes between points where elevations are given.
2. Make minor adjustments of grade where so requested by the Owner's Representative.
3. Provide finished grades which are even, uniform and without abrupt change of surface.
4. Slope soil areas away from structures to allow natural runoff of water, regrade swale surfaces as required for a minimum 2% run-off, or as indicated on plan. Grade low spots and swales when soil is at optimum moisture content for working.
5. Provide final finished soil grades in planter areas 2 inches below paving and curbs, or as shown on the Contract Drawings. Add mulch on top of soil.
6. Compact all soil to final grades: minimum 80%, maximum 85%, unless otherwise required by soils report or for structural reasons.

3.02 SOIL TESTING, CONDITIONING, FERTILIZING, AND WEED ABATEMENT:

A. Soil Testing: **Soils test <u>on site</u> shall be conducted twice:**

(1) after rough grading is complete
(2) before planting commences, but after irrigation installment and soil amendments have been applied.

Tests are to be <u>collected at the site, by Wallace Labs; analysis and recommendations made by Wallace Laboratories</u> , 365 Coral Circle, El Segundo CA 90245, Ph. (310) 615-0116, Fax (310) 640-6863. The contractor will pay for cost for these services. Copies of tests shall be submitted to the Architect. Contractor shall allow two weeks for each round of soil testing to take place. Tests shall include the following:

1. Must include pH measurement in the Saturation Extract, Electro conductivity of the saturation extract and Sodium Adsorption Ratio of the saturation extract. The approved procedures are the following:

   PH Method 21
   Saturation Extract Method 2
   Sodium Adsorption Ratio Method 20b

   Methods of the *United States Salinity Laboratory* as published in the Agricultural Handbook Number 60 entitled *"Diagnosis and Improvement* of *Saline and Alkali Soils"*.

2. The following nutrients and elements must be determined with an approved extraction method. Interpretation data must be given citing concentrations which are considered to be low, medium and high: boron, calcium, copper, iron, magnesium, Manganese, molybdenum , phosphorus, potassium, sodium, sulfur, and zinc.

The approved methods are those cited by the Council on Soil Testing and Plant Analysis and those methods currently used by soil scientists and agronomists and published in *Communications in Soil Science and Plant Analysis, Soil Science and Soil Science Society of America Journal.* Approved methods are Mehlich Number 3, Bray PI, Bray P2, Olsen P, DTPA, ammonium acetate, ammonium bicarbonate-DTPA, with hot water extract for boron.

3. The saturated extract must be analyzed for calcium, magnesium, sodium, boron, chloride, nitrate, and sulfate.
4. The following trace metals must be measured by the DTPA extract: Aluminum, arsenic, cadmium, chromium, cobalt, lead, lithium, nickel, selenium, silver, strontium, tin and vanadium.
5. The presence of calcium carbonate and/or magnesium carbonate must be determined by commonly used methods.
6. Soil Texture and Organic Matter content may be estimated or determined by commonly used methods.
7. Interpretation of nutritional deficiencies or excesses and potential toxicities must be given.
8. If required, determine the following by methods approved by the American Society of Agronomy as published in the *Methods of Soil Analysis,* methods of the United States Salinity Laboratory as published in the Agricultural Handbook Number 60 entitled *"Diagnosis and Improvement* 0f *Saline and Alkali Soils,"* and bulk density of clods by the method published in *Soil Science***,** vol 155, 325-330 (1993):

   Exchangeable Ammonium cation
   Base Saturation
   Cation Exchange Capacity
   Carbonates Determination
   Soil Bulk Density (Compaction)
   Sand, Silt and Clay determination
   Water Infiltration Rate
   Elemental determinations to be made according to methods approved by the EPA or by the American Society of Agronomy.

B. Weed Abatement: Determine that rodents and vermin are not present. If rodents and vermin are present control shall be undertaken by a licensed pest control applicator. Weed abatement shall be two grow-kill cycles. Anticipate at least 8 weeks for weed abatement. Contractor shall coordinate the scheduling of any spraying of herbicide to occur on a Friday afternoon or school holiday and shall notify the District one (1) week prior to applications in order for them to post notice. The irrigation system needs to be fully operational and be functioning prior to and during the weed and kill operation. Keep soils moist for 3 weeks. Spray all areas to receive lawn, shrubs or ground cover with herbicide. Keep soils moist for five weeks. Again spray all areas to receive lawn, shrubs or ground cover with herbicide. Follow the manufacturer's recommendations.

C. After weed abatement, remove and dispose of all dead weeds, including roots.

D. For existing turf areas to be removed, remove all turf, weeds and roots plus 1" of soil below.

E. Soil Amendments for planting areas**: <u>Do not spread amendments until approval of delivered materials has been received from the IOR and Architect.</u>** Materials and amounts specified here are anticipated. This amendment is for bidding purposes and shall be superseded by recommendation of soil test/analysis report.

F. Tilling: All planting areas in the park that area 90% soil compaction or above shall be cross-ripped 12" on center to a maximum depth of 10" below grade and follow with rototillage to reduce soil clods to a maximum diameter of 1 -inch in the top 8 inches. Remove stones and foreign matter over one half (1/2) inch in diameter from upper 8" of soil. Planting areas too small for power equipment shall be hand dug and tilled to a depth of 10" below grade. <u>(All tilling shall be completed prior to adding conditioners and fertilizers, unless occupied by existing trees that remain in place)</u> . Any part of the irrigation system, including heads, damaged during tilling shall be replaced with new equipment.

G. Planting Areas: The following amendments are anticipated. Exact mix and quantities shall be per the recommendations from soil testing results. All planting areas shall receive the following:

1. Gro-Mulch: 3 cubic yards per 1,000 square feet thoroughly mixed into the top 6" of soil for lawn, and 5 cubic yards per 1,000 square feet mixed into top 10" for shrubs and ground cover.
2. Gypsum: 40 lbs./1,000 square feet thoroughly mixed into the top 6" of soil.
3. Commercial fertilizer: 20 lbs./1,000 square feet thoroughly mixed into the top 6" of soil.

H. Jute Mesh or Matting: Begin at the top of the slope by anchoring the jute mesh in a 6" by 6" wide trench with a 6" steel staple every 12". Backfill and compact the trench after stapling. Roll the blankets down the slope in the direction of the water flow. The edges of parallel rolls of jute mesh must be stabled with approximately a 2" overlap. When the pieces must be spliced down the slope, place the epics end over end (shingle style) with approximately 6" overlap. Staple through overlapped area approximately 12" apart. Also, put 1 staple per square yard all along the roll. Jute mesh is to be installed on all slopes 2-1/2:1 and greater. Repair and stabilize all jute mesh installation that is disturbed during planting installation .

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REGISTERED LANDSCAPE ARCHITECT — RICHARD W. MAYER — No. 2611 — Signature — 12/31/24 Renewal Date — 06-16-23 Date — STATE OF CALIFORNIA
FOR PLANNING PURPOSES ONLY NOT FOR CONSTRUCTION

LA HABRA LANDFILL
VISTA GRANDE PARK
SPECIFICATIONS

DESIGNED BY :	TMA			
DRAWN BY :	TMA	DATE : 06-16-2023	SCALE: AS SHOWN	
CHECKED BY :	JM	DATE :	SHEET	L-504
APPROVED BY :	RM/JM	DATE :	69 OF 89	

SECTION 02970
LANDSCAPE MAINTENANCE

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Work Specified in this Section: Furnish all labor, material, equipment, and services required to maintain the landscape in an attractive condition as specified herein for a period of 90 calendar days.

B. Related Work Specified in Other Sections:
   1. Section 02900: Landscaping

C. Definition: The word Architect as used herein shall refer to the Landscape Architect or the Owner.

1.2 QUALITY ASSURANCE

A. The Contractor's representatives and employees shall be experienced in landscape maintenance.

1.3 90 CALENDAR DAY MAINTENANCE PERIOD

A. The Contractor shall continuously maintain all areas involved in this Contract during the progress of work. Maintenance period shall not start until all elements of construction, planting, and irrigation for the entire project are in accordance with Plans and specifications.
   1. A prime requirement is that groundcover areas shall have been planted and mulched.
   2. The Contractor's maintenance period will be extended if the provisions required within the Plans and specifications are not fulfilled. Project may not be segmented into maintenance phases.
   3. The Contractor shall request a Pre-Maintenance inspection by the Owner and Architect at the completion of the installation process.
   4. The Maintenance Period shall begin upon successful completion of the Pre-Maintenance walk-through punch list and acceptance of the landscape installation by the Owner.
   5. If such criteria are met to the satisfaction of the Owner, a field notification will be issued to the Contractor to establish the effective beginning date of the maintenance period.

B. The Maintenance Period continues for 90 calendar days until final acceptance of the work by the Owner. Improper maintenance or poor condition of any planting at the termination of the scheduled maintenance period may cause postponement of the final completion date of the Contract.

C. In order to carry out the plant maintenance work, the Contractor shall furnish sufficient people and adequate equipment to perform the work during the maintenance period.

D. Any day when the Contractor fails to adequately maintain plantings, replace unsuitable plants or do weed control or other work, as determined necessary by the Owner, will not be credited as one of the maintenance period working days.

1.4 GUARANTEE AND REPLACEMENT

A. Guarantee: All tree material installed under the contract shall be guaranteed for a period of one year. Any plant found to be dead or in poor condition due to faulty materials or workmanship, as determined solely by the Architect, shall be replaced by the Contractor at his expense.
   1. Replacement: Any materials found to be dead, missing, or in poor condition during the Maintenance period shall be replaced within two (2) days.
   2. The Architect shall be the sole judge as to the condition of material.
   3. The Contractor shall replace material rejected during the Guarantee period within fifteen (15) days of written notification by the Owner.

1.5 OBSERVATION VISITS

A. The Contractor shall request progress visits from the Owner at least 48 hours in advance of anticipated visits. Normal observation visits are as follows:
   1. Immediately prior to the commencement of the work in this section.
   2. Completion of first 90 days of maintenance.
   3. Final acceptance.

1.6 FINAL ACCEPTANCE OF THE PROJECT

A. Prior to the date of the final observation visit, the Contractor shall acquire from the Architect-approved reproducible Plans and record (from the job record set) all changes made during construction, label these Plans "Record Drawings" and deliver to the Architect for review and approval.

B. Prior to the date of final inspection, the Contractor shall deliver to the Architect a written "Landscape and Irrigation Guarantee" as required herein.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All materials used shall either conform to landscape specifications in other sections or shall otherwise be acceptable to the Owner.

B. If requested by the Owner, the Owner shall be given a monthly record of all herbicides, insecticides, and disease control chemicals used. Failure to provide such a requested record will continue maintenance period until compliance occurs.

PART 3 - EXECUTION

3.1 MAINTENANCE

A. Maintenance shall be performed according to the following standards:
   1. All areas shall be weeded and cultivated at intervals of not more than ten (10) days.
   2. Watering, edging, trimming, fertilization, spraying, and pest control, as may be required, shall be included in the maintenance period.
   3. Passive irrigation systems and planter reservoirs are to be checked and filled with water, if necessary.
   4. Cleaning of adjacent street gutters shall be included as part of maintenance.
   5. The Contractor shall be responsible for maintaining adequate protection of the area.
      a. Damaged areas shall be repaired at the Contractor's expense.

B. The Contractor shall be responsible for reporting to the Owner any conditions beyond his control that prevent or have negative impact on the work required herein.

3.2 TREE AND SHRUB CARE

A. Watering
   1. Apply enough irrigation water so that moisture penetrates throughout root zone and only as frequently as necessary to maintain healthy growth.
      a. It is not necessary to maintain soils in a constantly wet condition.
      b. Contractor shall be responsible for familiarizing himself with the particular water requirements for the various plantings and shall be responsible for setting and maintaining the automatic controller to optimum minimum levels.
      c. Any damage to the plantings caused by over-watering or under-watering shall be the responsibility of the Contractor to replace at no cost to Owner.
   2. Maintain a water basin around newly planted plants so that water can be applied to moisturize throughout the root zone. At the end of the maintenance period these basins shall be flattened out to match surrounding grades.
   3. If hand-watering, use a fan spray nozzle to break the water force.

B. Staking and Guying: Stakes and guys shall remain in place until final acceptance and are to be continuously inspected and adjusted to prevent girdling of trunks or branches and to prevent rubbing that causes bark wounds and to allow trees to sway freely. Stakes and guys are to be removed when trees become sufficiently well rooted or after one year. When stakes or guys are removed, tree heads may be thinned to reduce wind load.

C. Weed Control: Keep all areas, including basins and areas between plants, free of weeds.
   1. Use recommended legally approved herbicides only when mechanical removal methods are not feasible.
   2. Avoid frequent soil cultivation next to trees or shrubs that destroys shallow roots.
   3. Use mulches to help prevent weed seed germination.

D. Insect and Disease Control: Maintain control of insect infestations. The preferred method of control shall be biological control, or with non-toxic, biodegradable, organic materials. If stronger materials are needed, only materials that are recommended by a licensed Pest Control Advisor and are EPA approved and regulated shall be used. Only registered and licensed Pest Control Operators shall apply insecticide or chemical applications. Notify Owner a minimum of five (5) working days before any chemical applications.

E. Fertilization
   1. Fertilize all planting areas as follows:
      a. Commencement of maintenance period - 10 lbs./1,000 sq. ft. with GroPower Plus.
      b. At the end of the first 30-day maintenance period - 5 lbs./1000 sq. ft. with GroPower Plus.
      c. At the end of the maintenance period and at 30-day intervals should maintenance period be extended - 10 lbs./1000 sq. ft. with GroPower Plus.
      d. Avoid applying fertilizer to root balls and bases of main stems; rather, spread fertilizer evenly around plants to drip line. Distribute fertilizer evenly over turf or groundcover areas to avoid patchy coloration.

F. Replacement of Plants: Replace dead, dying, and missing plants with plants of a size, condition, and variety acceptable to Architect or Owner at Contractor's expense.

3.3 GROUND COVER CARE

A. Weed Control: Control weeds preferably with mechanical methods, and also with preemergent herbicides and selective systemic herbicides. Hoe weeds as little as possible since this may result in plant damage. Foot traffic in planted areas shall be minimized, and any soil compaction shall be loosened immediately.

B. Watering: Water enough so that moisture penetrates throughout root zone and only as frequently as necessary to maintain healthy growth.
   1. It is not necessary to maintain soils in a constantly wet condition.
   2. Contractor shall familiarize himself with the particular water requirements for the planting and shall be responsible for setting and maintaining the automatic controller to optimum minimum levels.
   3. Any damage to the planting caused by over-watering or under-watering shall be the responsibility of the Contractor to replace.

C. Trash: Remove trash weekly. Remove any debris, clippings or branches produced by maintenance activities within 8 hours.

D. Edging and Trimming: Edge ground cover to keep in bounds and trim top growth as necessary to achieve an overall even appearance.

E. Replacement: Replace dead and missing plants at Contractor's expense.

3.4 IRRIGATION SYSTEM

A. System Inspection: Contractor shall continuously check all systems for proper operation. Lateral lines shall be flushed out after removing the last sprinkler head or two at each of the lateral. All heads are to be continuously adjusted as necessary for proper coverage and to eliminate over-spray on buildings or paving. Contractors regular maintenance personnel shall test, observe, and adjust each sprinkler system no less than once per month.

B. Controllers: Set and program automatic controllers for seasonal water requirements and minimum optimum water use. Give Owner a key to controllers and instructions on how to turn off system in case of emergency.

C. Repairs: Repair all damage to irrigation system at Contractor's expense. Repairs shall be made within one watering period.

END OF SECTION

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REGISTERED LANDSCAPE ARCHITECT
RICHARD W. MAYER No. 2517
Signature
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LA HABRA LANDFILL
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APPROVED BY :	RM/JM	DATE :	70 OF 89

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AG	ABOVE GRADE
A,AMP	AMPERE
A/V	AUDIO/VISUAL
AWG	AMERICAN WIRE GAUGE
CATV	COMMUNITY ACCESS TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CEC	CALIFORNIA ELECTRICAL CODE
CKT	CIRCUIT
CLG	CEILING
COMM	COMMUNICATIONS
C	CONDUIT
CO	CONDUIT ONLY
CTRL	CONTROL
CU	COPPER
D	DATA, DEDICATED
DIST	DISTRIBUTION
EG	EQUIPMENT GROUND
EX,EXIST.	EXISTING
EP	EXPLOSION PROOF
FA	FIRE ALARM
FMC	FLEXIBLE METAL CONDUIT
FO	FIBER OPTIC(AL)
G,GND	GROUND
GD	GARBAGE DISPOSAL
GFI,GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
HP	HORSEPOWER
J-BOX	JUNCTION BOX
LTG	LIGHTING
MCC	MOTOR CONTROL CENTER
MDF	MAIN DISTRIBUTION FRAME/FACILITY
MTD	MOUNTED
MW	MICROWAVE
N	NEUTRAL
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
PB	PULLBOX
PH	PHASE
PNL	PANEL, PANELBOARD
POC	POINT OF CONNECTION
RECEPT	RECEPTACLE
RO	RACEWAY ONLY
SM	SINGLE MODE
SWBD	SWITCHBOARD
TELECOM	TELECOMMUNICATIONS
TV	TELEVISION
TYP	TYPICAL
UG	UNDER GROUND
UON	UNLESS OTHERWISE NOTED
V	VOLT OR VOICE
W	WIRE, WATT, WALLPHONE

ABBREVIATIONS

WAP	WIRELESS ACCESS POINT
WP	WEATHERPROOF
XFMR	TRANSFORMER
Ø	PHASE
X	EXISTING TO REMAIN
XL	EXISTING TO BE RELOCATED
XN	NEW LOCATION OF RELOCATED EQUIPMENT
XR	EXISTING TO BE REMOVED

WORK DEFINITION

- (1) KEYNOTE
- (1) DRAWING REVISION
- HEAVY LINEWORK INDICATES NEW WORK
- LIGHT LINEWORK INDICATES EXISTING TO REMAIN
- G — GROUND WIRE
- T — TELECOMMUNICATIONS SYSTEM RACEWAY
- SL — SITE LIGHTING
- OH — OVERHEAD POWER
- FO — FIBER OPTIC
- UG — CONDUIT: ROUTED UNDERGROUND
- CONDUIT: ROUTED BELOW FINISHED FLOOR LEVEL
- CROSS HATCHING INDICATES EXISTING DEVICE OR RACEWAY TO BE REMOVED - MAINTAIN CIRCUIT CONTINUITY
- CONDUIT UP
- CONDUIT DOWN
- CONDUIT/CABLE CAP
- CONDUIT/CABLE CONTINUATION
- FLEXIBLE CONDUIT
- A-2 HOME RUN
  - RACEWAY MARKINGS INDICATES NUMBER OF CONDUCTORS
  - LETTER INDICATES PANEL
  - NUMBER(S) INDICATE CIRCUIT
- RACEWAY MARKING INDICATES QUANTITY OF CONDUCTORS IN CONDUIT
  - SMALL HASH MARKS INDICATE PHASE (HOT) CONDUCTOR
  - LARGER HASH MARK INDICATES NEUTRAL CONDUCTOR
  - DOT INDICATES GROUND CONDUCTOR
  - DOT WITH HASH INDICATES ISOLATED GROUND CONDUCTOR

  ALL UNMARKED CONDUIT RUNS ARE 1/2" CONDUIT WITH 2#12 UNLESS NOTED OTHERWISE. ALL CIRCUITS SHALL BE PROVIDED WITH GREEN EQUIPMENT GROUND CONDUCTOR

RISER DIAGRAM

- XXX / XXX / XXX — PANELBOARD
- DELTA
- WYE
- OPEN DELTA
- 200/5 — 3 — CURRENT TRANSFORMER: QUANTITY AND RATIO AS INDICATED
- 480V — 120V — 3 — POTENTIAL TRANSFORMER: QUANTITY AND VOLTAVE RATING AS INDICATED
- 3-SA — 3-SURGE ARRESTORS
- LIGHTNING ARRESTOR
- DISCONNECT SWITCH: 3-POLE UNLESS NOTED OTHERWISE- OVERCURRENT PROTECTION AS REQUIRED BY EQUIPMENT MANUFACTURER OR AS NOTED
- FUSED DISCONNECT SWITCH: 3-POLE UNLESS NOTED OTHERWISE- OVERCURRENT PROTECTION AS REQUIRED BY EQUIPMENT MANUFACTURER OR AS NOTED
- AUTOMATIC TRANSFER SWITCH (A.T.S)
- DRAWOUT AC TYPE CIRCUIT BREAKER (600V)
- 30A/3P — ST — CIRCUIT BREAKER NUMBER INDICATES TRIP SETTING AND NUMBER OF POLES CL - CURRENT LIMITING ST - SHUNT TRIP
- 30A/3P (G) — CIRCUIT BREAKER WITH GROUND FAULT PROTECTION NUMBER INDICATES TRIP SETTING AND NUMBER OF POLES CL - CURRENT LIMITING
- 30A/3P (M) — MOTOR OPERATED CIRCUIT BREAKER NUMBER INDICATES TRIP SETTING AND NUMBER OF POLES
- (ST G) — GENERATOR ST - INDICATES SHUNT TRIP
- GROUND CONNECTION
- CABLE TO BUS CONNECTION
- 30A — FUSE WITH RATING
- (M) — INDICATING INSTRUMENT M - SELF ENCLOSED PM - KILOWATT HOUR DEMAND METER
- SPLICE
- GROUND ROD
- (M) — METER WITH CT PROVISIONS
- XXXX — FEEDER TAG
- SPD — SURGE PROTECTION DEVICE
- TRANSFORMER

LIGHTING

- (A) — LIGHTING FIXTURE TYPE TAG - REFER TO LUMINAIRE SCHEDULE FOR TYPE
- 6a — LIGHTING FIXTURE:
  - NUMBER INDICATES CIRCUIT GROUPING.
  - LOWERCASE LETTER INDICATES CONTROL ZONE IDENTIFICATION.
  - SHADED FIXTURE INDICATES EMERGENCY SOURCE.
- 4' SURFACE MOUNTED LINEAR FIXTURE - TYPE AS NOTED
- RECESSED MOUNTED LIGHTING FIXTURE - TYPE AS NOTED
- DIRECTIONAL LIGHTING FIXTURE - TYPE AS NOTED
- WALL MOUNTED LUMINAIRE
- EXIT SIGN - ARROW INDICATES DIRECTION OF EGRESS, SHADING INDICATES FACE DIRECTION(S)
- UNDER CABINET OR TAPE LIGHT
- ARCHITECTURAL PENDANT LIGHT FIXTURE, TYPE AS NOTED
- ACCENT OR TRACK MOUNTED LIGHTING, TYPE AS NOTED
- TRACK LIGHT - NUMBER OF HEADS AS INDICATED, TYPE AS NOTED
- POLE-MOUNTED LIGHTING FIXTURE, TYPE AS NOTED
- EXTERIOR STEP LIGHTING FIXTURE, TYPE AS NOTED
- EXTERIOR LANDSCAPE FIXTURE, TYPE AS NOTED
- EXTERIOR DIRECTIONAL LANDSCAPE FIXTURE, TYPE AS NOTED
- PS PS WP — LOW VOLTAGE POWER SUPPLY
- (J) — JUNCTION BOX, CEILING OR OVERHEAD MOUNTED
- (J) — JUNCTION BOX, WALL MOUNTED

LIGHTING CONTROL DEVICES

- ab abc / S1 S2 S3 — LOW VOLTAGE WALL CONTROLLER:
  - NUMBER DENOTES QUANTITY OF CONTROLLED ZONES
  - LETTER DENOTES ZONE
- HMS[a] — LINE VOLTAGE WALL MOTION SWITCH
- $[a] — SINGLE-POLE WALL SWITCH:
  - LOWER CASE LETTER INDICATES SWITCH LEG
- $[X] — WALL SWITCH - TEXT INDICATES:
  - 2 - DOUBLE-POLE
  - 3 - THREE-WAY
  - 4 - FOUR-WAY
  - D - DIMMER (0-10V ELECTRONIC TO BE COORDINATED WITH FIXTURE DRIVER)
  - EP - EXPLOSION-PROOF
  - K - KEY-OPERATED
  - LV - LOW-VOLTAGE
  - O - OCCUPANCY SENSING
  - T - TIMER
  - WP - WEATHERPROOF
- $[a,b,c] — INDICATES MULTIPLE SWITCHES IN GANGED BOX WITH COMMON COVERPLATE. a,b,c INDICATES NUMBER OF INDIVIDUAL SWITCHES AND FIXTURES CONTROL.
- $[a] $[b] — INDICATES SWITCHES a,b MOUNTED IN SEPARATE BOXES WITH SEPARATE COVERPLATES
- HCS — LIGHTING CONTROL STATION
- OS — CEILING MOUNTED OCCUPANCY SENSOR
- DS — DAYLIGHT SENSOR
- P — PARTITION SENSOR
- HTC — TIME CLOCK

ELECTRICAL EQUIPMENT

- FLUSH MOUNTED PANELBOARD
- SURFACE MOUNTED PANELBOARD
- 480V PANELBOARD - SEE PANEL SCHEDULE
- 208V OR 240V PANELBOARD - SEE PANEL SCHEDULE
- EQUIPMENT CABINET - TYPE AS INDICATED
- MOTOR CONNECTION
- EQUIPMENT CONNECTION
- GROUND BAR
- (J) — JUNCTION BOX
- PB — PULLBOX
- HH HH-1 — HANDHOLE WITH DESIGNATION
- MH MH-1 — MANHOLE WITH DESIGNATION
- T — TRANSFORMER
- $[M] — MOTOR RATED TOGGLE SWITCH (POLES TO MATCH VOLTAGE PHASE REQUIREMENTS)
- COMBINATION STARTER: HP RATED,3-POLE, NEMA SIZE 1 MINIMUM UNLESS NOTED OTHERWISE - OVERCURRENT PROTECTION AS REQUIRED BY EQUIPMENT MANUFACTURER OR AS NOTED
- DISCONNECT SWITCH: 3-POLE UNLESS NOTED OTHERWISE- OVERCURRENT PROTECTION AS REQUIRED BY EQUIPMENT MANUFACTURER OR AS NOTED

POWER

- 2 G — RECEPTACLE OUTLET:
  - NUMBER INDICATES CIRCUIT GROUPING
  - LETTER INDICATES:
  - AC - ABOVE COUNTER
  - C - CLOCK HANGER
  - D - DEDICATED
  - EP - EXPLOSION PROOF
  - G - WITH GFCI PROTECTION
  - IG - ISOLATED GROUND
  - S - SAFETY TYPE
  - T - TAMPER PROOF
  - WP - WEATHERPROOF WITH GFCI
- GROUNDING TYPE DUPLEX RECEPTACLE, 125V, 20A
- GROUNDING TYPE DOUBLE-DUPLEX RECEPTACLE, 125V, 20A
- GROUNDING TYPE SINGLE RECEPTACLE, 125V, 20A
- GROUNDING TYPE DUPLEX RECEPTACLE, 125V, 20A
- EMERGENCY GROUNDING TYPE DUPLEX RECEPTACLE, 125V, 20A
- CEILING MOUNTED DUPLEX RECEPTACLE, 125V, 20A
- EMERGENCY CEILING MOUNTED DUPLEX RECEPTACLE, 125V, 20A
- SPLIT WIRED GROUNDING TYPE DUPLEX RECEPTACLE, 125V, 20A
- A SPECIAL PURPOSE RECEPTACLE - LETTER INDICATES TYPE
- A SPECIAL PURPOSE RECEPTACLE CEILING MOUNTED - LETTER INDICATES TYPE
- G — GFCI WEATHERPROOF 20" PEDESTAL WITH LOCKABLE COVER ON CONCRETE BASE. PROVIDE WIREMOLD #XPP1G30C-BK, OR APPROVED EQUAL

Sheet List Table

Sheet Number	Sheet Title
E-000	SYMBOLS AND ABBREVIATION
E-001	LUMINAIRE SCHEDULE
E-002	TITLE 24 - EXTERIOR
E-003	TITLE 24 - EXTERIOR
E-101	OVERALL SITE PLAN
E-102	ENLARGED SITE PLAN - NORTH
E-103	ENLARGED SITE PLAN - SOUTH
E-201	ENLARGED NEW ELECTRICAL PLANS
E-301	SINGLE LINE DIAGRAM & PANEL SCHEDULES
E-401	GROUNDING RISER DIAGRAM
E-402	DETAILS
E-403	DETAILS

BID SET - NOT FOR CONSTRUCTION

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NO.	REVISION DESCRIPTION	BY:
1	BID SET - NOT FOR CONSTRUCTION 6-15-2023	PVB

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REGISTERED PROFESSIONAL ENGINEER — JOSEPH SCOTT DENIS JR — 19041 — exp.3/31/2024 — ELECTRICAL — STATE OF CALIFORNIA

PLOT DATE: 07/13/2022

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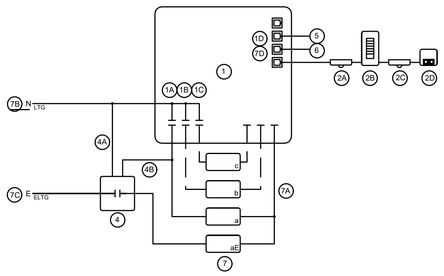
CITY OF LA HABRA - VISTA GRANDE PARK

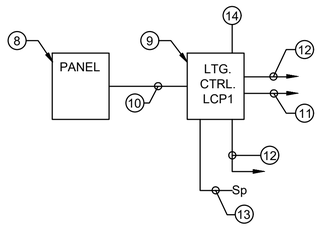
VISTA GRANDE PARK

SYMBOLS AND ABBREVIATION

DESIGNED BY :	HS		
DRAWN BY :	HS	DATE : 07-13-2022	SCALE: AS SHOWN
CHECKED BY :	AL	DATE :	E-000
APPROVED BY :	JSD	DATE :	SHEET 71 OF 89

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LIGHTING CONTROL KEYNOTES

1. LOCAL ZONE CONTROLLER
1A. RELAY QUANTITY PER DEVICE VARIES BY MANUFACTURER. REFER TO MANUFACTURERS REQUIREMENTS.
1B. TOTAL LOAD PER RELAY IS NOT TO EXCEDED MAXIUMUM REQUIREMENTS AS PER MANUFACTURER'S DOCUMENTATION.
1C. MANUFACTURER TO PROVIDE ADDITIONAL DEVICES AS REQUIRED WHERE BOTH 120V AND 277V ARE UTILIZED IN THE SAME SPACE, WHERE THE QUANTITY OF RELAYS REQUIRED EXCEEDS THE QUANTITY AVAILABLE PER DEVICE OR OTHERWISE AS PER DIRECTION OF THE MANUFACTURER.
1D. NETWORK TERMINATIONS EITHER RJ-45 OR TERMINAL BLOCK. REFER TO MANUFACTURERS DOCUMENTATION FOR REQUIREMENTS.
2. LOW VOLTAGE I/O DEVICES
2A. OCCUPANCY / VACANCY SENSOR
2B. WALL STATION(S) - [FOR REVIEW] SWITCH NUMBER ON PLAN INDICATES TOTAL QUANTITY OF ZONES CONTROLLED. PROVIDE QUANTITY OF PUSH BUTTONS TO SEPARATELY RAISE / LOWER EACH ZONE AS WELL AS ONE ON/OFF. IE A (3) ZONE ROOM WILL REQUIRE A TOTAL OF 5 BUTTONS.
2C. PHOTOCELL - OPEN OR CLOSED LOOP PER MANUFACTURERS REQUIREMENTS. I/O DEVICE (DEMAND CONTROL VENTILATION)
2D. INDICATES RECEPTACLE CONTROL VIA 120V NORMAL POWER. REFER TO PLANS FOR CIRCUIT REQUIREMENTS.
3. NOT USED
4A. NORMAL POWER SENSING.
4B. NORMAL POWER SWITCHED SENSING.
5. TO ADDITIONAL ZONE CONTROLLERS, NETWORK CONTROLLERS, BRIDGES OR OTHER NETWORK INFRASTRUCTURE DEVICE. REFER TO MANUFACTURERS DOCUMENTATION FOR LIMITATIONS ON CONNECTED DEVICES PER BUS.
6. FOR FUTURE CONNECTION TO UTILITY DEMAND RESPONSE AS REQUIRED. INTERPORATING DEVICE (OPEN ADR) OR BMS INTEGRATION VARIES BY MANUFACTURER. HOMERUN LOW VOLTAGE WIRING IN 1"C TO MAIN ELEC ROOM PULLBOX DESIGNATED FOR FUTURE DEMAND RESPONSE CONNECTION TO UTILITY. REFER TO BOD FOR SCOPE. INCLUDE ALL REQUIRED STARTUP AND PROGRAMMING.
7. WIRING
7A. LOW VOLTAGE 0-10V DIMMING WIRING. (2)#18 AWG PER ZONE AS ILLUSTRATED. INDICATES LIGHTING NORMAL POWER LINE VOLTAGE PER SPECIFICATIONS.
7B. NEUTRAL WIRES NOT SHOWN. PROVIDE PER MANUFACTURERS REQUIREMENTS. INDICATES LIGHTING EMERGENCY POWER LINE VOLTAGE PER SPECIFICATIONS.
7C. NEUTRAL WIRES NOT SHOWN. PROVIDE PER MANUFACTURERS REQUIREMENTS. CONTROL DEVICE NETWORK TOPOLOGY ILLUSTRATED AS HYBRID STAR TYPE.
7D. REFER TO MANUFACTURER FOR NETWORK TOPOLOGY AND WIRING REQUIREMENTS.
8. DENOTES ELECTRICAL PANEL PER PLANS. SEE SINGLELINE DIAGRAM FOR MORE INFORMATION.
9. NEW (12) INPUT LIGHTING CONTROL PANEL LCP1.
10. DENOTES LIGHTING CIRCUITS INTERCEPTED BY LIGHTING CONTROL PANEL PER PLANS.
11. DENOTES CIRCUIT 120V 20A INPUT POWER TO LIGHTING CONTROL PANEL.
12. DENOTES LIGHTING BRANCH CIRCUIT(S) ROUTED TO LIGHTING FIXTURES. REFER TO LCP1 LIGHTING CONTROL SCHEDULES ON THIS SHEET.
13. 2-HOUR OVERRIDE SWITCH. VERIFY FINAL TERMINATIONS TO LIGHTING CONTROL PANEL LCP1.
13. PROVIDE INTEGRAL PHOTOCELL WITH LIGHTING CONTROL PANEL TO ROOF.

NOTE: PROVIDE nLIGHT OR EQUAL NETWORKED LIGHTING CONTROL SYSTEM TO COMPLY WITH THE LATEST ASHRAE 90.1.

2 LIGHTING CONTROL DETAILS
SCALE: N/A

RELAY SCHEDULE 'LCP-2'

RELAY	PANEL	CIRCUIT	VOLTS	ZONE	NOTES	CONTROLS
R1	P1	2	120	Z2A	EXT. LIGHTING - AMPHITHEATER/PLAY AREA	TIMECLOCK OFF/ON
R2	P1	4	120	Z2B	EXT. LIGHTING - WEST/SOUTHWEST PATHWAY	TIMECLOCK OFF/ON
R3	P1	5	120	Z2C	EXT. LIGHTING - WEST PARKING LOT	TIMECLOCK OFF/ON
R4	P1	6	120	Z2D	EXT. LIGHTING - NORTHWEST PARKING LOT/PATH	TIMECLOCK OFF/ON
R5	P1	7	120	Z2E	EXT. LIGHTING - NORTHWEST PATHWAY	TIMECLOCK OFF/ON
R6	P1	8	120	Z2F	EXT. LIGHTING - GAZEBO/NORTH PATH	TIMECLOCK OFF/ON
R7	P1	9	120	Z2G	EXT. LIGHTING - NORTH PATHWAY	TIMECLOCK OFF/ON

RELAY SCHEDULE 'LCP-1'

RELAY	PANEL	CIRCUIT	VOLTS	ZONE	NOTES	CONTROLS
R1	MSB	3	120	Z1A	EXT. LIGHTING - FOOD TRUCK AREA/RESTROOMS	TIMECLOCK OFF/ON
R2	MSB	5	120	Z1B	EXT. LIGHTING - ENTRANCE/SOUTHEAST PATHWAY	TIMECLOCK OFF/ON
R3	MSB	7	120	Z1C	EXT. LIGHTING - SOUTHWEST PARKING LOT	TIMECLOCK OFF/ON
R4	MSB	8	120	Z1D	EXT. LIGHTING - EAST PATHWAY	TIMECLOCK OFF/ON
R5	MSB	9	120	Z1E	EXT. LIGHTING - ENTRANCE/SOUTHWEST PARKING LOT	TIMECLOCK OFF/ON
R6	MSB	10	120	Z1F	EXT. LIGHTING - EAST PATHWAY	TIMECLOCK OFF/ON
R7	MSB	11	120	Z1G	EXT. LIGHTING - NORTHEAST PARKING LOT	TIMECLOCK OFF/ON
R8	MSB	12	120	Z1H	EXT. LIGHTING - NORTHEAST STAIRS/DOG PARKS	TIMECLOCK OFF/ON
R9	MSB	13	120	Z1I	EXT. LIGHTING - GAZEBO/NORTHEAST PATH	TIMECLOCK OFF/ON

4 LUMINAIRE CONTROL RELAY SCHEDULES
SCALE: N/A

EXTERIOR LIGHTING	ELECTRICAL ROOM
LIGHTS MUST TURN ON AT DUSK, OR WHEN LIGHT LEVELS HAVE DROPPED BELOW 10 FC AS MEASURED BY THE PHOTOELECTRIC SENSOR. AUTOMATICALLY REDUCE LIGHTING BY A MINIMUM OF 30% FROM 12 MIDNIGHT OR WITHIN 1 HOUR OF CLOSING, WHICHEVER IS LATER, UNTIL 6 AM OR NORMAL OPENING. LIGHTS MUST TURN OFF WHEN LIGHT LEVELS INCREASE TO 10 FC OR MORE AS MEASURED BY THE PHOTOELECTRIC SENSOR.	• MANUAL ON, MANUAL OFF LIGHTING OPERATION NOTES: NO AUTOMATIC SHUTOFF IN ELECTRIC ROOMS.

3 LIGHTING CONTROL SEQUENCE OF OPERATIONS
SCALE: N/A

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	MODEL	LUMEN	CCT	CRI (MIN)	VOLTAGE	WATTAGE	POWER SUPPLY	DIMMING	MOUNTING	NOTES
S1A	D-SERIES SIZE 1 LED AREA LUMINAIRE, P5 OPTICS, 3000K, TYPE 2 MEDIUM DISTRIBUTION, MVOLT, PARKING LOT LIGHTS, S1-POLE MOUNTED AT 25' ABOVE GRADE.	LITHONIA LIGHTING OR EQUAL APPROVED	DSX1 LED.P5.30K.T2M.MVOLT [MOUNTING].PIRH1FC3V. FA0.[OPTIONS].DDBXD	14,739	3000K	80	120	138	INTEGRAL DRIVER / POWER SUPPLY	0-10V	POLE	PROVIDE ALL MOUNTING OPTIONS AND ACCESSORIES AS REQUIRED FOR A CODE COMPLIANT INSTALLATION.
S1B	D-SERIES SIZE 1 LED AREA LUMINAIRE, P5 OPTICS, 3000K, TYPE 5 WIDE DISTRIBUTION, MVOLT, PARKING LOT LIGHTS, S1-POLE MOUNTED AT 25' ABOVE GRADE.	LITHONIA LIGHTING OR EQUAL APPROVED	DSX1 LED.P5.30K.T5W.MVOLT [MOUNTING].PIRH1FC3V. FA0.[OPTIONS].DDBXD	15,157	3000K	80	120	138	INTEGRAL DRIVER / POWER SUPPLY	0-10V	POLE	PROVIDE ALL MOUNTING OPTIONS AND ACCESSORIES AS REQUIRED FOR A CODE COMPLIANT INSTALLATION.
S1-POLE	STEEL POLE, SQUARE CROSS SECTION, STANDARD FINISH, SIDE MOUNTED FIXTURES, CORROSION PROTECTION.	LITHONIA LIGHTING OR EQUAL APPROVED	STS	-	-	-	-	-	-	-	-	PROVIDE ALL MOUNTING OPTIONS AND ACCESSORIES AS REQUIRED FOR A CODE COMPLIANT INSTALLATION. CONFIRM FINISH WITH ARCHITECT.
S2A	D-SERIES SIZE 0 LED AREA LUMINAIRE, P4 OPTICS, 3000K, TYPE 2 MEDIUM DISTRIBUTION, MVOLT, PEDESTRIAN LIGHTS, S2-POLE MOUNTED AT 13'6" ABOVE GRADE.	LITHONIA LIGHTING OR EQUAL APPROVED	DSX0 LED.P4.30K.T2M.MVOLT [MOUNTING].PIR1FC3V. FA0.[OPTIONS].DDBXD	9,831	3000K	80	120	92	INTEGRAL DRIVER / POWER SUPPLY	0-10V	POLE	PROVIDE ALL MOUNTING OPTIONS AND ACCESSORIES AS REQUIRED FOR A CODE COMPLIANT INSTALLATION.
S2B	D-SERIES SIZE 0 LED AREA LUMINAIRE, P4 OPTICS, 3000K, TYPE 5 WIDE DISTRIBUTION, MVOLT, PEDESTRIAN LIGHTS, S2-POLE MOUNTED AT 13'6" ABOVE GRADE.	LITHONIA LIGHTING OR EQUAL APPROVED	DSX0 LED.P4.30K.T5W.MVOLT [MOUNTING].PIR1FC3V. FA0.[OPTIONS].DDBXD	10,254	3000K	80	120	92	INTEGRAL DRIVER / POWER SUPPLY	0-10V	POLE	PROVIDE ALL MOUNTING OPTIONS AND ACCESSORIES AS REQUIRED FOR A CODE COMPLIANT INSTALLATION.
S2-POLE	STEEL POLE, SQUARE CROSS SECTION, STANDARD FINISH, SIDE MOUNTED FIXTURES, CORROSION PROTECTION.	LITHONIA LIGHTING OR EQUAL APPROVED	STS	-	-	-	-	-	-	-	-	PROVIDE ALL MOUNTING OPTIONS AND ACCESSORIES AS REQUIRED FOR A CODE COMPLIANT INSTALLATION. CONFIRM FINISH WITH ARCHITECT.

GENERAL NOTES:
1. VERIFY AND CONFIRM MOUNTING CONDITIONS AND SUITABILITY OF SPECIFIED PRODUCT PRIOR TO ORDERING FIXTURES.
2. VERIFY ALL FIXTURE LENGTHS PRIOR TO ORDERING FIXTURES.
3. VERIFY ALL VOLTAGES PRIOR TO ORDERING FIXTURES.
4. CONFIRM COMPATIBILITY OF DIMMERS WITH FIXTURES.
5. LIGHTING FIXTURES CONNECTED TO AN EMERGENCY POWER SYSTEM (STORAGE BATTERIES, UNIT EQUIPMENT, ETC.) SHALL AUTOMATICALLY ILLUMINATE THE MEANS OF EGRESS FOR A DURATION OF NOT LESS THAN 90 MINUTES.
6. COORDINATE ALL FINISHES WITH ARCHITECT DURING SUBMITTAL PHASE.
7. FIXTURE SPECIFIED IS BASIS OF DESIGN, CONTRACTOR MAY PROVIDE APPROVED EQUAL PROVIDED ALL REQUIREMENTS ARE MET.

1 LUMINAIRE SCHEDULE
SCALE: N/A

BID SET - NOT FOR CONSTRUCTION

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NO.	REVISION DESCRIPTION	BY:
1	BID SET - NOT FOR CONSTRUCTION 6-15-2023	PVB

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REGISTERED PROFESSIONAL ENGINEER — JOSEPH SCOTT DENIS JR — 19041 — exp.3/31/2024 — ELECTRICAL — STATE OF CALIFORNIA

PLOT DATE: 07/13/2022

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CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

LUMINAIRE SCHEDULE

DESIGNED BY :	HS		
DRAWN BY :	HS	DATE : 07-13-2022	SCALE: AS SHOWN
CHECKED BY :	AL	DATE :	E-001
APPROVED BY :	JSD	DATE :	SHEET 72 OF 89

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STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Vista Grande Park	Report Page:	(Page 1 of 10)
Project Address:		Date Prepared:	6/1/2022

A. GENERAL INFORMATION

01	Project Location (city)	La Habra	04	Total Illuminated Hardscape Area (ft²)	97362
02	Climate Zone	8			
03	Outdoor Lighting Zone per Title 24 Part 1 §10.114 or as designated by Authority Having Jurisdiction (AHJ):				

☐ LZ-0: Very Low - Undeveloped Parkland ☐ LZ-2: Moderate - Rural Areas ☐ LZ-4: High - Must be reviewed by CA Energy Commission for Approval
☐ LZ-1: Low - Developed Parkland ☒ LZ-3: Moderately High - Urban Areas

B. PROJECT SCOPE

This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.7 or §141.0(b)2L for alterations.

My Project Consists of:

01		02
☒	New Lighting System	Must Comply with Allowances from §140.7
☐	Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)? ◯ Yes ◯ No

03	04	05
% of Existing Luminaires Being Altered[1]	Sum Total of Luminaires Being Added or Altered	Calculation Method
☐ < 10% ☐ >= 10% and < 50% ☐ >= 50%		

Please proceed to Table F. Outdoor Lighting Fixture Schedule to define the project's luminaires.

[1] FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-06-01 13:45:38

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Vista Grande Park	Report Page:	(Page 2 of 10)
Project Address:		Date Prepared:	6/1/2022

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through I. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

Calculations of Total Allowed Lighting Power (Watts) §140.7 or §141.0(b)2L											Compliance Results			
01		02		03		04		05	OR	06		07		08	09
General Hardscape Allowance §140.7(d)1 (See Table I)	+	Per Application §140.7(d)2 (See Table J)	+	Sales Frontage §140.7(d)2 (See Table K)	+	Ornamental §140.7(d)2 (See Table L)	+	Per Specific Area §140.7(d)2 (See Table M)	OR	Existing Power Allowance §141.0(b)2L (See Table N)	=	**Total Allowed** (Watts)	≥	**Total Actual** (Watts)	**07 must be >= 08**
6,022.32	+	---	+	---	+	---	+	---	OR	---	=	6,022.32	≥	5,980	COMPLIES
Cutoff Compliance (See Table G for Details)															N/A
Controls Compliance (See Table H for Details)															COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-06-01 13:45:38

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Vista Grande Park	Report Page:	(Page 3 of 10)
Project Address:		Date Prepared:	6/1/2022

F. OUTDOOR LIGHTING FIXTURE SCHEDULE

For new or altered lighting systems demonstrating compliance with §140.7 all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per §141.0(b)2L only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, existing luminaires remaining or existing luminaires being moved are not included).

Designed Wattage:

01	02		03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description		Watts per luminaire[1, 2]	How is Wattage determined	Total number luminaires[2]	Luminaire Status[3]	Excluded per §140.7(a)	Design Watts	Cutoff Req. > 6,200 initial lumen output §130.2(b)[4]	Field Inspector	
										Pass	Fail
S1A	S1A - DSX1 T2M LED AREA LUMINAIRE SIZE 1	☐ Linear	138	Mfr. Spec	2	New	☐	276	NA: < 6200 lumens	☐	☐
S1B	S1B - DSX1 T5W LED AREA LUMINAIRE SIZE 1	☐ Linear	138	Mfr. Spec	20	New	☐	2,760	NA: < 6200 lumens	☐	☐
S2A	S2A - DSX0 T2M LED AREA LUMINAIRE SIZE 0	☐ Linear	92	Mfr. Spec	2	New	☐	184	NA: < 6200 lumens	☐	☐
S2B	S2B - DSX0 T5W LED AREA LUMINAIRE SIZE 0	☐ Linear	92	Mfr. Spec	30	New	☐	2,760	NA: < 6200 lumens	☐	☐
							Total Design Watts:	5980			

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to §130.2(b)

[1] FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)
[2] For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.
[3] Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.
[4] Compliance with mandatory cutoff requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by §130.2(b)

G. CUTOFF REQUIREMENTS (BUG)

This section does not apply to this project.

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
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STATE OF CALIFORNIA
Outdoor Lighting
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CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Vista Grande Park	Report Page:	(Page 4 of 10)
Project Address:		Date Prepared:	6/1/2022

H. OUTDOOR LIGHTING CONTROLS

This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
*When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Mandatory Controls

01	02	03	04	05	
Area Description	Shut-Off §130.2(c)1	Auto-Schedule §130.2(c)2	Motion Sensor §130.2(c)3	Field Inspector	
				Pass	Fail

** NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.*
EX: Not permitted by health & safety to be turned off; EXCEPTION 1 to §130.2(c)

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
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STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Vista Grande Park	Report Page:	(Page 5 of 10)
Project Address:		Date Prepared:	6/1/2022

I. LIGHTING POWER ALLOWANCE (per §140.7)

This table includes areas using allowance calculations per §140.7. General Hardscape Allowance is per Table 140.7-A while "Use it or lose it" Allowances are per Table 140.7-B . Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance.

	01				
	☒ General Hardscape Allowance Table I (below)	"Use it or lose it" Allowance (select all that apply) (select all that apply)			
		☐ Per Application Table J	☐ Sales Frontage Table K	☐ Ornamental Table L	☐ Per Specific Area Table M
Calculated General Hardscape Lighting Power Allowance per Table 140.7-A (LZ 0, 1 & 4)					
This section does not apply to this project.					

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2022-06-01 13:45:38

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Outdoor Lighting
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CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Vista Grande Park	Report Page:	(Page 6 of 10)
Project Address:		Date Prepared:	6/1/2022

I. LIGHTING POWER ALLOWANCE (per §140.7)

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A (LZ 2 & 3)

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
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BID SET - NOT FOR CONSTRUCTION

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
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Glendale, California 91201-1421
Ph:(818)956-8101 Fx:(818) 956-0120

NO.	REVISION DESCRIPTION	BY:
1	BID SET - NOT FOR CONSTRUCTION 6-15-2023	PYB

COFFMAN ENGINEERS
16133 Ventura Boulevard, Suite 1010
Encino, CA 91436
ph 818.285.2650
www.coffman.com

REGISTERED PROFESSIONAL ENGINEER — JOSEPH SCOTT DENS JR. — 19041 exp.3/31/2024 — ELECTRICAL — STATE OF CALIFORNIA

PLOT DATE: 07/13/2022

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

CITY OF LA HABRA - VISTA GRANDE PARK
VISTA GRANDE PARK
TITLE 24 - EXTERIOR

DESIGNED BY :	HS				
DRAWN BY :	HS	DATE : 07-13-2022	SCALE: AS SHOWN		
CHECKED BY :	AL	DATE :	E-002	SHEET	73 OF 89
APPROVED BY :	JSD	DATE :			

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STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			**NRCC-LTO-E**
Project Name:	Vista Grande Park	**Report Page:**	**(Page 7 of 10)**
Project Address:		**Date Prepared:**	6/1/2022

I. LIGHTING POWER ALLOWANCE (per §140.7)

02	03	04	05	06	07	08	9	10
Area Description	Surface Type	Area Wattage Allowance (AWA)			Area Wattage Allowance (AWA)			Total General AWA + LWA (Watts)
		Illuminated Area (ft²)	Allowed Density (W/ft²)	Area Allowance (Watts)	Perimeter Length (lf)	Allowed Density (W/lf)	Linear Allowance (Watts)	
PEDESTRIAN WALKWAY 1	Concrete	535	0.03	16.05	233	0.4	93.2	109.25
PEDESTRIAN WALKWAY 2	Concrete	1270	0.03	38.1	260	0.4	104	142.1
PEDESTRIAN WALKWAY 3	Concrete	1291	0.03	38.73	254	0.4	101.6	140.33
PEDESTRIAN WALKWAY 4	Concrete	1373	0.03	41.19	283	0.4	113.2	154.39
PEDESTRIAN WALKWAY 5	Concrete	1598	0.03	47.94	321	0.4	128.4	176.34
PEDESTRIAN WALKWAY 6	Concrete	1371	0.03	41.13	271	0.4	108.4	149.53
PEDESTRIAN WALKWAY 7	Concrete	1396	0.03	41.88	278	0.4	111.2	153.08
PEDESTRIAN WALKWAY 8	Concrete	1258	0.03	37.74	256	0.4	102.4	140.14
PEDESTRIAN WALKWAY 9	Concrete	1756	0.03	52.68	378	0.4	151.2	203.88
PEDESTRIAN WALKWAY 10	Concrete	1160	0.03	34.8	245	0.4	98	132.8
PEDESTRIAN WALKWAY 11	Concrete	1979	0.03	59.37	403	0.4	161.2	220.57
PEDESTRIAN WALKWAY 12	Concrete	709	0.03	21.27	293	0.4	117.2	138.47
PEDESTRIAN WALKWAY 13	Concrete	614	0.03	18.42	255	0.4	102	120.42
PEDESTRIAN WALKWAY 14	Concrete	656	0.03	19.68	280	0.4	112	131.68
PEDESTRIAN WALKWAY 15	Concrete	580	0.03	17.4	253	0.4	101.2	118.6
PEDESTRIAN WALKWAY 16	Concrete	406	0.03	12.18	173	0.4	69.2	81.38
PEDESTRIAN WALKWAY 17	Concrete	600	0.03	18	321	0.4	128.4	146.4
RESTROOM	Concrete	6121	0.03	183.63	334	0.4	133.6	317.23
AMPHITHEATER	Concrete	1723	0.03	51.69	149	0.4	59.6	111.29
GAZEBO	Concrete	10997	0.03	329.91	397	0.4	158.8	488.71
PARKING AREA 1	Asphalt	5052	0.03	126.3	321	0.4	80.25	206.55
PARKING AREA 2	Asphalt	13079	0.03	326.975	515	0.4	128.75	455.725
PARKING AREA 3	Asphalt	303	0.03	7.575	81	0.4	20.25	27.825

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

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STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			**NRCC-LTO-E**
Project Name:	Vista Grande Park	**Report Page:**	**(Page 8 of 10)**
Project Address:		**Date Prepared:**	6/1/2022

I. LIGHTING POWER ALLOWANCE (per §140.7)

02	03	04	05	06	07	08	9	10
Area Description	Surface Type	Area Wattage Allowance (AWA)			Area Wattage Allowance (AWA)			Total General AWA + LWA (Watts)
		Illuminated Area (ft²)	Allowed Density (W/ft²)	Area Allowance (Watts)	Perimeter Length (lf)	Allowed Density (W/lf)	Linear Allowance (Watts)	
PARKING AREA 4	Asphalt	9169	0.03	229.225	486	0.4	121.5	350.725
PARKING AREA 5	Asphalt	8681	0.03	217.025	456	0.4	114	331.025
PARKING AREA 6	Asphalt	8956	0.03	223.9	414	0.4	103.5	327.4
PARKING AREA 7	Asphalt	9800	0.03	245	497	0.4	124.25	369.25
PARKING AREA 8	Asphalt	4929	0.03	123.225	416	0.4	104	227.225
						Initial Wattage Allowance for Entire Site (Watts):		350
						Total General Hardscape Allowance (Watts):		6022.315

J. LIGHTING ALLOWANCE: PER APPLICATION
This section does not apply to this project.

K. LIGHTING ALLOWANCE: SALES FRONTAGE
This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL
This section does not apply to this project.

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA
This section does not apply to this project.

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)
This section does not apply to this project.

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

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STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			**NRCC-LTO-E**
Project Name:	Vista Grande Park	**Report Page:**	**(Page 9 of 10)**
Project Address:		**Date Prepared:**	6/1/2022

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Yes	No	Form/Title	Field Inspector Pass	Field Inspector Fail
●	○	NRCI-LTO-01-E - Must be submitted for all buildings	☐	☐
○	●	NRCI-LTO-02-E- Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Yes	No	Form/Title	Field Inspector Pass	Field Inspector Fail
○	●	NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.	☐	☐

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

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STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			**NRCC-LTO-E**
Project Name:	Vista Grande Park	**Report Page:**	**(Page 10 of 10)**
Project Address:		**Date Prepared:**	6/1/2022

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Joe Dews	Documentation Author Signature:
Company: Coffman Engineers	Signature Date: 2022-06-01
Address: 1455 Frazee Road Suite 600	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: San Diego CA 92108	Phone: 6192334228

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Joe Dews	Responsible Designer Signature:
Company: Coffman Engineers	Date Signed: 2022-06-01
Address: 1455 Frazee Road Suite 600	License: 19041
City/State/Zip: San Diego CA 92108	Phone: 6192334228

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

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BID SET - NOT FOR CONSTRUCTION

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(818)956-8101 Fx:(818) 956-0120

NO.	REVISION DESCRIPTION	BY:
1	BID SET - NOT FOR CONSTRUCTION 6-15-2023	PVB

COFFMAN ENGINEERS
16133 Ventura Boulevard, Suite 1010
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www.coffman.com

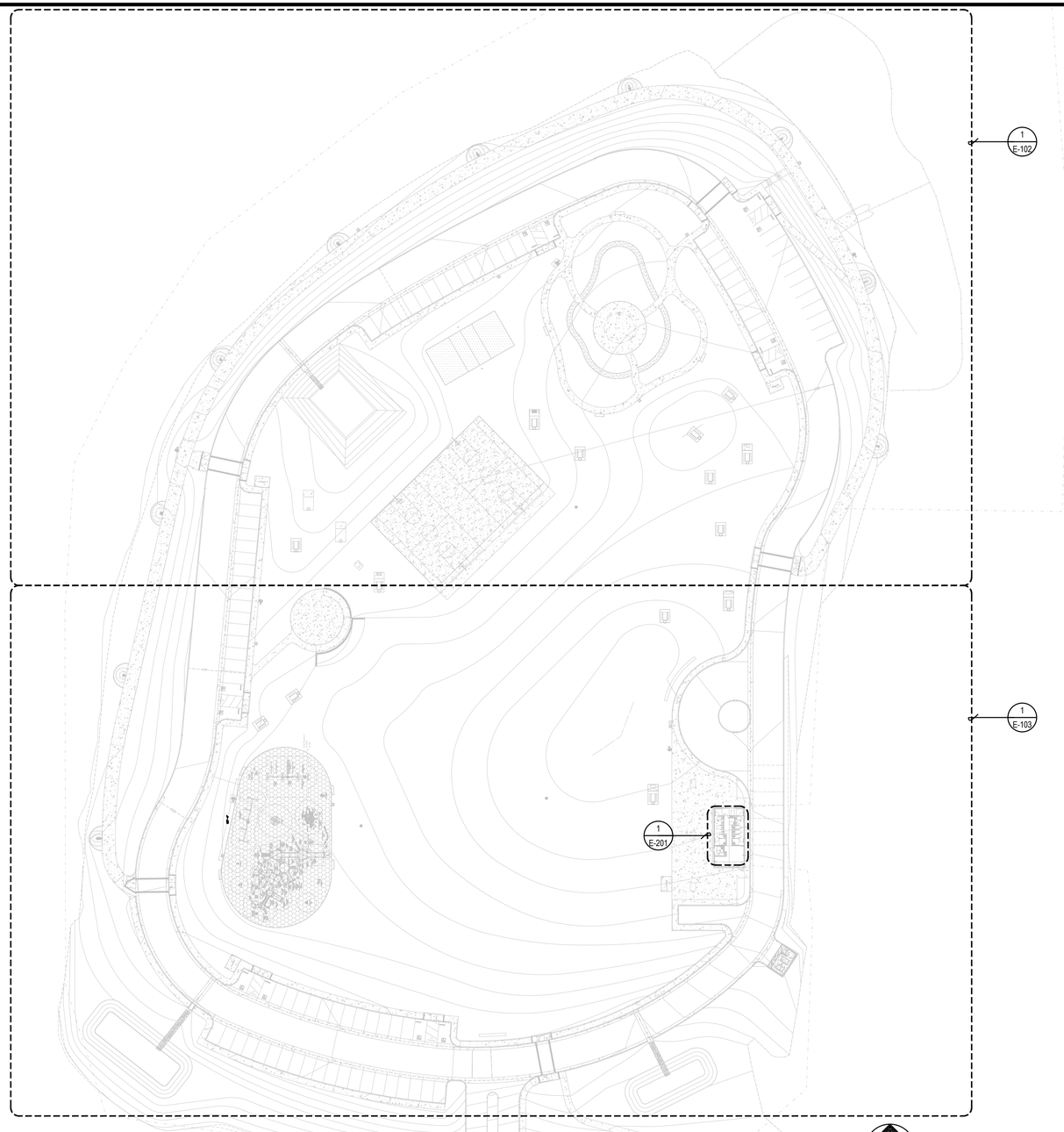
REGISTERED PROFESSIONAL ENGINEER · JOSEPH SCOTT DENS JR. · 19041 exp.3/31/2024 · ELECTRICAL · STATE OF CALIFORNIA

PLOT DATE: 07/13/2022

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

CITY OF LA HABRA - VISTA GRANDE PARK
VISTA GRANDE PARK
TITLE 24 - EXTERIOR

DESIGNED BY :	HS				
DRAWN BY :	HS	DATE : 07-13-2022	SCALE: AS SHOWN		
CHECKED BY :	AL	DATE :	E-003	SHEET	74 OF 89
APPROVED BY :	JSD	DATE :			



BID SET - NOT FOR CONSTRUCTION

OVERALL SITE PLAN

SCALE: 1" = 50'

NORTH

1"=50'-0" 0 25 50 100 150

Troller Mayer Associates, Inc
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1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(818)956-8101 Fx:(818) 956-0120

NO.	REVISION DESCRIPTION	BY:
1	BID SET - NOT FOR CONSTRUCTION 6-15-2023	PVB

COFFMAN ENGINEERS
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REGISTERED PROFESSIONAL ENGINEER
JOSEPH SCOTT DEBIS JR
19041
exp.3/31/2024
ELECTRICAL
STATE OF CALIFORNIA

PLOT DATE: 07/13/2022

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

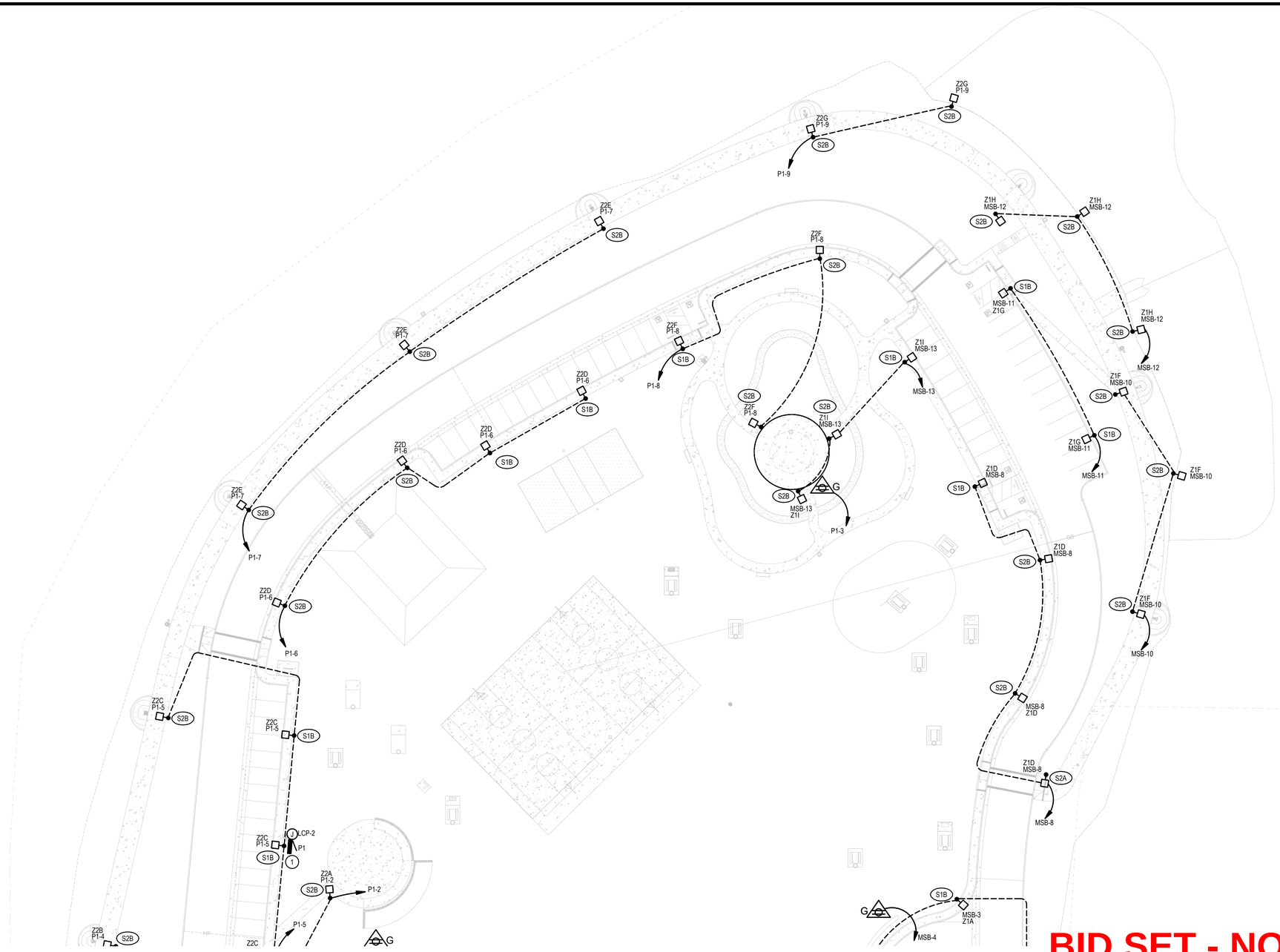
CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

OVERALL SITE PLAN

DESIGNED BY :	HS		
DRAWN BY :	HS	DATE : 07-13-2022	SCALE: AS SHOWN
CHECKED BY :	AL	DATE :	E-101
APPROVED BY :	JSD	DATE :	SHEET 75 OF 89

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1 E-102 ENLARGED SITE PLAN - NORTH

SCALE: 1" = 30'

GENERAL NOTES

1. ALL UNDERGROUND ELECTRICAL CONDUIT MUST BE INSTALLED WITH A MINIMUM OF 24" COVER, AND 2" CONCRETE ENCASEMENT. ALL TERMINATIONS MUST BE MADE ABOVE GRADE. DO NOT INSTALL ANY PULLBOXES, JUNCTION BOXES, OR HANDHOLES AT OR BELOW GRADE.
2. PROVIDE THREADED RIGID METAL CONDUIT, WRAPPED IN ANTI-CORROSION TAPE, FOR THE LAST 24" OF THE UNDERGROUND RUN TO THE POINT OF EMERGENCE ABOVE GRADE. INSTALL TYPE 'E-Y' SEAL OFF FITTINGS AT ALL CONDUIT STUB-UPS FROM UNDERGROUND TO GRADE, AND INSTALL SEALANT COMPOUND AFTER CONDUCTOR INSTALLATION PER MANUFACTURER REQUIREMENTS.
3. ALL SITE BRANCH CIRCUITS SHALL BE SIZED AT #10 AWG MINIMUM.
4. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT LOCATIONS AND RACEWAY INSTALLATION WITH ARCHITECTURAL, MECHANICAL, STRUCTURAL, PLUMBING AND ALL APPROPRIATE DISCIPLINES.
5. PROVIDE WEATHERPROOF JUNCTION BOXES, CONDUIT, FITTINGS AND ENCLOSURES AT ALL EXTERIOR LOCATIONS AND ALL WET OR DAMP INTERIOR LOCATIONS.
6. VERIFY EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
7. CONTRACTOR SHALL CONCEAL ALL CONDUIT FITTINGS AND DEVICES FROM PUBLIC VIEW.
8. CONTRACTOR SHALL ENSURE THAT ALL CONDUIT, FIXTURES, FITTINGS, AND DEVICES LOCATED IN PUBLIC AREAS ARE TAMPERPROOF AND PROTECTED FROM PHYSICAL DAMAGE.
9. GROUND WIRE SHALL BE PROOF POSITIVE #4/0 AWG, BARE, SOFT DRAWN, COPPER CABLES, UNLESS OTHERWISE NOTED.
10. ALL METALLIC ITEMS IN THE M&T BUILDING SHALL BE GROUNDED, INCLUDES ALL ELECTRIC PANELS, HVAC EQUIPMENTS, ROOF ACCESS LADDER, EXTERIOR METAL DOOR FRAMES, METAL CARPORT COLUMNS, SITE LIGHTING POLES, ETC. PER SCE STANDARD SECTION 33.
11. PROVED #4/0 AWG BARE SOFT DRAWN COPPER - CADWELD AT PERIMETER GRID AND CADWELD TO ALL INTERIOR AND EXTERIOR BUILDING STRUCTURAL COLUMNS.

KEY NOTES

(1) PROVIDE AN EATON 240/120V 1-PHASE 100A STAINLESS PEDESTAL MOUNT EVENT PANEL WITH LOCKABLE HINGED DOOR, PART# EP-P.A.1.C.[FINISH].SINGLE.L.N.M.A, OR APPROVED EQUAL.

BID SET - NOT FOR CONSTRUCTION

1"=30'-0" 0 10 20 30 60 90

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NO.	REVISION DESCRIPTION	BY:
1	BID SET - NOT FOR CONSTRUCTION 6-15-2023	PVB

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REGISTERED PROFESSIONAL ENGINEER JOSEPH SCOTT DEMS JR 19041 exp.3/31/2024 ELECTRICAL STATE OF CALIFORNIA

PLOT DATE: 07/13/2022

TETRA TECH
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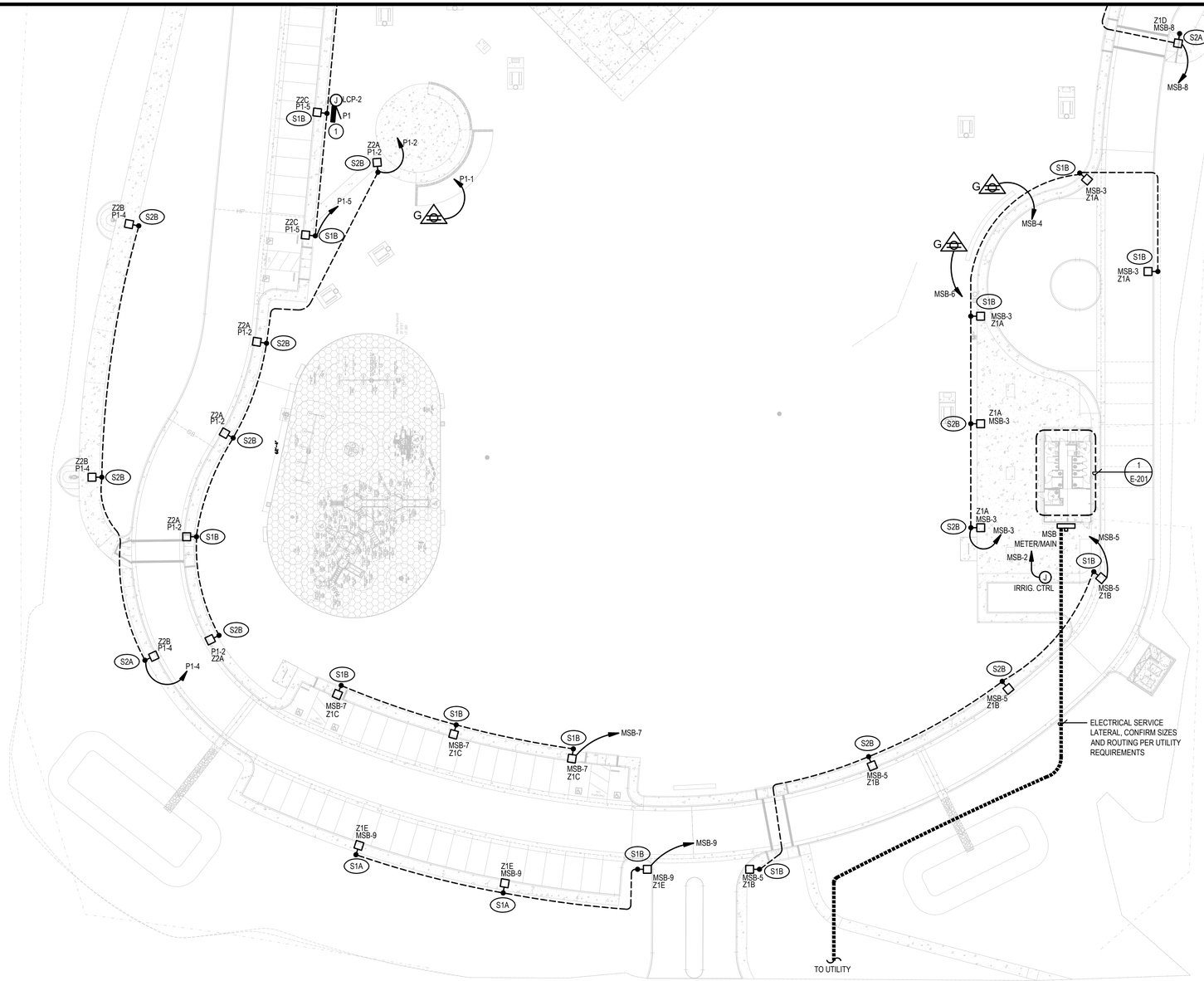
CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

ENLARGED SITE PLAN - NORTH

DESIGNED BY : HS			
DRAWN BY : HS	DATE : 07-13-2022	SCALE: AS SHOWN	
CHECKED BY : AL	DATE :	E-102	SHEET 76 OF 89
APPROVED BY : JSD	DATE :		

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GENERAL NOTES

1. ALL UNDERGROUND ELECTRICAL CONDUIT MUST BE INSTALLED WITH A MINIMUM OF 24" COVER, AND 2" CONCRETE ENCASEMENT. ALL TERMINATIONS MUST BE MADE ABOVE GRADE. DO NOT INSTALL ANY PULLBOXES, JUNCTION BOXES, OR HANDHOLES AT OR BELOW GRADE.
2. PROVIDE THREADED RIGID METAL CONDUIT, WRAPPED IN ANTI-CORROSION TAPE, FOR THE LAST 24" OF THE UNDERGROUND RUN TO THE POINT OF EMERGENCE ABOVE GRADE. INSTALL TYPE 'E-Y' SEAL OFF FITTINGS AT ALL CONDUIT STUB-UPS FROM UNDERGROUND TO GRADE, AND INSTALL SEALANT COMPOUND AFTER CONDUCTOR INSTALLATION PER MANUFACTURER REQUIREMENTS.
3. ALL SITE BRANCH CIRCUITS SHALL BE SIZED AT #10 AWG MINIMUM.
4. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT LOCATIONS AND RACEWAY INSTALLATION WITH ARCHITECTURAL, MECHANICAL, STRUCTURAL, PLUMBING AND ALL APPROPRIATE DISCIPLINES.
5. PROVIDE WEATHERPROOF JUNCTION BOXES, CONDUIT, FITTINGS AND ENCLOSURES AT ALL EXTERIOR LOCATIONS AND ALL WET OR DAMP INTERIOR LOCATIONS.
6. VERIFY EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
7. CONTRACTOR SHALL CONCEAL ALL CONDUIT FITTINGS AND DEVICES FROM PUBLIC VIEW.
8. CONTRACTOR SHALL ENSURE THAT ALL CONDUIT, FIXTURES, FITTINGS, AND DEVICES LOCATED IN PUBLIC AREAS ARE TAMPERPROOF AND PROTECTED FROM PHYSICAL DAMAGE.
9. GROUND WIRE SHALL BE PROOF POSITIVE #4/0 AWG, BARE, SOFT DRAWN, COPPER CABLES, UNLESS OTHERWISE NOTED.
10. ALL METALLIC ITEMS IN THE M&T BUILDING SHALL BE GROUNDED, INCLUDES ALL ELECTRIC PANELS, HVAC EQUIPMENTS, ROOF ACCESS LADDER, EXTERIOR METAL DOOR FRAMES, METAL CARPORT COLUMNS, SITE LIGHTING POLES, ETC. PER SCE STANDARD SECTION 33.
11. PROVED #4/0 AWG BARE SOFT DRAWN COPPER - CADWELD AT PERIMETER GRID AND CADWELD TO ALL INTERIOR AND EXTERIOR BUILDING STRUCTURAL COLUMNS.

KEY NOTES

(1) PROVIDE AN EATON 240/120V 1-PHASE 100A STAINLESS PEDESTAL MOUNT EVENT PANEL WITH LOCKABLE HINGED DOOR, PART# EP-P.A.1.C.[FINISH].SINGLE.L.N.M.A, OR APPROVED EQUAL.

BID SET - NOT FOR CONSTRUCTION

1 / E-103 ENLARGED SITE PLAN - SOUTH

SCALE: 1" = 30'

NORTH

1"=30'-0" 0 10 20 30 60 90

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(818)956-8101 Fx:(818) 956-0120

NO.	REVISION DESCRIPTION	BY:
1	BID SET - NOT FOR CONSTRUCTION 6-15-2023	PVB

COFFMAN ENGINEERS
16133 Ventura Boulevard, Suite 1010
Encino, CA 91436
ph 818.285.2650
www.coffman.com

REGISTERED PROFESSIONAL ENGINEER JOSEPH SCOTT DEMS JR 19041 exp.3/31/2024 ELECTRICAL STATE OF CALIFORNIA

PLOT DATE: 07/13/2022

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

ENLARGED SITE PLAN - SOUTH

DESIGNED BY : HS			
DRAWN BY : HS	DATE : 07-13-2022	SCALE: AS SHOWN	
CHECKED BY : AL	DATE :	E-103	SHEET 77 OF 89
APPROVED BY : JSD	DATE :		

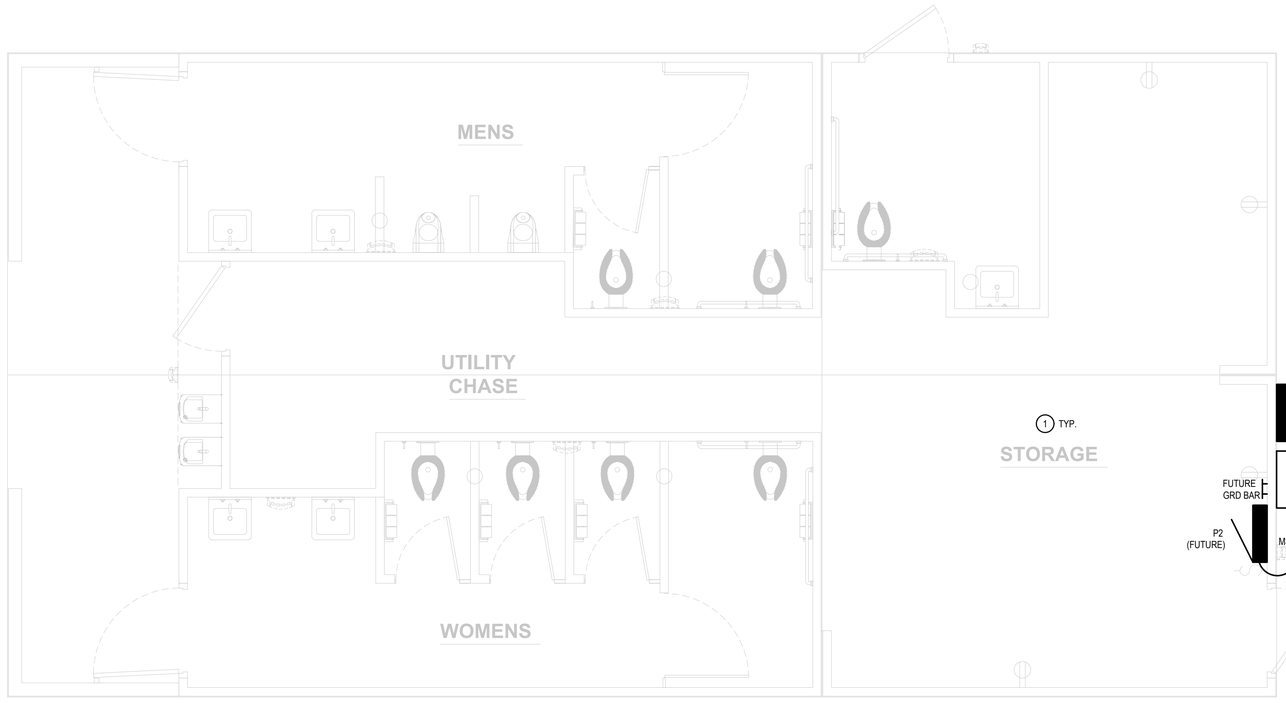
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GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT LOCATIONS AND RACEWAY INSTALLATION WITH ARCHITECTURAL, MECHANICAL, STRUCTURAL, PLUMBIN AND ALL APPROPRIATE DISCIPLINES.
2. CONTRACTOR SHALL CONCEAL ALL CONDUIT FITTINGS AND DEVICES FROM PUBLIC VIEW WHERE REASONABLY POSSIBLE.
3. CONTRACTOR SHALL ENSURE THAT ALL CONDUIT, FIXTURES, FITTINGS, AND DEVICES LOCATED IN PUBLIC AREAS ARE TAMPERPROOF AND PROTECTED FROM PHYSICAL DAMAGE.

KEY NOTES

(1) ALL RESTROOM BUILDING DEVICES, WIRING, AND EQUIPMENT IS BY OTHERS. THIS PROJECT SCOPE INCLUDES MAIN PANEL MSB AND EXTERIOR CIRCUITING ONLY.



BID SET - NOT FOR CONSTRUCTION

1 / E-201 ENLARGED NEW ELECTRICAL PLANS
SCALE: 3/8" = 1'-0"

NORTH

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(818)956-8101 Fx:(818) 956-0120

NO.	REVISION DESCRIPTION	BY:
1	BID SET - NOT FOR CONSTRUCTION 6-15-2023	PVB

COFFMAN ENGINEERS
16133 Ventura Boulevard, Suite 1010
Encino, CA 91436
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REGISTERED PROFESSIONAL ENGINEER — JOSEPH SCOTT DEBS, JR — 19041 exp.3/31/2024 — ELECTRICAL — STATE OF CALIFORNIA

PLOT DATE: 07/13/2022

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

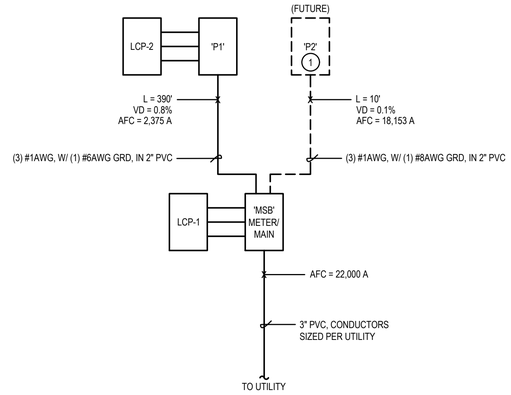
ENLARGED NEW ELECTRICAL PLANS

DESIGNED BY :	HS		
DRAWN BY :	HS	DATE : 07-13-2022	SCALE: AS SHOWN
CHECKED BY :	AL	DATE :	E-201
APPROVED BY :	JSD	DATE :	SHEET 78 OF 89

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KEY NOTES

1. PANEL PROVIDED BY OTHERS. CONNECTION ONLY.



2 SINGLE LINE DIAGRAM

SCALE: N/A

VISTA GRANDE PARK — **PANEL SCHEDULE** — **NEW PANEL: MSB** — 212496

Location: | Feed Through: | Source:

Ckt	Load Description	Phase	Amp	Poles	Notes	Rec.	Ltg.	Kit.	Mtr.	Htg.	Clg.	Cont.	Non.	Total
1	**LCP-1**	A	20	1			0.28					0.20		0.20
3	**LIGHTING**	B	20	1			0.60							0.60
5	**LIGHTING**	A	20	1			0.46							0.46
7	**LIGHTING**	B	20	1			0.41							0.41
9	**LIGHTING**	A	20	1			0.41							0.41
11	**LIGHTING**	B	20	1			0.28							0.28
13	**LIGHTING**	A	20	1			0.32							0.32
15	SPARE C.B.	B	20	1										
17	SPARE C.B.	A	20	1										
19	SPARE C.B.	B	20	1										
21	SPARE C.B.	A	20	1										
23	SPARE C.B.	B	20	1										
25	SPARE C.B.	A	20	1										
27	SPARE C.B.	B	20	1										
29	SPARE C.B.	A	20	1										
31	SPARE C.B.	B	20	1										
33	SPARE C.B.	A	20	1										
35	SPARE C.B.	B	20	1										
37	SPARE C.B.	A	20	1										
39	**PANEL 'P2'**	B	100	2										
41	-	A	-	-										
2	**IRRIGATION CTRL**	A	20	1								0.30		0.30
4	**RECEPT. ART WALL SOUTH**	B	20	1		0.18								0.18
6	**RECEPT. ART WALL SOUTH**	A	20	1		0.18								0.18
8	**LIGHTING**	B	20	1			0.41							0.41
10	**LIGHTING**	A	20	1			0.28							0.28
12	**LIGHTING**	B	20	1			0.28							0.28
14	SPARE C.B.	A	20	1							1.00			1.00
16	SPARE C.B.	B	20	1										
18	SPARE C.B.	A	20	1										
20	SPARE C.B.	B	20	1										
22	SPARE C.B.	A	20	1										
24	SPARE C.B.	B	20	1										
26	SPARE C.B.	A	20	1										
28	SPARE C.B.	B	20	1										
30	SPARE C.B.	A	20	1										
32	SPARE C.B.	B	20	1										
34	SPARE C.B.	A	20	1										
36	SPARE C.B.	B	20	1										
38	SPARE C.B.	A	20	1										
40	**PANEL 'P1'**	B	100	2		0.18	1.66							1.84
42	-	A	-	-		0.18	0.88					0.20		1.26

Specifications	
Rating (Amps):	200
Voltage (L-L):	240
Phase:	1
Wire:	3
Bus Material:	Cu
Int. Rating:	22,000A
Main Lugs Only:	-
Main Ckt Brkr:	200 A
Surface Mtd:	X
Flush Mtd:	-
Bonded Gnd:	-
Isolated Gnd:	-
200% Neutral:	-
Feed Thru:	-
Double Lug:	-
Top Feed:	-
Bottom Feed	-
Feed Thru Load:	NONE
Phase A:	
Phase B:	
Total Conn.:	
Load From This Panel:	
Phase A:	4.41
Phase B:	4.00
Total Conn.:	8.41
Total Connected Load:	
Phase A:	4.41
Phase B:	4.00
Total Conn.:	8.41
Total Feeder Demand Load:	
Total:	10.08 KVA
Avg. Amps/Phase:	42 A.

CATEGORY	TOTAL CONN. LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)
Receptacles	0.72	50%>10KVA	0.72
Lighting	5.99	125%	7.49
Kitchen Equipment		NEC 220.56	
Motors (Largest)		125%	
Motors		100%	
Heating		NEC 220.60	
Cooling	1.00	NEC 220.60	1.00
Continuous Load	0.70	125%	0.88
Non-Continuous Load		100%	
		100%	
		100%	
TOTAL	8.41		10.08

General Notes:

Keyed Notes:

COFFMAN ENGINEERS

VISTA GRANDE PARK — **PANEL SCHEDULE** — **NEW PANEL: P1** — 212496

Location: | Feed Through: | Source:

Ckt	Load Description	Phase	Amp	Poles	Notes	Rec.	Ltg.	Kit.	Mtr.	Htg.	Clg.	Cont.	Non.	Total
1	**RECEPT. AMPITHEATER**	A	20	1		0.18								0.18
3	**RECEPT. GAZEBO**	B	20	1		0.18								0.18
5	**LIGHTING**	A	20	1			0.51							0.51
7	**LIGHTING**	B	20	1			0.28							0.28
9	**LIGHTING**	A	20	1			0.18							0.18
11	**LCP-2**	B	20	1								0.20		0.20
13	SPARE C.B.	A	20	1										
15	SPARE C.B.	B	20	1										
17	SPARE C.B.	A	20	1										
19	SPARE C.B.	B	20	1										
21	SPARE C.B.	A	20	1										
23	SPARE C.B.	B	20	1										
25	SPARE C.B.	A	20	1										
27	SPARE C.B.	B	20	1										
29	SPARE C.B.	A	20	1										
31	SPARE C.B.	B	20	1										
33	SPARE C.B.	A	20	1										
35	SPARE C.B.	B	20	1										
37	SPARE C.B.	A	20	1										
39	SPARE C.B.	B	20	1										
41	SPARE C.B.	A	20	1										
2	**LIGHTING**	A	20	1			0.51							0.51
4	**LIGHTING**	B	20	1			0.28							0.28
6	**LIGHTING**	A	20	1			0.46							0.46
8	**LIGHTING**	B	20	1			0.32							0.32
10	SPARE C.B.	A	20	1										
12	SPARE C.B.	B	20	1										
14	SPARE C.B.	A	20	1										
16	SPARE C.B.	B	20	1										
18	SPARE C.B.	A	20	1										
20	SPARE C.B.	B	20	1										
22	SPARE C.B.	A	20	1										
24	SPARE C.B.	B	20	1										
26	SPARE C.B.	A	20	1										
28	SPARE C.B.	B	20	1										
30	SPARE C.B.	A	20	1										
32	SPARE C.B.	B	20	1										
34	SPARE C.B.	A	20	1										
36	SPARE C.B.	B	20	1										
38	SPARE C.B.	A	20	1										
40	SPARE C.B.	B	20	1										
42	SPARE C.B.	A	20	1										

Specifications	
Rating (Amps):	100
Voltage (L-L):	240
Phase:	1
Wire:	3
Bus Material:	Cu
Int. Rating:	22,000A
Main Lugs Only:	-
Main Ckt Brkr:	100 A
Surface Mtd:	X
Flush Mtd:	-
Bonded Gnd:	-
Isolated Gnd:	-
200% Neutral:	-
Feed Thru:	-
Double Lug:	-
Top Feed:	-
Bottom Feed	-
Feed Thru Load:	NONE
Phase A:	
Phase B:	
Total Conn.:	
Load From This Panel:	
Phase A:	1.84
Phase B:	1.26
Total Conn.:	3.10
Total Connected Load:	
Phase A:	1.84
Phase B:	1.26
Total Conn.:	3.10
Total Feeder Demand Load:	
Total:	3.79 KVA
Avg. Amps/Phase:	16 A.

CATEGORY	TOTAL CONN. LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)
Receptacles	0.36	50%>10KVA	0.36
Lighting	2.54	125%	3.18
Kitchen Equipment		NEC 220.56	
Motors (Largest)		125%	
Motors		100%	
Heating		NEC 220.60	
Cooling		NEC 220.60	
Continuous Load	0.20	125%	0.25
Non-Continuous Load		100%	
		100%	
		100%	
TOTAL	3.10		3.79

General Notes:

Keyed Notes:

COFFMAN ENGINEERS

VISTA GRANDE PARK — **PANEL SCHEDULE** — **NEW PANEL: P2** — 212496

Location: | Feed Through: | Source:

Ckt	Load Description	Phase	Amp	Poles	Notes	Rec.	Ltg.	Kit.	Mtr.	Htg.	Clg.	Cont.	Non.	Total
1	SPARE C.B.	A	20	1										
3	SPARE C.B.	B	20	1										
5	SPARE C.B.	A	20	1										
7	SPARE C.B.	B	20	1										
9	SPARE C.B.	A	20	1										
11	SPARE C.B.	B	20	1										
13	SPARE C.B.	A	20	1										
15	SPARE C.B.	B	20	1										
17	SPARE C.B.	A	20	1										
19	SPARE C.B.	B	20	1										
21	SPARE C.B.	A	20	1										
23	SPARE C.B.	B	20	1										
25	SPARE C.B.	A	20	1										
27	SPARE C.B.	B	20	1										
29	SPARE C.B.	A	20	1										
31	SPARE C.B.	B	20	1										
33	SPARE C.B.	A	20	1										
35	SPARE C.B.	B	20	1										
37	SPARE C.B.	A	20	1										
39	SPARE C.B.	B	20	1										
41	SPARE C.B.	A	20	1										
2	SPARE C.B.	A	20	1										
4	SPARE C.B.	B	20	1										
6	SPARE C.B.	A	20	1										
8	SPARE C.B.	B	20	1										
10	SPARE C.B.	A	20	1										
12	SPARE C.B.	B	20	1										
14	SPARE C.B.	A	20	1										
16	SPARE C.B.	B	20	1										
18	SPARE C.B.	A	20	1										
20	SPARE C.B.	B	20	1										
22	SPARE C.B.	A	20	1										
24	SPARE C.B.	B	20	1										
26	SPARE C.B.	A	20	1										
28	SPARE C.B.	B	20	1										
30	SPARE C.B.	A	20	1										
32	SPARE C.B.	B	20	1										
34	SPARE C.B.	A	20	1										
36	SPARE C.B.	B	20	1										
38	SPARE C.B.	A	20	1										
40	SPARE C.B.	B	20	1										
42	SPARE C.B.	A	20	1										

Specifications	
Rating (Amps):	100
Voltage (L-L):	240
Phase:	1
Wire:	3
Bus Material:	Cu
Int. Rating:	22,000A
Main Lugs Only:	-
Main Ckt Brkr:	100 A
Surface Mtd:	X
Flush Mtd:	-
Bonded Gnd:	-
Isolated Gnd:	-
200% Neutral:	-
Feed Thru:	-
Double Lug:	-
Top Feed:	-
Bottom Feed	-
Feed Thru Load:	NONE
Phase A:	
Phase B:	
Total Conn.:	
Load From This Panel:	
Phase A:	
Phase B:	
Total Conn.:	
Total Connected Load:	
Phase A:	
Phase B:	
Total Conn.:	
Total Feeder Demand Load:	
Total:	
Avg. Amps/Phase:	

CATEGORY	TOTAL CONN. LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)
Receptacles		50%>10KVA	
Lighting		125%	
Kitchen Equipment		NEC 220.56	
Motors (Largest)		125%	
Motors		100%	
Heating		NEC 220.60	
Cooling		NEC 220.60	
Continuous Load		125%	
Non-Continuous Load		100%	
		100%	
		100%	
TOTAL			

General Notes:

Keyed Notes:

COFFMAN ENGINEERS

PANEL MSB	PANEL P1	PANEL P2

1 PANEL SCHEDULES

SCALE: N/A

BID SET - NOT FOR CONSTRUCTION

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(818)956-8101 Fx:(818) 956-0120

NO.	REVISION DESCRIPTION	BY:
1	BID SET - NOT FOR CONSTRUCTION 6-15-2023	PVB

COFFMAN ENGINEERS
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REGISTERED PROFESSIONAL ENGINEER — JOSEPH SCOTT DENS JR. — 19041 exp.3/31/2024 — ELECTRICAL — STATE OF CALIFORNIA

PLOT DATE: 07/13/2022

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

SINGLE LINE DIAGRAM & PANEL SCHEDULES

DESIGNED BY :	HS		
DRAWN BY :	HS	DATE : 07-13-2022	SCALE: AS SHOWN
CHECKED BY :	AL	DATE :	E-301
APPROVED BY :	JSD	DATE :	SHEET 79 OF 89

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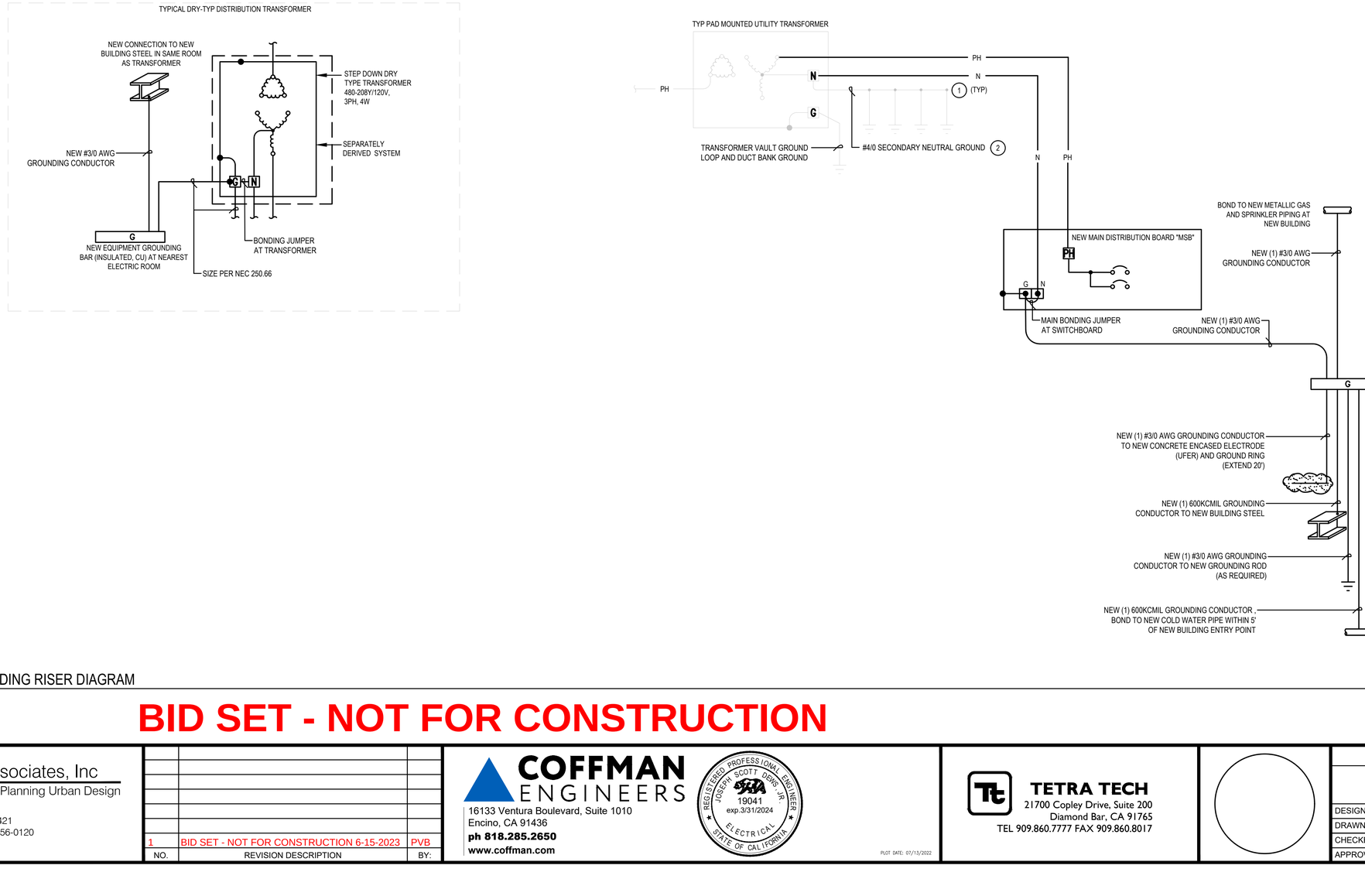
GENERAL NOTES (GROUNDING)

1. PROVIDE COPPER GROUNDING ELECTRODE CONDUCTOR SIZED AS INDICATED AND BOND TO BUILDING COLD WATER PIPING, STRUCTURAL STEEL, CONCRETE ENCASED ELECTRODE, AND GROUND RING PER CEC 250. CONCRETE ENCASED ELECTRODE SHALL BE 20'-0" BARE COPPER IN CONCRETE FOOTING/FOUNDATION BONDED TO GROUND STEEL.
2. DETAIL REPRESENTS TYPICAL CONDITIONS.

KEY NOTES

(1) PROVIDE (4) GROUND RODS 90-DEGREES TO DUCT BANK GROUND SPACED TWENTY FEET MINIMUM APART. MAINTAIN TWENTY FEET MINIMUM BETWEEN GROUND RODS AND TRANSFORMER VAULT GROUND LOOP.

(2) PROVIDE 600V INSULATED COPPER GROUND TO FIRST GROUNDING ELECTRODE (BARE COPPER GROUND).



(1) NEW GROUNDING RISER DIAGRAM
SCALE: N/A

BID SET - NOT FOR CONSTRUCTION

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(818)956-8101 Fx:(818) 956-0120

NO.	REVISION DESCRIPTION	BY:
1	BID SET - NOT FOR CONSTRUCTION 6-15-2023	PVB

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PLOT DATE: 07/13/2022

TETRA TECH
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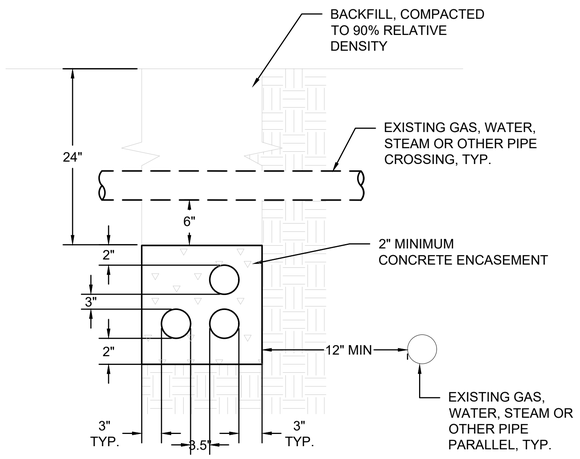
CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

GROUNDING RISER DIAGRAM

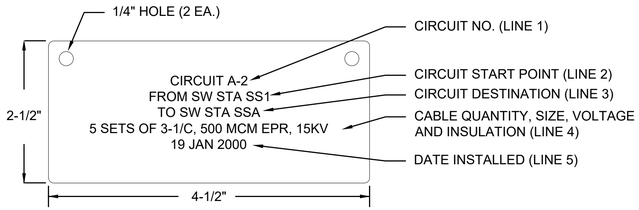
DESIGNED BY : HS			
DRAWN BY : HS	DATE : 07-13-2022	SCALE: AS SHOWN	
CHECKED BY : AL	DATE :	E-401	SHEET 80 OF 89
APPROVED BY : JSD	DATE :		

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7 TYPICAL UNDERGROUND RACEWAY

SCALE: N/A

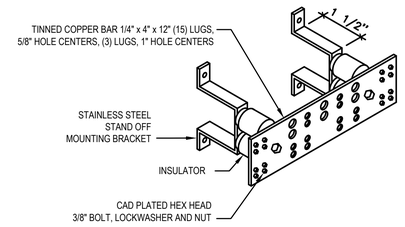


6 CABLE IDENTIFICATION TAG

SCALE: N/A

DETAIL GENERAL NOTES:

1. 1/8" THICK LAMINATED WHITE MELAMINE (WITH BLACK CORE), PLASTIC TAG WITH MATTE WHITE FINISH CHARACTERS CUT THROUGH
2. THE WHITE PLASTIC INTO THE BLACK CORE.
3. USE LOCK-ON TYPE NYLON TIES TO ATTACH TAG TO CABLES.
4. LETTERS AND NUMBERS MUST BE 1/4" HIGH.
5. REFER TO ELECTRICAL DRAWING CABLE TAG SCHEDULE FOR ENGRAVED TEXT INFORMATION. ABOVE INFORMATION IS ONLY A SAMPLE.
6. PLACE TAGS TO READ LEGIBLY FROM CENTER OF MANHOLE.

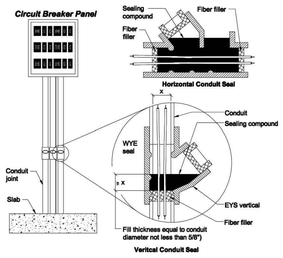


GENERAL NOTES:

1. PROVIDE COMPLETE WITH APPROPRIATE MOUNTING HARDWARE (BOLTS, NUTS, LOCKWASHERS, STAND OFF BRACKETS AND INSULATORS), MOUNTING HOLES, SLOTS AND LUGS.
2. ALL SPLICE SHALL BE EXOTHERMIC WELD.
3. ASSEMBLED GROUND BARS SHALL BE FABRICATED FROM STOCKLIST AND DETAIL DRAWINGS CONTAINED WITHIN THIS EXHIBIT.
4. BUSBAR CONNECTORS SHALL UTILIZE 2 HOLE COMPRESSION CONNECTORS.
5. BOND GROUNDING BAR TO BUILDING ELECTRODE SYSTEM. IN ADDITION, PROVIDE 12'-0" LONG, #6AWG BARE COPPER GROUND CONDUCTOR CONNECTED TO GROUNDING BAR AND CABLE TRAY. FIELD VERIFY CONNECTION AND ROUTING REQUIREMENTS PRIOR TO BID AND ROUGH IN.

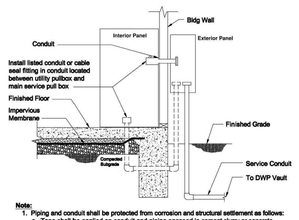
5 GROUNDING BUS BAR DETAIL

SCALE: N/A



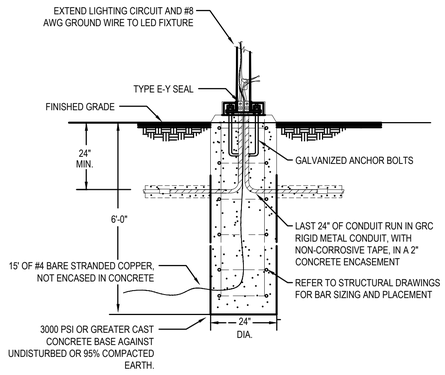
4 TYPICAL CONDUIT SEAL

SCALE: N/A



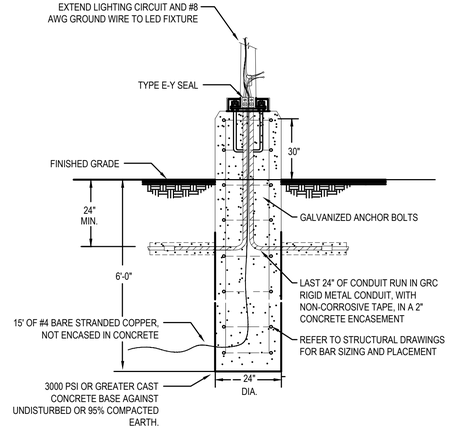
3 TYPICAL CONDUIT ENTRY

SCALE: N/A



2 LIGHTING POLE BASE DETAIL (NON-PARKING AREAS)

SCALE: N/A



1 LIGHTING POLE BASE DETAIL (AT PARKING AREAS)

SCALE: N/A

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Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(818)956-8101 Fx:(818) 956-0120

NO.	REVISION DESCRIPTION	BY:
1	BID SET - NOT FOR CONSTRUCTION 6-15-2023	PVB

COFFMAN ENGINEERS
16133 Ventura Boulevard, Suite 1010
Encino, CA 91436
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REGISTERED PROFESSIONAL ENGINEER
JOSEPH SCOTT DEBS, JR
19041
exp.3/31/2024
ELECTRICAL
STATE OF CALIFORNIA

PLOT DATE: 07/13/2022

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

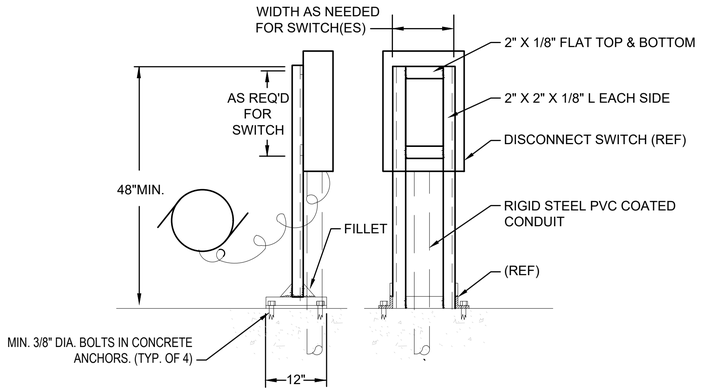
CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

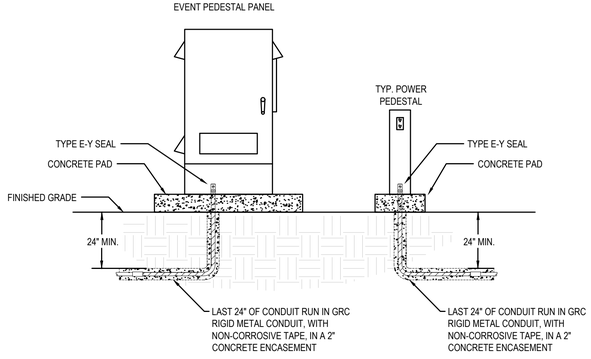
DETAILS

DESIGNED BY : HS			
DRAWN BY : HS	DATE : 07-13-2022	SCALE: AS SHOWN	
CHECKED BY : AL	DATE :	E-402	SHEET 81 OF 89
APPROVED BY : JSD	DATE :		

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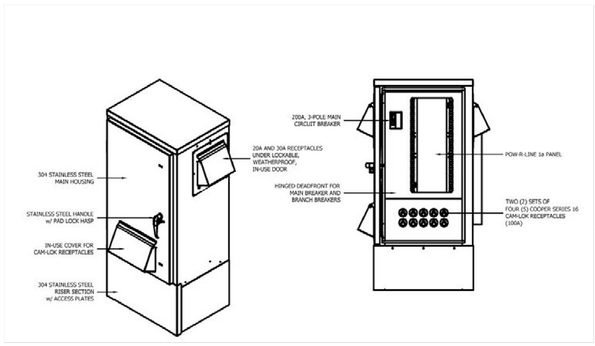
4 RACK MOUNTED ELECTRICAL EQUIPMENT
SCALE: N/A



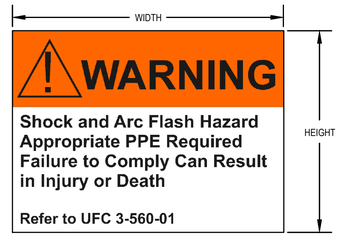
3 POWER BOLLARD, PEDESTAL EVENT DETAIL CONDUIT ENTRY DETAIL
SCALE: N/A

Pedestal Mount
Event Panel

EP-P	6	4	A	G	D	B	X	N	1st Top Left	2nd Top Right	3rd Bottom Left	4th Bottom Right
Event Panel Pedestal	Receptacle Positions	Service Rating	Voltage Rating	Enclosure Finish	Side(s)	Aux Power In	External Disconnect	Main Service Options	Receptacle Plate #1	Receptacle Plate #2	Receptacle Plate #3	Receptacle Plate #4
	A = 1-5 Positions B = 6-10 Positions C= 11-15 Positions D= 16-20 Positions	1 = 100A 2 = 250A 4 = 400A 6 = 600A	A = 208Y/120V 3Ph 4W B = 480Y/277V 3Ph 4W C = 120/240V 1Ph 3W	N = None G = ANSI Grey W = Marine White A = Aluminum White X = Other	S = Single D = Dual	B = Bus Bar C= Cam-Lok L = Main Lug Only	N = None R = Rotary Disconnect C = Cable Handle Disconnect	N = None M = Main Breaker S = Mold Case Switch F = Fuse Disconnect	X = Blank A = 20 20 20 B = 30 30 30 C = 50 50 50 D = 100A 120/240V E = 100A 120/208V F = 100A 277/480V G = 30 20 50 H = 30 20 30 I = 50 20 50 J = 3W Cam-Lok K = 4W Cam-Lok S=Special Fill Options available			



2 PEDESTAL EVENT PANEL 'P1' DETAIL
SCALE: N/A



NOTES:

1. PROVIDE SELF-ADHESIVE VINYL LABEL TO AFFIX TO ELECTRICAL EQUIPMENT TO WARN OF ARC FLASH HAZARDS.
2. THE LABEL FORMAT AND TEXT MUST BE IN ACCORDANCE WITH THE FIGURE.
3. THE LABEL MUST BE LOCATED ON THE EQUIPMENT CLEARLY AND VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.
4. THE SIZE OF THE LABEL MUST BE:
   4.1. INDOOR - 2" HEIGHT, 3" WIDTH
   4.2. OUTDOOR - 3" HEIGHT, 6" WIDTH
5. A DOWNLOADABLE WINDOWS METAFILE IS AVAILABLE ON THE WHOLE BUILDING DESIGN GUIDE WEBSITE (WDBG.ORG) FOR USE IN A LABEL MAKING MACHINE.
   5.1. THE FILE IS LOCATED ON THE "NAVFAC CADD DETAILS" PAGE. TO NAVIGATE TO THIS LOCATION, FOLLOW: HOME > DOCUMENTS & REFERENCES > CCB > CADD LIBRARY > NAVFAC CADD RESOURCES > NAVFAC CADD DETAILS
   5.2. ALTERNATIVELY, TYPE IN THE FOLLOWING ADDRESS IN INTERNET EXPLORER: HTTP://WWW.WDGB.ORG/CCB/BROWSE_CAT.PHP?0+78%C=232

ARC FLASH WARNING LABEL

1 ARC FLASH WARNING LABEL
SCALE: N/A

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CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

DETAILS

DESIGNED BY : HS			
DRAWN BY : HS	DATE : 07-13-2022	SCALE: AS SHOWN	
CHECKED BY : AL	DATE :	E-403	SHEET 82 OF 89
APPROVED BY : JSD	DATE :		

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ABBREVIATIONS

A.B.	ANCHOR BOLT
ADDL.	ADDITIONAL
ALT.	ALTERNATE
ARCH.	ARCHITECTURAL
B.	BOTTOM
BM.	BEAM
B.O.F.	BOTTOM OF FOOTING
BRG.	BEARING
BTN.	BETWEEN
BOT.	BOTTOM
CBC	CALIFORNIA BUILDING CODE
C.G.	CENTER OF GRAVITY
C.I.P.	CAST-IN-PLACE
CL	CENTER LINE
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
DBA.	DOWEL BAR ANCHOR
DL	DEAD LOAD
DIA.	DIAMETER
DIM.	DIMENSION
DO	DITTO (REPEAT)
DWG.	DRAWING
DWL.	DOWEL
(E)	EXISTING
EA.	EACH
E.F.	EACH FACE
EL.	ELEVATION
ELEC.	ELECTRICAL
EMBED.	EMBEDMENT
EQ.	EQUAL OR EQUIVALENT
E.S.	EACH SIDE
E.W.	EACH WAY
EXT.	EXTERIOR
FDN.	FOUNDATION
F.F.	FINISHED FLOOR
F.O.C.	FACE OF CONCRETE
F.O.M.	FACE OF MASONRY
F.S.	FAR SIDE
FTG.	FOOTING
GA	GAUGE
GALV.	GALVANIZED
GR	GRADE
H.	HORIZONTAL
HT.	HEIGHT
HORIZ.	HORIZONTAL
I.D.	INSIDE DIAMETER
I.F.	INSIDE FACE
I JST.	I-JOIST
INT.	INTERIOR
I.O.R.	INSPECTOR OF RECORD
JT.	JOINT
LDGR.	LEDGER
L.L.	LIVE LOAD
LT. WT.	LIGHT WEIGHT
MATL.	MATERIAL
MAX.	MAXIMUM
M.B.	MACHINE BOLT
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.F.	OUTSIDE FACE
O.H.	OPPOSITE HAND
OPNG.	OPENING
OPP.	OPPOSITE
ORIG.	ORIGINAL
PL	PLATE
R	RADIUS
REF.	REFERENCE
REINF.	REINFORCEMENT
REQD.	REQUIRED
R.W.	RETAINING WALL
SCHED.	SCHEDULE
SECT.	SECTION
SEOR	STRUCTURAL ENGINEER ON RECORD
SEP.	SEPARATION
SIM.	SIMILAR
SPEC.	SPECIFICATION
SQ.	SQUARE
S.S.	STAINLESS STEEL
STD.	STANDARD
STIFF.	STIFFENERS
STR.	STRUCTURAL
STR. I	STRUCTURAL I
T.	TOP
T&B	TOP & BOTTOM
T&G	TONGUE & GROOVE
THK.	THICKNESS/THICK
T.O.P.	TOP OF PARAPET
T.O.S.	TOP OF SLAB
T.O.W.	TOP OF WALL
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
WT.	WEIGHT
W/	WITH
W/O	WITHOUT
XS	EXTRA STRONG (STEEL PIPE)
XXS	DOUBLE EXTRA STRONG (STEEL PIPE)

GENERAL STRUCTURAL NOTES:

GENERAL:

THE STRUCTURAL CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE STRUCTURE IS DESIGNED TO BE A STABLE UNIT AS A COMPLETED WHOLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DESIGN, ERECT AND INSPECT TEMPORARY SHORES, BRACES, ETC. TO SUPPORT THE STRUCTURE AGAINST ALL ANTICIPATED LOADS INCLUDING GRAVITY, WIND AND LATERAL EARTH PRESSURE UNTIL ITS COMPLETION. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THESE METHODS OF CONSTRUCTION. CONSTRUCTION MATERIAL SHALL BE PLACED ON FRAMED FLOORS AND ROOFS SUCH THAT THE DESIGN LIVE LOADS ARE NOT EXCEEDED.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS PRIOR TO STARTING CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE ARCHITECT.

WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THE LATEST EDITIONS OF THE CALIFORNIA BUILDING CODE AND ALL "A" CHAPTER AMENDMENTS AND TESTING STANDARDS.

NOTES AND DETAILS ON THE DRAWINGS TAKE PRECEDENCE OVER THE GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO SPECIFIC DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT. "TYPICAL" DETAILS ARE NOT FLAGGED ON THE DRAWINGS, BUT APPLY UNLESS NOTED OTHERWISE.

COORDINATION:

ALL DRAWINGS ARE CONSIDERED TO BE PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE DRAWINGS AND SPECIFICATIONS AMONG THE SUBCONTRACTORS AND ARCHITECT PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES THAT ARE FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO START OF CONSTRUCTION. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR ARCHITECT.

COORDINATION SHALL INCLUDE, BUT NOT BE LIMITED TO, VERIFYING THE LOCATION AND WEIGHT OF ALL MECHANICAL AND ELECTRICAL EQUIPMENT AS WELL AS THE SIZE AND LOCATION OF ALL MECHANICAL OPENINGS IN ROOFS, FLOORS AND WALLS. UNLESS OTHERWISE NOTED ON THE DRAWINGS, DO NOT PENETRATE ANY STRUCTURAL ELEMENTS SUCH AS BEAMS, COLUMNS, WALLS, SLABS, ETC. WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER THROUGH THE ARCHITECT.

ALL DEPRESSIONS, ELEVATIONS AND SLOPES SHOULD BE COORDINATED WITH THE ARCHITECT AND PLANNED FINISHES. ALL WEATHER EXPOSED SURFACES SHOULD BE SLOPED TO DRAIN PER ARCHITECTURAL OR OTHER DRAWINGS.

COORDINATION SHALL INCLUDE, BUT NOT BE LIMITED TO, DETERMINING THE LOCATION OF ALL EXISTING UTILITY LINES THAT MAY INTERFERE WITH THE INSTALLATION OF THE NEW STRUCTURAL ELEMENTS. THE CONTRACTOR SHALL INFORM THE OWNER IF INTERFERENCE IS ENCOUNTERED. THE OWNER WILL DETERMINE IF THE LINES ARE TO BE REMOVED OR RELOCATED.

UNLESS OTHERWISE NOTED ON THE DRAWINGS, DO NOT PENETRATE ANY STRUCTURAL ELEMENTS SUCH AS BEAMS, COLUMNS, WALLS, SLABS, ETC. WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

SHOP DRAWINGS AND SUBMITTALS:

SHOP DRAWINGS AND SUBMITTALS TO THE ENGINEER ARE REQUIRED FOR ALL STRUCTURAL WORK, UNLESS OTHERWISE AGREED TO BY THE ARCHITECT/ENGINEER. NO WORK SHALL PROCEED WITHOUT THE REVIEW AND APPROVAL OF SHOP/ERECTION/LAYOUT DRAWINGS BY THE ARCHITECT AND ENGINEER. ALL SUBMITTALS SHALL BE MADE IN A TIMELY MANNER ALLOWING ADEQUATE TIME AS NEEDED BY THE ARCHITECT AND ENGINEER FOR REVIEW.

THE CONTRACTOR SHALL REVIEW AND APPROVE ALL SHOP DRAWINGS PRIOR TO ENGINEERING REVIEW. SUBMISSIONS FOR ENGINEERING REVIEW SHALL INCLUDE A REPRODUCIBLE AND ONE COPY; REPRODUCIBLE WILL BE MARKED AND RETURNED. ELECTRONIC SUBMITTALS MAY BE ACCEPTED.

ANY STRUCTURAL ENGINEERING DESIGN PROVIDED BY OTHERS SHALL BE SUBMITTED FOR REVIEW AND SHALL BEAR THE SEAL OF A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED.

TRADES PROVIDING SHOP DRAWINGS SHOULD PROPERLY COORDINATE WITH ALL OTHER ALL OTHER TRADES AND SHOW OTHER POSSIBLE CONFLICTS OR OVERLAPPING ELEMENTS FROM OTHER TRADES ON THEIR SUBMITTAL FOR REVIEW.

REQUIRED SHOP DRAWINGS AND SUBMITTALS:

STRUCTURAL STEEL SHOP DRAWINGS AND MILL CERTS
CONCRETE REINFORCEMENT SHOP DRAWINGS AND MILL CERTS
ANCHOR BOLT LAYOUT AND MATERIAL SPECS
EXPANSION ANCHORS AND EPOXY PRODUCTS
STEEL DECKING SHOP DRAWINGS AND SECTION PROPERTIES
CONCRETE MIX DESIGNS AND GROUT PRODUCTS

INSPECTIONS AND SPECIAL INSPECTIONS:

THE OWNER SHALL EMPLOY A GENERAL INSPECTOR TO PROVIDE INSPECTION PER THE CBC AND LOCAL CODES. ALL INSPECTORS SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION.

THE OWNER WILL EMPLOY AN ICBO CERTIFIED SPECIAL INSPECTOR TO PROVIDE INSPECTION OF THE FOLLOWING ITEMS PER CBC SECTION 1701 AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION:

CONCRETE:
DURING THE PLACEMENT OF CONCRETE AND THE TAKING OF TEST SPECIMENS. SEE PROJECT SPECIFICATIONS FOR FREQUENCY OF TESTING.

REINFORCING STEEL:
DURING THE PLACEMENT OF REINFORCING STEEL IN REINFORCED CONCRETE.

FIELD WELDING:
INSPECTION ACCORDING TO CBC TABLE 1705A.2.1 FOR ALL STRUCTURAL WELDING INCLUDING BUT NOT LIMITED TO JOISTS, BEAMS, COLUMNS, BRACING, STEEL DECK, HEADED STUDS, REINFORCING STEEL, ETC.

HIGH STRENGTH BOLTING:
DURING BOLT INSTALLATION AND TIGHTENING OPERATIONS.

POST-INSTALLED ANCHORS:
DURING PLACEMENT OF EPOXY ANCHORS.
PERIODIC INSPECTION OF MECHANICAL POST-INSTALLED ANCHORS

STRUCTURAL MASONRY:
DURING THE PREPARATION OF PRISMS, SAMPLING AND PLACEMENT OF MASONRY UNITS, PLACEMENT OF REINFORCING, INSPECTION OF GROUT SPACE IMMEDIATELY PRIOR TO CLOSING CLEANOUTS AND DURING THE PLACEMENT OF GROUT.

STRUCTURAL OBSERVATIONS:

STRUCTURAL OBSERVATION IS REQUIRED FOR THE STRUCTURAL SYSTEM IN ACCORDANCE WITH CBC CHAPTER 17A. STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION OF THE ELEMENTS AND CONNECTIONS OF THE STRUCTURAL SYSTEMS AT SIGNIFICANT CONSTRUCTION STAGES AND THE COMPLETED STRUCTURE FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. STRUCTURAL OBSERVATION DOES NOT WAIVE THE RESPONSIBILITY FOR THE INSPECTIONS REQUIRED OF THE BUILDING INSPECTOR OR THE DEPUTY INSPECTOR. STRUCTURAL OBSERVATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF CAC CHAPTER 7 AND CBC CHAPTER 17A.

THE STRUCTURAL OBSERVER SHALL PERFORM SITE VISITS AT THOSE STEPS IN THE PROGRESS OF THE WORK THAT ALLOW FOR CORRECTION OF DEFICIENCIES WITHOUT SUBSTANTIAL EFFORT OR UNCOVERING OF THE WORK INVOLVED. AT A MINIMUM, THE FOLLOWING SIGNIFICANT CONSTRUCTION STAGES REQUIRE A SITE VISIT AND AN OBSERVATION REPORT FROM THE STRUCTURAL OBSERVER.

CONSTRUCTION STAGES AND ELEMENTS TO BE OBSERVED

PRIOR TO CONCRETE PLACEMENT/FOUNDATION REINFORCEMENT AND ANCHOR BOLTS
COMPLETION OF STELL FRAME.

CODE:

2019 CALIFORNIA BUILDING CODE

DESIGN LIVE LOADS:
ROOF - - -

STRUCTURAL STEEL:

ROLLED SHAPES OTHER THAN WIDE-FLANGE SHAPES, ALL PLATES, BARS AND RODS	ASTM A36, Fy = 36 KSI
ALL WIDE-FLANGE SHAPES	ASTM A992, Fy = 50 KSI
HSS STEEL	ASTM A500 GR. B
PIPE STEEL	ASTM A53, Fy = 35 KSI
BOLTS	ASTM A307
ANCHOR BOLTS	ASTM A36 ROD STOCK OR F1554 GR. 36
DEFORMED BAR ANCHORS	ASTM A496, Fy = 70 KSI

ALL STEEL EXPOSED TO WEATHER TO BE HOT-DIPPED GALVANIZED U.N.O.

FABRICATION AND ERECTION:

LATEST AISC AND AWS CODES APPLY. FABRICATE AND ERECT IN ACCORDANCE WITH LATEST EDITION OF AISC "SPECIFICATION FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS". SPLICING OF STRUCTURAL MEMBERS IS NOT PERMITTED UNLESS NOTED ON THE DRAWINGS. ALL BEAMS SHALL BE ERECTED WITH THE NATURAL CAMBER UPWARDS.

ALL SURFACES FOR SLIP-CRITICAL BOLTED CONNECTIONS SHALL BE FREE OF PAINT, INCLUDING ANY INADVERTENT OVERSPRAY, IN AREAS CLOSER THAN ONE BOLT DIAMETER, BUT NOT LESS THAN ONE INCH, FROM THE EDGE OF ANY HOLE AND AT ALL AREAS WITHIN THE BOLT PATTERN.

WELDING:

ALL WELDING SHALL BE BY CERTIFIED WELDERS HAVING CURRENT EXPERIENCE IN TYPE OF WELD SHOWN ON DRAWINGS OR NOTES. CERTIFICATES SHALL BE THOSE ISSUED BY AN ACCEPTED TESTING AGENCY. ALL WELDING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF AWS "CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION". USE E70 SERIES LOW HYDROGEN ELECTRODES. SHOP WELDS AND FIELD WELDS SHALL BE SHOWN ON SHOP DRAWINGS. ALL COMPLETE PENETRATION WELDS SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING AGENCY. ALL DEFORMED BAR ANCHORS, HEADED STUDS AND THREADED STUDS SHALL BE END WELDED PER MANUFACTURER'S RECOMMENDATIONS.

BOLTS:

ALL BOLTS, ANCHOR BOLTS, EXPANSION BOLTS, ETC., SHALL BE INSTALLED WITH STEEL WASHERS. USE TYPE X BOLTS U.N.O. PER LATEST EDITION OF AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" AND SHALL BE TIGHTENED TO THE SNUG-TIGHT CONDITION AS DEFINED BY AISC UNLESS NOTED OTHERWISE.

SNUG-TIGHT IS DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. SNUG TIGHTENING SHALL PROGRESS SYSTEMATICALLY FROM THE MOST RIGID PART OF THE CONNECTION TO THE FREE EDGES, AND THEN THE BOLTS OF THE CONNECTION SHALL BE RETIGHTENED IN A SIMILAR SYSTEMATIC MANNER AS NECESSARY UNTIL ALL BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED.

EPOXY ANCHOR RODS - CMU MASONRY:

EPOXY ANCHORS NOTED IN DRAWINGS IN CMU MASONRY ARE HILTI HIT-HY 270 ANCHORS AND SHALL BE DESIGNED AND INSTALLED PER ESR-4143 U.N.O. FOR ANY PRODUCT SUBSTITUTION, CONTRACTOR SHALL PROVIDE CALCULATION SUBMITTAL FOR REVIEW BY SEOR SHOWING CAPACITY EQUIVALENT TO OR BETTER THAN SPECIFIED ANCHORS. ANY PRODUCT SUBSTITUTION MUST HAVE AN ICC REPORT.

WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING CONCRETE MASONRY UNITS (CMU), USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR.

ALL DRILLED HOLES SHALL BE BLOWN OUT BRUSHED AND BLOWN OUT WITH COMPRESSED AIR COMPLETELY BEFORE BOLT INSTALLATION PER ESR REPORT. UNCLEAN HOLE INSTALLATIONS ARE NOT PERMITTED ON THIS PROJECT.

ANCHOR BOLTS SHALL NOT BE INSTALLED INTO HEAD JOINTS OR OTHERWISE INADEQUATE CONCRETE SUBSTRATE. WHERE AN ANCHOR IS SHOWN INTO SUCH MATERIALS THE SEOR SHALL BE NOTIFIED AND CONSTRUCTION SHALL WAIT FOR FURTHER INSTRUCTION.

ASTM A-193 B7 ROD SHALL BE USED U.N.O.. ASTM A-36 ROD MAY BE USED WITH APPROVAL FROM THE SEOR.

ALL WALL ANCHORS SHALL BE PROTECTED FROM WEATHER EXPOSURE. ANY WEATHER EXPOSED EXTERIOR ANCHOR RODS SHALL BE STAINLESS STEEL. ANY STAINLESS STEEL SUBSTITUTIONS NOT SHOWN ON DRAWINGS SHALL BE APPROVED BY SEOR.

INSTALLERS OF ANY ADHESIVE ANCHORS IN UPWARDLY INCLINED OR VERTICAL ORIENTATIONS SHALL BE CERTIFIED INSTALLERS, AND SHALL BE TRAINED ON-SITE BY THE MANUFACTURER. ON-SITE TRAINING SHALL OCCUR FOR THIS PROJECT IN ADDITION TO ANY PREVIOUS EXPERIENCE OR TRAINING.

PERIODIC SPECIAL INSPECTION IN ACCORDANCE WITH THE CBC SECTION 1705 IS REQUIRED DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, MASONRY TYPE, MASONRY COMPRESSIVE STRENGTH, ADHESIVE IDENTIFICATION AND EXPIRATION DATE, HOLE DIMENSIONS, HOLE CLEANING PROCEDURES, ANCHOR SPACING, EDGE DISTANCE, WALL THICKNESS, TIGHTENING TORQUE, ANCHOR EMBEDMENT, AND ADHERENCE TO THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. THE SPECIAL INSPECTOR MUST ALWAYS BE ON SITE FOR THE FIRST ANCHOR INSTALLATIONS. THE SPECIAL INSPECTOR MUST VERIFY THE INITIAL INSTALLATIONS OF EACH TYPE AND SIZE OF ADHESIVE ANCHOR BY CONSTRUCTION PERSONNEL ON-SITE. SUBSEQUENT INSTALLATIONS OF THE SAME ANCHOR TYPE AND SIZE BY THE SAME CONSTRUCTION PERSONNEL SHALL BE PERMITTED TO BE PERFORMED IN THE ABSENCE OF THE SPECIAL INSPECTOR. ANY CHANGE IN THE ANCHOR PRODUCT OR PERSONNEL REQUIRES AN INITIAL INSPECTION.

ANY WALL ENDS THAT OCCUR WITHIN THE CRITICAL EDGE DISTANCE SHOWN IN THE ESR SHALL BE REPORTED TO THE SEOR UNLESS THE MINIMUM EDGE DISTANCE IS SPECIFICALLY DETAILED AND SHOWN IN A DETAIL.

ADHESIVE ANCHORS WHICH MAY BE EXPOSED TO ABOVE 110 DEGREES F, SHALL BE BROUGHT TO THE ATTENTION OF THE SEOR.

TENSION TEST NOTES WHEN APPLICABLE:

TEST REQUIRMENTS AND FREQUENCY SHALL BE IN CONFORMANCE WITH CBC 1910A.5.

REACTION LOADS FROM TEST FIXTURES MAY BE APPLIED CLOSE TO THE ANCHOR BEING TESTED, PROVIDED THE ANCHOR IS NOT RESTRAINED FROM WITHDRAWING BY THE FIXTURE(S).

TEST EQUIPMENT SHALL BE CALIBRATED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH STANDARD RECOGNIZED PROCEDURES.

TEST LOADS ARE PROVIDED ON DETAILS. PER CBC 1910A.5.4, TEST LOADS ARE 2 TIMES THE MAXIMUM ALLOWABLE LOAD OR 1.25 TIMES THE MAXIMUM DESIGN STRENGTH OF ANCHORS AND NEED NOT EXCEED 80 PERCENT OF THE NOMINAL YIELD STRENGTH OF THE ANCHOR ELEMENT.

THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS: HYDRAULIC RAM METHOD: THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD. A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER BECOMES LOOSE.

TORQUE TESTING EPOXY ANCHORS IS NOT PERMITTED.

IF ANY ANCHOR FAILS TESTING, NOTIFY THE SEOR FOR FURTHER TESTING FREQUENCY OR REVISED TEST LOADS.

BID SET - NOT FOR CONSTRUCTION

Troller Mayer Associates, Inc
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1403 Kenneth Road, Suite B
Glendale, California 91201-1421
Ph:(818)956-8101 Fx:(818) 956-0120

NO.	REVISION DESCRIPTION	BY:
1	BID SET - NOT FOR CONSTRUCTION 6-15-2023	PVB

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Encino, CA 91436
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REGISTERED PROFESSIONAL ENGINEER PAUL VAN BENSCOTER No. S-4715 STRUCTURAL STATE OF CALIFORNIA

PLOT DATE: 07/05/2022

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
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CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

GENERAL NOTES

DESIGNED BY :	MH		
DRAWN BY :	LMC/MBH	DATE : 07-05-2022	SCALE: AS SHOWN
CHECKED BY :	MH/PVB	DATE :	S0.2
APPROVED BY :	PVB	DATE :	SHEET 84 OF 89

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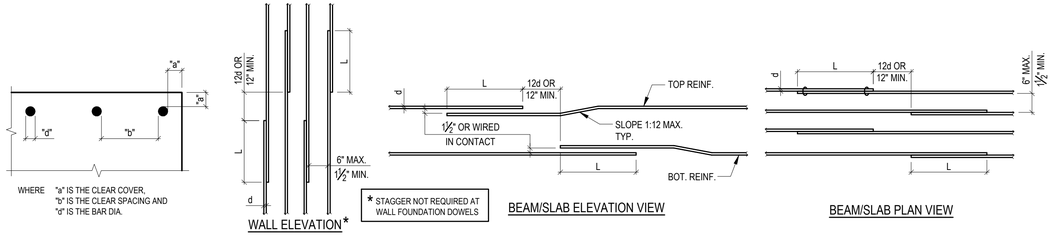
BID SET - NOT FOR CONSTRUCTION

LAP SPLICE SCHEDULE "CLASS B" (STRAIGHT BARS)																	
	CONCRETE STRENGTH Fc'	BAR															
		#4		#5		#6		#7		#8		#9		#10		#11	
		TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER
CLEAR COVER ≥ d AND CLEAR SPACING ≥ 2d	3000 PSI	37	29	47	36	56	43	81	63	93	72	105	81	118	91	131	101
	4000 PSI	33	25	41	31	49	37	71	54	81	62	91	70	102	79	113	87
	5000 PSI	29	23	36	28	43	34	63	49	72	56	81	63	92	70	102	78
OTHER CASES	3000 PSI	56	43	70	54	84	65	122	94	139	107	157	121	177	136	196	151
	4000 PSI	49	37	61	47	73	56	106	81	121	93	136	105	153	118	170	131
	5000 PSI	43	32	54	42	65	50	95	73	108	83	122	94	137	106	152	117

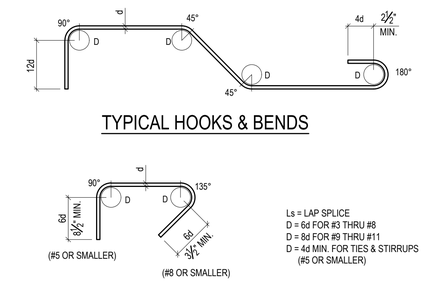
DEVELOPMENT LENGTH SCHEDULE "CLASS A" (STRAIGHT & HOOKED BARS)																	
		CONCRETE STRENGTH Fc'	BAR														
			#4		#5		#6		#7		#8		#9		#10		#11	
			TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER
STRAIGHT	CLEAR COVER ≥ d AND CLEAR SPACING ≥ 2d	3000 PSI	29	22	36	28	43	33	63	48	72	55	81	62	91	70	101	78
		4000 PSI	25	19	31	24	37	29	54	42	62	48	70	54	79	61	87	67
		5000 PSI	23	17	28	22	34	26	49	38	56	43	63	48	70	54	78	60
	OTHER CASES	3000 PSI	43	33	54	42	65	50	94	72	107	83	121	93	136	105	151	116
		4000 PSI	37	29	47	36	56	43	81	63	93	72	105	81	118	91	131	101
		5000 PSI	34	26	42	32	50	39	73	56	83	64	94	72	106	81	117	90
HOOK	STANDARD	3000 PSI	11		14		17		20		22		25		28		31	
		4000 PSI	10		12		15		17		19		22		25		27	
		5000 PSI	9		11		13		15		17		20		22		24	

NOTE:
1. T=TOP BAR, L=LAP SPLICE LENGTH
2. "d" INDICATES BAR DIAMETER.
3. ALL DIMENSIONS SHOWN IN TABLE ABOVE ARE IN INCHES.

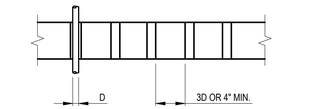
NOTES:
1. TABULATED VALUES AND NOTES ARE PER ACI318-14.
2. SPLICES SHALL BE CONTACT TENSION LAP SPLICES U.N.O.
3. LENGTHS SHOWN ARE FOR GRADE 60 UNCOATED BARS.
4. ALL LAP SPLICES SHALL BE CLASS B, UNLESS CLASS A IS SPECIFICALLY APPROVED BY THE ENGINEER.
5. THE SCHEDULES SHOWN ON THIS DETAIL APPLY TO NORMAL WEIGHT CONCRETE.
6. FOR LIGHTWEIGHT CONCRETE, INCREASE LAP SPLICE LENGTH BY 33%.
7. ALL HORIZONTAL AND VERITICAL SPLICES SHALL BE STAGGERED AS SHOWN BELOW WHERE POSSIBLE U.N.O. WHERE SPLICES ARE NOT STAGGERED THE LAP SPLICE LENGTH SHALL BE INCREASED BY 30%.
8. THE SMALLER BAR LAP LENGTH SHALL BE USED WHEN SPLICING BARS OF DIFFERENT SIZES.
9. TOP BARS ARE HORIZONTAL BARS PLACED SO THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
10. LAP LENGTHS SPECIFICALLY DETAILED ON DRAWINGS SHALL GOVERN IN LIEU OF THE LAP LENGTHS SCHEDULED. OTHERWISE, ALL DETAILING AND PLACEMENT OF REINFORCING SHALL COMPLY WITH THE LAP SPLICE SCHEDULES AND DETAILS.
11. BUNDLED BAR SPLICES:
    a) INDIVIDUAL BAR SPLICES WITHIN THE BUNDLE SHALL NOT OVERLAP EACH OTHER.
    b) INCREASE LAP LENGTH 20% AT THREE BAR BUNDLES.
    c) INCREASE LAP LENGTH 33% AT FOUR BAR BUNDLES.
12. FOR #14 AND #18 BARS, USE MECHANICAL SPLICE IN ACCORDANCE WITH ACI-318 REQUIREMENTS.
13. EPOXY COATED BAR DEVELOPMENT & SPLICES:
    HOOKS: INCREASE DEVELOPMENT & LAP LENGTH 20%.
    STRAIGHT BARS:
    a) WHEN CONCRETE COVER IS LESS THAN 3d OR CLEAR SPACING IS LESS THAN 6d, INCREASE DEVELOPMENT & LAP LENGTH 50%.
    b) FOR OTHER CASES, INCREASE LAP LENGTH 20%.
14. HOOK PORTION OF SCHEDULE ASSUMES A STANDARD 90° HOOK.
15. SEISMIC CONDITIONS:
    a) SEISMIC DIAPHRAGM AND COLLECTOR BARS REQUIRE NO INCREASE TO HOOK OR LAP SPLICE LENGTHS.
    b) VERTICAL BARS OF SPECIAL REINFORCED CONCRETE WALLS SHALL HAVE A BOTTOM BAR LAP SPLICE INCREASED BY 25%.
    c) DEVELOPMENT LENGTHS AND LAP SPLICES FOR CONCRETE SPECIAL MOMENT RESISTING FRAMES ARE NOT COVERED BY THIS DETAIL AND MUST MEET ALL ACI 318 CHAPTER 18 REQUIREMENTS.



5 TYPICAL NORMAL WEIGHT CONCRETE REINFORCING LAP SPLICE SCHEDULE

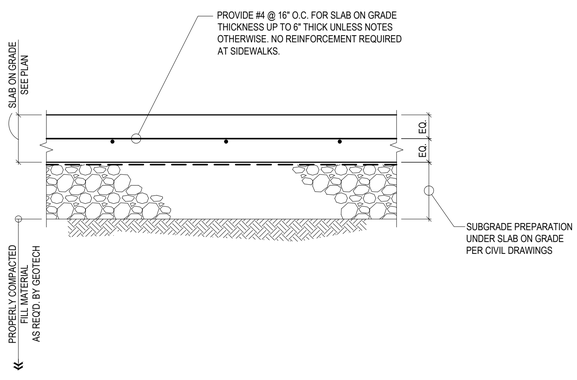


3 REINFORCING BAR DETAILS

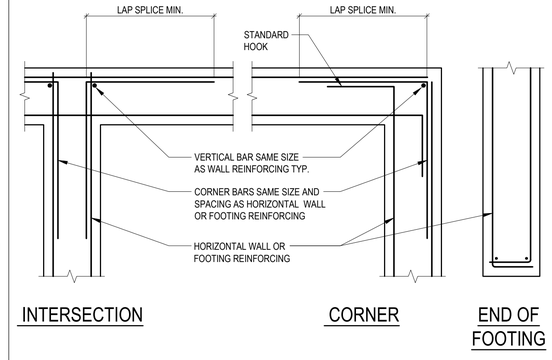


NOTE:
WHERE CLEAR DISTANCE BETWEEN SLEEVES IS IMPOSSIBLE, THIS AREA SHALL BE TREATED AS A SLAB OPENING PER TYPICAL DETAIL "REINFORCING AROUND STRUCTURAL SLAB OPENINGS".

4 PIPING OR CONDUIT IN OR THRU SLAB OR WALL



7 TYPICAL SLAB ON GRADE SUBGRADE PREPARATION



8 FOOTING REINFORCING AT CORNERS AND INTERSECTIONS

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16133 Ventura Boulevard, Suite 1010
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REGISTERED PROFESSIONAL ENGINEER — BENJAMIN P. MAYER — No. S-4715 — STRUCTURAL — STATE OF CALIFORNIA

PLOT DATE: 07/05/2022

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Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

CITY OF LA HABRA - VISTA GRANDE PARK

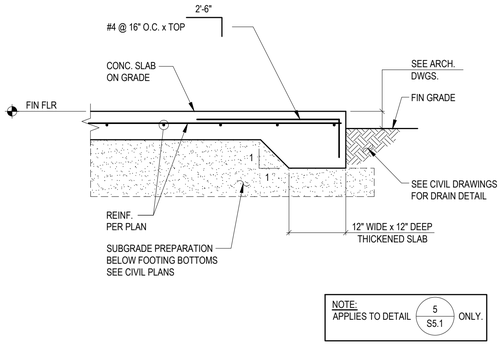
VISTA GRANDE PARK

TYPICAL DETAILS

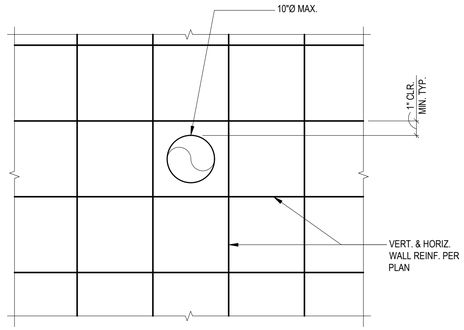
DESIGNED BY :	MH		
DRAWN BY :	LMC/MBH	DATE : 07-05-2022	SCALE: AS SHOWN
CHECKED BY :	MH/PVB	DATE :	SHEET S1.1
APPROVED BY :	PVB	DATE :	85 OF 89

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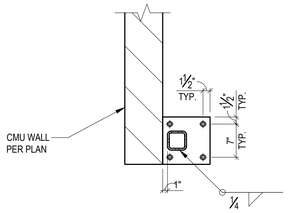
1 THICKENED SLAB FOUNDATION



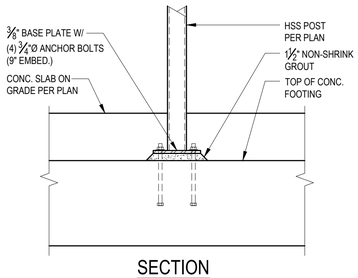
ELEVATION

NOTE:
DO NOT CUT VERT. OR HORIZ. WALL REINF.

2 TYP. CONC. OR CMU WALL SLEEVE DETAIL

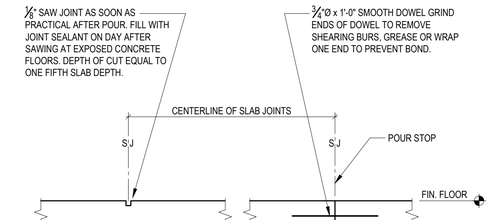


BASE PLATE



SECTION

3 HSS POST BASE

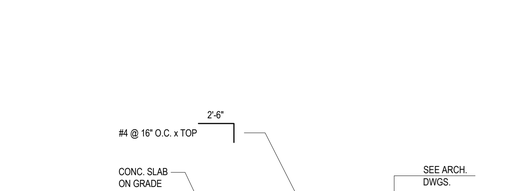


CONTROL JOINT CONSTRUCTION JOINT

JOINT TYPE IS CONTRACTOR'S OPTION

NOTE:
CONTROL JOINTS SHALL BE SPACED @ 20'-0" O.C. MAXIMUM EACH WAY. THE AREA BOUNDED BY CONTROL JOINTS OR CONSTRUCTION/CONTROL JOINTS SHALL NOT EXCEED 400 SQ. FT.

4 SLAB ON GRADE JOINT



S = 1/5 OF LAP SPLICE LENGTH OR 8 INCHES MAX.

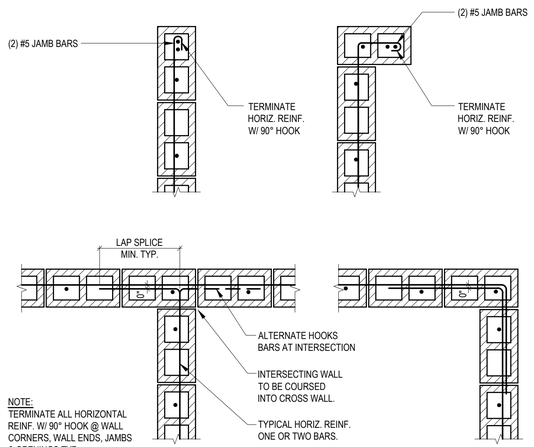
REINFORCEMENT IN MASONRY DEVELOPMENT LENGTH AND LAP SPLICE		
BAR SIZE	DEVELOPMENT & LAP SPLICE LENGTH	REMARKS
#3	2'-2"	SEE NOTE 7
#4	4'-0"	SEE NOTE 7
#5	5'-0"	SEE NOTE 7
#6	6'-0"	ONE LAYER ONLY SEE NOTE 7
#7	7'-0"	

TABLE BASED ON REQUIREMENTS OF ACI 530-11 (STRENGTH DESIGN)

DEVELOPMENT LENGTH AND LAP SPLICE NOTES:

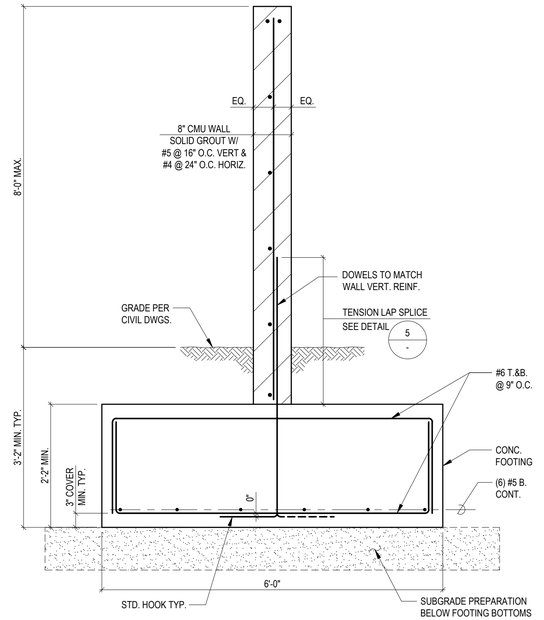
1. THIS TABLE IS FOR ALL GRADES OF REINFORCEMENT. F'm = 1500 PSI
2. THE MAXIMUM SIZE OF REINFORCEMENT SHALL BE NO. 7 BARS FOR 8" CMU.
3. THE CLEAR DISTANCE BETWEEN THE SURFACE OF A BAR AND ANY SURFACE OF MASONRY UNIT SHALL NOT BE LESS THAN ½" FOR COARSE GROUT.
4. CROSS WEBS OF HOLLOW UNITS MAY BE USED AS SUPPORT FOR HORIZONTAL WALL REINFORCEMENT.
5. MAXIMUM REINFORCEMENT AREA OF ANY ONE CELL SHALL BE 8% OF THE CELL AREA WITHOUT SPLICES AND 12% OF THE CELL AREA WITH SPLICES.
6. ALL REINFORCING BARS SHALL HAVE A MINMUM COVER, INCLUDING THE WALL OF THE MASONRY UNIT, OF AT LEAST ¾", 1½" TYPICAL AND 2" FOR SURFACES EXPOSED TO SOIL.
7. FOR EPOXY COATED REINFORCING BARS, INCREASE DEVELOPMENT LENGTH AND LAP SPLICE LENGTH BY 50%.

5 MASONRY REINFORCING LAP SPLICE SCHEDULE

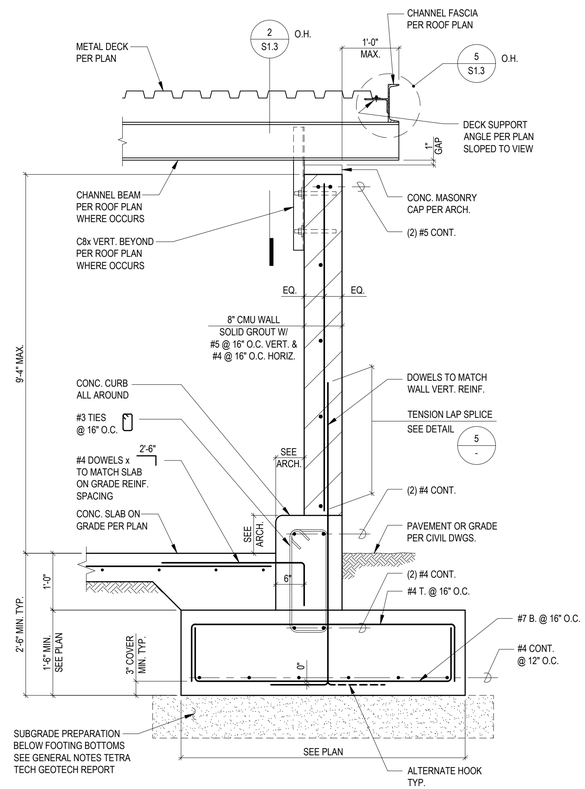


SINGLE CURTAIN WALL

6 CMU WALL REINFORCING AT CORNERS AND INTERSECTIONS



7 CMU SITE WALL SECTION CONCENTRIC



8 CMU WALL SECTION

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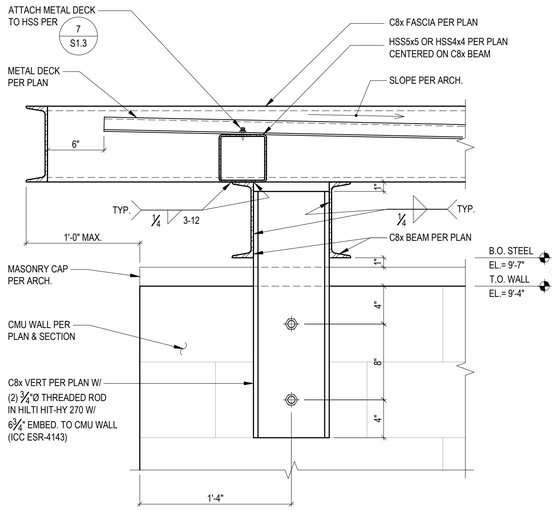
CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

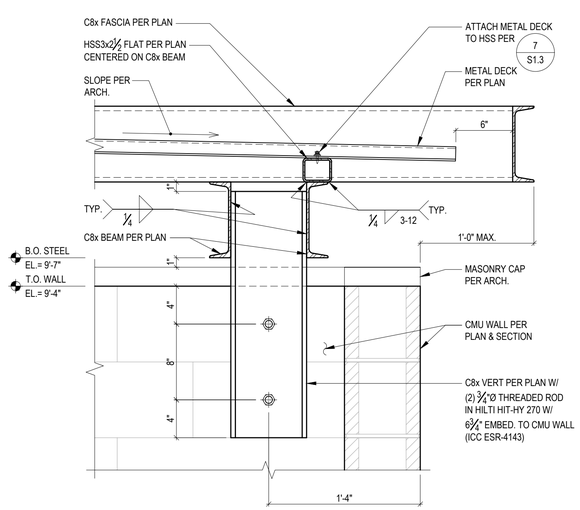
TYPICAL DETAILS

DESIGNED BY :	MH		
DRAWN BY :	LMC/MBH	DATE : 07-05-2022	SCALE: AS SHOWN
CHECKED BY :	MH/PVB	DATE :	S1.2
APPROVED BY :	PVB	DATE :	SHEET 86 OF 89

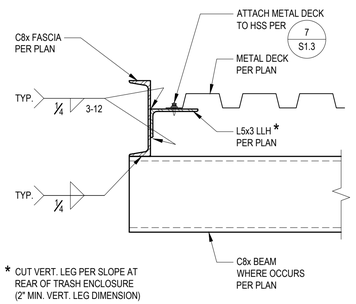
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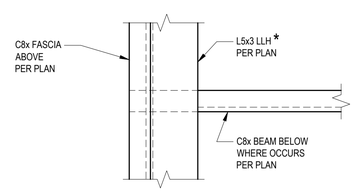
1 SECTION AT ROOF



2 SECTION AT ROOF

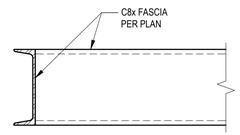


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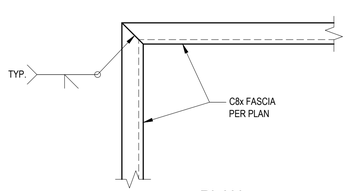


PLAN

5 CHANNEL FASCIA TO CHANNEL BEAM



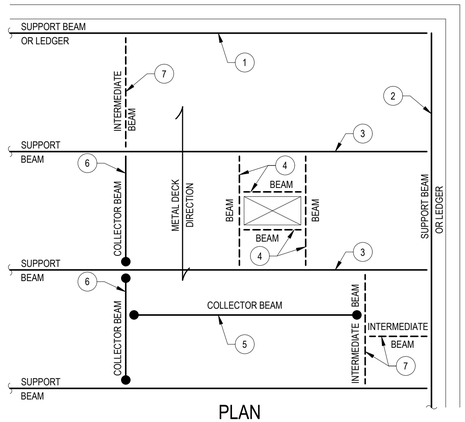
SECTION



PLAN

6 CHANNEL FASCIA MITERED CORNER

BID SET - NOT FOR CONSTRUCTION

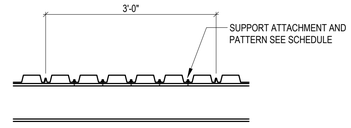


PLAN

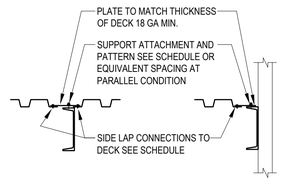
1. - PROVIDE ATTACHMENT PER A - AT PERPENDICULAR BOUNDARY FRAMING.
2. - B - AT PARALLEL BOUNDARY FRAMING.
3. - A - AT PERPENDICULAR SUPPORTS.
4. - A - OR B - AT THE PERIMETER OF FRAMED OPENING.
5. - A - AT PERPENDICULAR FRAMING MARKED AS A COLLECTOR ON PLANS.
6. - B - AT PARALLEL FRAMING MARKED AS A COLLECTOR.
7. - ATTACHMENT NOT REQUIRED AT OTHER INTERMEDIATE FRAMING.

METAL DECK SCHEDULE					
MARK	DECK	GAUGE	SUPPORT PATTERN	SIDE LAP CONNECTION	PROPERTIES I +S -S
1	VERCO PLB-36	20	EACH FLUTE EACH SUPPORT (6" O.C. MAX.)	HILTI S-SLC 01 M HWH @ 9" O.C. W/ NEOPRENE WASHERS	.216 .235 .248

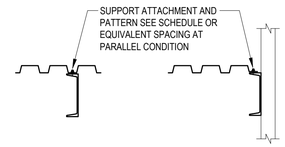
1. CONTRACTOR MAY SUBMIT ALTERNATIVE DECK SYSTEM TO STRUCTURAL ENGINEER OF RECORD. ALTERNATIVES MUST HAVE APPROVAL BY THE APPROPRIATE JURISDICTION AND A SHEAR STRENGTH EQUAL TO OR GREATER THAN WHAT IS SHOWN FOR STRUCTURAL ENGINEER OF RECORD APPROVAL.
2. DECK TO HAVE 2" BEARING MIN. AT ENDS AND 4" BEARING MIN. AT INTERIOR SUPPORTS AT PERPENDICULAR SUPPORTS.



SUPPORTS PERPENDICULAR TO DECK FLUTES (A)

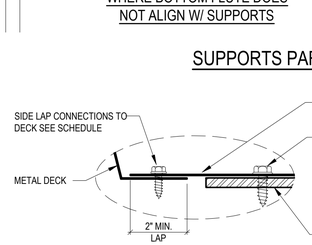


WHERE BOTTOM FLUTE DOES NOT ALIGN W/ SUPPORTS

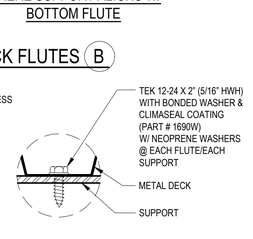


WHERE SUPPORT ALIGNS W/ BOTTOM FLUTE

SUPPORTS PARALLEL TO DECK FLUTES (B)

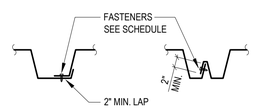


WHERE BOTTOM FLUTE DOES NOT ALIGN W/ SUPPORTS



WHERE SUPPORT ALIGNS W/ BOTTOM FLUTE

FASTENER DETAIL



SIDE LAP CONNECTION BETWEEN 3'-0" WIDE SHEETS

7 METAL ROOF DECK SCREW / SHOTPIN FASTENING

Troller Mayer Associates, Inc
Landscape Architecture Planning Urban Design
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Glendale, California 91201-1421
Ph:(818)956-8101 Fx:(818) 956-0120

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PLOT DATE: 07/05/2022

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Diamond Bar, CA 91765
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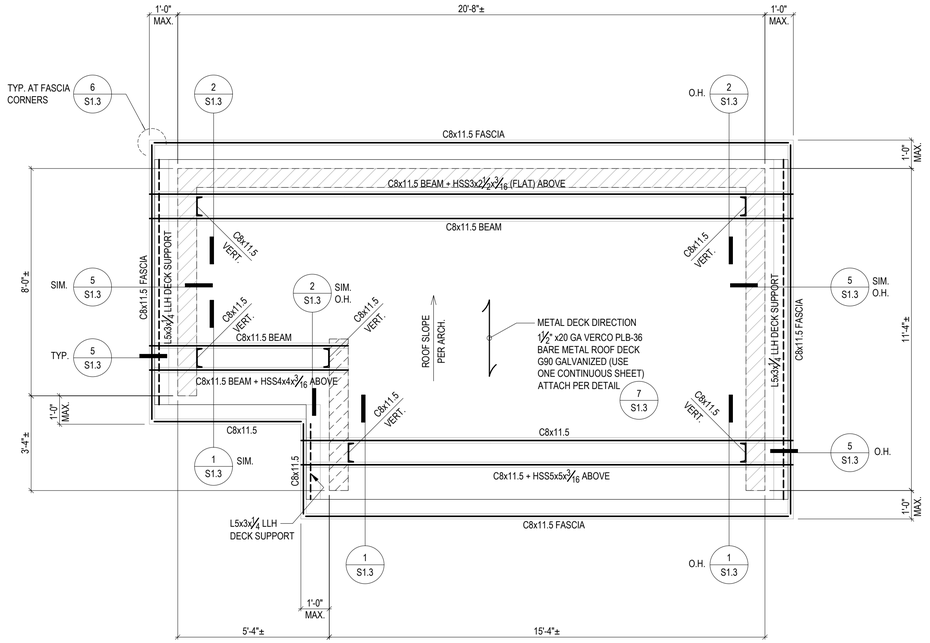
CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

TYPICAL DETAILS

DESIGNED BY :	MH				
DRAWN BY :	LMC/MBH	DATE : 07-05-2022	SCALE: AS SHOWN		
CHECKED BY :	MH/PVB	DATE :	S1.3	SHEET	87 OF 89
APPROVED BY :	PVB	DATE :			

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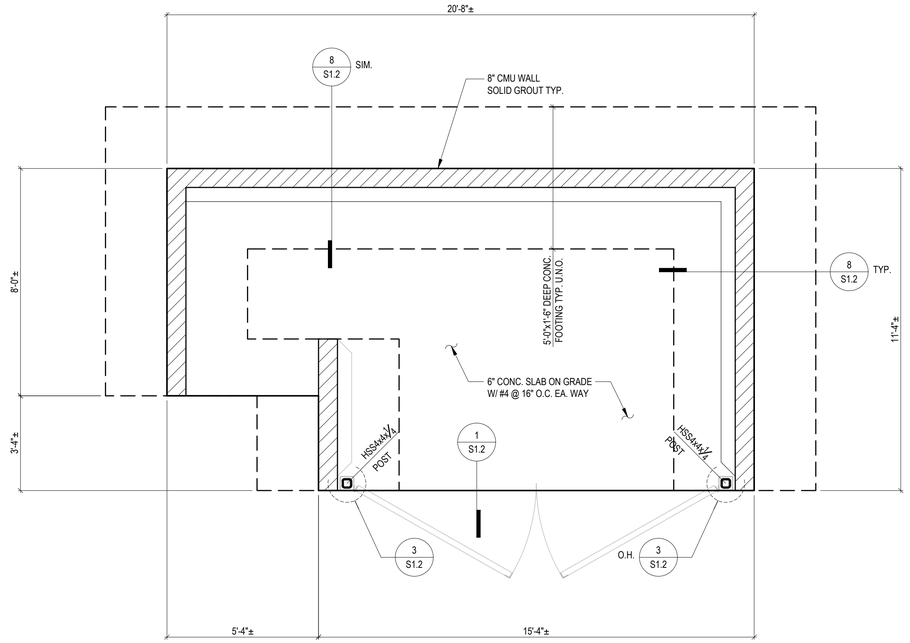


ROOF FRAMING NOTES

1. SEE ARCH. DRAWINGS FOR LOCATION OF WALLS AND POSTS. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
3. COLUMN SIZES ARE SPECIFIED AT BASE OF COLUMN.
4. FOR FRAMING DETAILS NOT REFERENCED ON PLAN, SEE SHEET S1.3.

2 TRASH ENCLOSURE ROOF FRAMING PLAN

SCALE: 3/8"=1'-0"



NOTES:

1. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
2. SEE ARCHITECTURAL DRAWING FOR STEPS, DEPRESSIONS, FLOOR DRAINS, SLOPES, CURBS, DROPS AND FLOOR ELEVATIONS.
3. SEE ARCHITECTURAL DRAWINGS FOR ALL YARDWORK.
4. ALL FOOTING EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY THE SOILS ENGINEER AND INSPECTOR PRIOR TO THE PLACEMENT OF REINFORCING. SEE GENERAL NOTES FOR SUBGRADE PREPARATION.
5. FOR CONCRETE DETAILS NOT REFERENCED ON PLAN, SEE SHEETS S1.1 & S1.2.

1 TRASH ENCLOSURE FOUNDATION PLAN

SCALE: 3/8"=1'-0"

BID SET - NOT FOR CONSTRUCTION

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NO.	REVISION DESCRIPTION	BY:
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PLOT DATE: 07/05/2022

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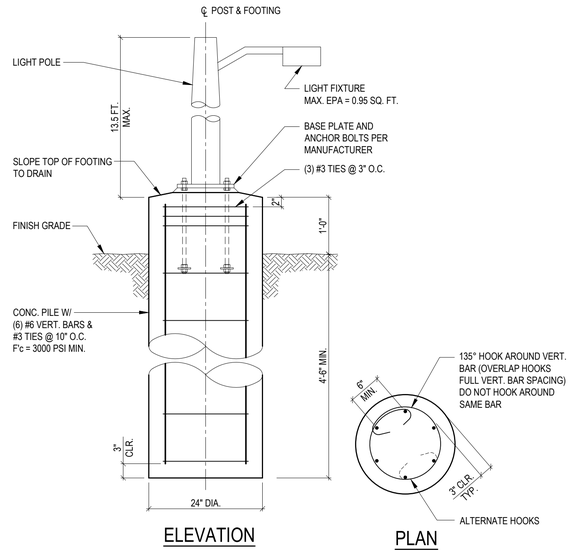
CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

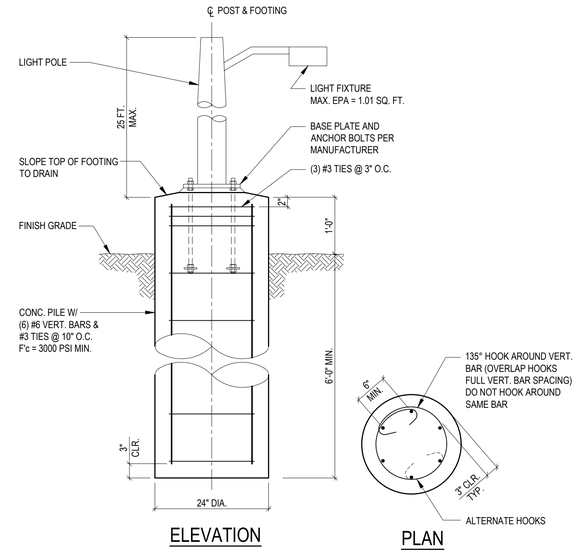
TRASH ENCLOSURE PLANS

DESIGNED BY :	MH		
DRAWN BY :	LMC/MBH	DATE : 07-05-2022	SCALE: AS SHOWN
CHECKED BY :	MH/PVB	DATE :	S2.1
APPROVED BY :	PVB	DATE :	SHEET 88 OF 89

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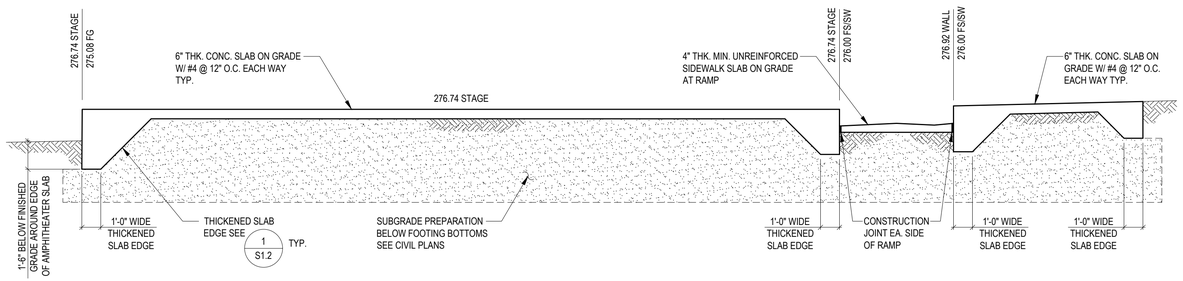


3 TYPICAL 13.5 FT. LIGHT POLE FOOTING



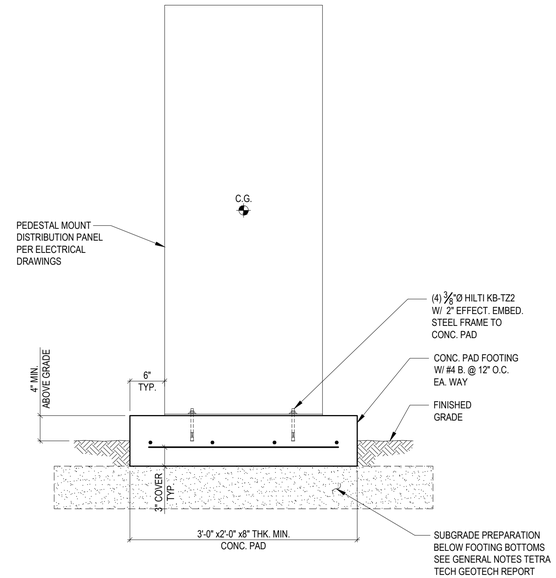
4 TYPICAL 25 FT. LIGHT POLE FOOTING

BID SET - NOT FOR CONSTRUCTION

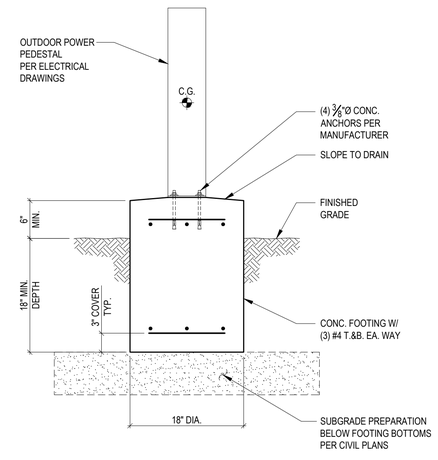


NOTES:
1. REFER TO SECTION 1B/C-302 FOR ELEVATIONS, DIMENSIONS AND C-202 FOR ADDITION INFORMATION.
2. SEE CIVIL PLAN FOR SLAB ON GRADE CONTROL JOINT LAYOUT.

5 AMPHITHEATER CONC. SLAB ON GRADE SECTION



7 POWER DISTRIBUTION EQUIPMENT PAD FOOTING AND ANCHORAGE



8 POWER PEDESTAL FOOTING AND ANCHORAGE

Troller Mayer Associates, Inc
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NO.	REVISION DESCRIPTION	BY:
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REGISTERED PROFESSIONAL ENGINEER PAUL VAN BENSCOTER No. S-4715 STRUCTURAL STATE OF CALIFORNIA

PLOT DATE: 07/05/2022

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CITY OF LA HABRA - VISTA GRANDE PARK

VISTA GRANDE PARK

DETAILS

DESIGNED BY :	MH		
DRAWN BY :	LMC/MBH	DATE : 07-05-2022	SCALE: AS SHOWN
CHECKED BY :	MH/PVB	DATE :	S5.1
APPROVED BY :	PVB	DATE :	SHEET 89 OF 89

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APPENDIX “B”

GEOTECHNICAL DESIGN REPORT
JUNE 23, 2023

APPENDIX "B"

TETRA TECH

Geotechnical Engineering ● Engineering Geology

Geotechnical Design Report
Vista Grande Park
City of La Habra, California



Prepared for:

City of La Habra
Department of Public Works
621 W. Lambert Rd.
La Habra, CA 90631

Prepared by:

Tetra Tech
21700 Copley Drive, #200
Diamond Bar, California 91765

June 23, 2023
Project No. BAS 19-142E

TETRA TECH

Project No. BAS 19-142E
June 23, 2023

City of La Habra
c/o Mr. Greg Saul
Tetra Tech SWW
21700 Copley Drive, #200
Diamond Bar, California 91765

Subject: **GEOTECHNICAL DESIGN REPORT**
PROPOSED PARK IMPROVEMENTS
Vista Grande Park
La Habra, California

Dear Mr. Saul;

Tetra Tech is pleased to submit the results of our geotechnical investigation for the proposed improvements to Vista Grande Park located at the closed municipal solid waste landfill in La Habra, California. The purpose of our investigation was to evaluate the subsurface conditions and to provide recommendations for design and construction of the proposed improvements. This report includes a brief description of the proposed development, discussions regarding field and laboratory investigative efforts, geology and subsurface conditions, engineering seismology, and geotechnical conclusions and recommendations for design and construction of the proposed improvements. This investigation excludes the assessment of slope stability of the perimeter landfill slopes. The appendices to the report include logs of borings from the current and previous investigations, current and previous laboratory testing results, drilling soil waste disposal records, and pertinent site history documents.

The opportunity to provide professional services on this project is appreciated. If you have any questions regarding this report or if we can be of further service, please do not hesitate to contact the undersigned.

Respectfully submitted,
Tetra Tech BAS, Inc.



David M. Luka, CEG
Supervising Geologist



Yonglang Li, PhD, GE
Senior Engineer



Peter Skopek, PhD, GE
Principal Engineer

Distribution: Addressee (pdf by email greg.saul@tetratech.com)

Filename: Vista Grande Park - La Habra GDR 2021-07-23.docx

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Plate 1 – Site Plan and Boring Location Map

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Appendix A-2 – Logs of Exploratory Borings and CPT Soundings (GPI, 2016)
Appendix B-1 – Results of Laboratory Testing (current study)
Appendix B-2 – Results of Laboratory Testing (GPI, 2016)
Appendix C – Drilling Soil Waste Environmental Characterization and Disposal Records
Appendix D – Historical Aerial Photographs

1. INTRODUCTION

This report presents the results of Tetra Tech's geotechnical engineering evaluation and design recommendations for the proposed improvements at Vista Grande Park on a closed municipal solid waste landfill located southeast of the intersection of Lambert Road and Idaho Street in the City of La Habra, California (Figure 1 - Project Location Map).

The purpose of this study was to evaluate the subsurface conditions at the site and to provide recommendations for the design and construction of the proposed development and associated improvements. This report summarizes the data collected and presents our findings, conclusions, and geotechnical design recommendations.

1.1. Planned Improvements

Based on the site improvement plan prepared by Troller Mayer Associates, Inc. (2019) and Tetra Tech (2023), the proposed improvements at the site consist of the following components (see Inset 1 below):

- General site grading to achieve the final design grade and the recommended minimum cover thickness within the proposed improvement areas;
- Modular restroom and storage building with footprint dimensions of 24 feet by 40 feet;
- Concrete basketball court;
- Pavement (driveways and parking areas);
- Trails for walking and running;
- Masonry unit screen and exhibit walls, park entry sign;
- Gazebo, shade structures;
- Benches, picnic tables, drinking fountains, trash enclosures;
- Exercise stations;
- Softscape (amphitheater, volleyball court, children's play area, dog park);
- Turf; and
- Below grade wet- and dry-utilities.

We understand that the existing site grades will be modified to achieve the anticipated design grades. For the purposes of this study, it is assumed that cut and fill on the order of 5 feet or less will be required to achieve the final design grades. Additionally, we understand that existing on-site improvements within the proposed grading, i.e., buildings and buried utilities, will be demolished.



Inset 1. Vista Grande Park – Proposed Site Improvements

1.2. Limitations

The planned improvements will be located on a closed municipal solid waste landfill. The landfill has previously experienced significant ground settlement with commensurate impacts on site use. This study did not evaluate potential settlements of the existing and planned final cover grades and the potential impacts on the planned improvements. It should be recognized that the performance of the planned improvements will be impacted by future settlement of the landfill refuse and cover materials. As such, maintenance and the potential reconstruction or relocation of planned improvements may be needed.

Assessment of the stability of the perimeter landfill slopes is beyond the scope of this study.

2. SCOPE OF SERVICES

Tetra Tech's scope of services for this project consisted of the following tasks:

- Review of available background data, including geotechnical reports, and geologic maps relevant to the subject site.

- A site reconnaissance to observe the site surface conditions and to layout boring locations.

- Notification of Underground Service Alert (USA) prior to drilling for the clearance of buried on-site utilities.

- A subsurface evaluation, including the excavating, logging, and sampling of 18 exploratory borings to depths ranging from about 4 to 36.5 feet below the existing grade. Field screening of recovered samples for environmental components was also performed at the time of drilling (see Appendix A-1).

- Laboratory testing of selected samples recovered from the borings to evaluate geotechnical engineering properties of the on-site soils. Environmental characterization of spoils generated during the subsurface drilling exploration was also performed for the purpose of disposal (see Appendices B-1 and C).

- Engineering evaluation of the geotechnical data collected to develop geotechnical recommendations for the design and construction of the proposed improvements, including the following items:

    - An evaluation of general subsurface conditions and description of types, distribution, and engineering characteristics of subsurface materials.
    - An evaluation of the permeability characteristics of the existing site cover soils.
    - An evaluation of the liquefaction potential and dynamic settlement of the on-site granular soils.
    - A qualitative evaluation of the suitability of on-site soils for the support of structures.
    - Recommendations for general site grading operations, including the minimum cover thickness within the proposed improvement areas.
    - Recommendations for design of footing foundations including allowable bearing capacity, lateral resistance, and settlement estimates.
    - Determination of seismic design parameters in accordance with the 2022 California Building Code.
    - Recommendations for design of concrete slab-on-grade at the site.
    - Recommendations for design of asphalt concrete (AC) pavement and Portland cement concrete (PCC) pavement sections at the site.
    - An evaluation of the corrosion potential of the on-site soils to buried concrete and steel.

- Preparation of this report, including the provision of reference maps and illustrations, a summary of the collected data, conclusions, and geotechnical recommendations for the design and construction of the proposed improvements.

3. SALIENT HISTORY AND SITE DESCRIPTION

Vista Grande Park is located on a closed municipal solid waste landfill in the City of La Habra. Specifically, it is situated north of Las Lomas Drive, South of West Lambert Road, east of South Idaho Street, and west of existing multi-family residential developments. The northwest boundary of the park is adjacent to an unlined segment of the Coyote Creek drainage channel. The approximate location of the Vista Grande Park is shown in Figure 1 - Project Location Map.

The park is approximately 13½ acres in area and consists of a relatively large, graded pad with bordering perimeter slopes along the southwest, west, north, and northeast limits. Most of the pad is bare, with minimal vegetation consisting mainly of perennial grasses and scattered shrubs. Mature trees are located along the perimeter slopes. Relief across the pad varies from about elevation 269 feet to 285 feet with local interior slopes on the order of 5 feet to 15 feet in height at gradients up to about 2(H):1(V). Slopes along the perimeter of the pad range from less than 5 feet in height at gradients less than 4(H):1(V) (south boundary of the park) to approximately 35 feet in height at gradients up to 2(H):1(V) (west boundary of the park adjacent to South Idaho Street and Coyote Creek drainage channel). Surface drainage across the pad is by sheet flow with the majority collected by a catch basin located in the northwest part of the pad. The catch basin reportedly discharges directly into Coyote Creek via a buried pipe. The northeast portion of the pad drains to the northeast towards West Lambert Road. Perimeter slopes drain to the adjacent streets and Coyote Creek.

Existing improvements at the site consist of 2 single-story buildings joined with a common roof and located near the southeast corner of the park; a gravel surfaced parking lot adjacent to Las Lomas Drive; interior surface drainage improvements; and buried utilities. The buildings include masonry-unit brick walls with concrete slab-on-grade floors. The combined buildings include restrooms and a food service area with a footprint layout of approximately 52 feet by 23 feet. Both below- and above-ground utilities supply the buildings. Aside from age-related deterioration, the buildings appear to have performed well with no visible evidence of significant distress.

The site was operated as a municipal refuse landfill by the City of La Habra and the County of Orange from the late 1940s to 1958. Historical USGS topography indicate pre-landfill ground elevations at approximately 225 feet at the Coyote Creek invert along the westerly limit of the park to as high as approximately 285 feet along the eastern boundary of the park near the southeast corner of the property. Following closure of the landfill by the County of Orange, the property was transferred back to the City of La Habra for use as a park. From the mid-1960s to 1985 the City developed and operated baseball fields on the park. Since 1985 the baseball field improvements were razed and the park has remained abandoned. Since 1985 the City of La Habra has conducted periodic grading maintenance to maintain surface drainage and mitigate erosion related conditions. Associated landfill maintenance along the eastern boundary of the site has included the installation of a landfill gas collection system. These improvement areas are outside the limits of the proposed park redevelopment area. Aerial photographs of the site since 1994 depicting site conditions and grading efforts by the City of La Habra are included in Appendix D.

4. FIELD EXPLORATION AND LABORATORY TESTING

4.1. Field Explorations

Prior to starting the field exploration program, a field reconnaissance was conducted to observe site conditions and to mark the borehole locations. The subsurface soil conditions at the site were explored on August 8 and 9, 2019, and on February 19, 2020, and included the drilling, logging, and sampling of a total of 18 exploratory borings using a truck-mounted mounted drill rig equipped with an 8-inch diameter auger hollow stem auger and a 4-inch diameter hand auger. Boring locations were selected to provide subsurface information in the vicinity of planned improvements based on the conceptual plan prepared by Troller Mayer Associates, Inc. (2019), as well as the existing landfill cover soils. The approximate locations of the borings are shown on Plate 1 – Site Plan and Boring Location Map.

Both driven ring-type and bulk samples were retrieved from the borings at selected depths during drilling. The driven samples were collected utilizing a California-type sampler driven by a 140-pound hammer with a drop of 30 inches in the hollow stem auger borings, and a hand-driven hammer in the hand auger borings. Standard Penetration Testing (SPT) was also performed using the same hammer and drop as for the ring-type samples in the hollow stem auger borings in general accordance with ASTM D1586.

All borings were surface-logged by a Tetra Tech geologist, who also prepared the recovered samples for subsequent reference and laboratory testing. At the completion of drilling, borings were sounded for groundwater and backfilled with a cement-bentonite slurry (hollow stem auger borings) or with hydrated granular bentonite (hand auger borings). Slurry in all borings was placed to seal across the soil cover – landfill refuse interface. Grout volumes emplaced equaled or exceeded the estimated borehole volume. The upper approximately 1-foot of each boring was backfilled with tamped on-site soil cuttings. Drill spoils returned to the surface were placed in drums, sealed, and labeled with a placard indicating presumed hazardous pending analysis. Soil boring logs are presented in Appendix A-1.

In addition to the field drilling and geotechnical sampling, air quality monitoring, for purposes of work protection and to obtain information regarding potential landfill gas components at the boring locations, was performed during the drilling operations using a 4-gas meter and a photo-ionization device (PID). Air monitoring using the 4-gas meter was performed at the borehole within the area of the breathing zone. Monitored gas constituents included: O_2 (% of air), CO (ppm), H_2S (ppm), and combustible gas (% LEL). In addition, measurements for volatile organic compounds using a PID were made on recovered driven samples as well as in the breathing zone. No measurable gas concentrations were recorded for the breathing zone using the 4-gas meter; and O_2 readings were generally constant at around 20.5%. Volatile organic compounds were measured during monitoring of recovered samples from the majority of the borings; as well as in the breathing zone at Boring B-2 – where a concentration of 0.1 ppm was measured at the top of the auger at a drilling depth of approximately 9 feet. The field measurements are recorded on the boring logs in Appendix A-1.

In 2016, Geotechnical Professionals, Inc. (GPI) was retained by the City of La Habra to conduct a geotechnical investigation of site conditions for the purpose of assessing subsurface conditions for possible redevelopment. GPI's study included the advancement of 4 hollow stem auger borings and 10 Cone Penetration Soundings (CPT) within the park site. For reference, GPI's boring logs and CPT soundings are also included in Appendix A-2.

The approximate locations of the recently drilled borings by Tetra Tech, and borings and Cone Penetration Tests previously advanced in 2016 by GPI are shown on Plate 1 – Site Plan and Boring Location Map. Subsurface exploration locations and salient findings for the recent Tetra Tech exploration and 2016 GPI exploration are summarized in Table 1 below.

Table 1
Subsurface Exploration Summary

Boring No.	Drilled Depth/(Elev.) (ft)	Approximate Surface Elevation[1] (ft)	Depth/(Elev.) to Base of Cover Soils - Top of Refuse (ft)	Depth/(Elev.) to Base of Refuse - Top of Native Alluvium (ft)	Northing[2]	Easting[2]
Tetra Tech BAS Borings						
B-1	11.5 (258)	269.5	9.5 (260)	Not reached	2284022.7	6043775.4
B-2	9.0 (264.8)	273.8	7 (266.8)	Not reached	2283882.6	6043554.8
B-3	15.3 (258.0)	273.3	14 (259.3)	Not reached	2283733.9	6043345.5
B-4	14.0 (260.1)	274.1	12 (262.1)	Not reached	2283828.8	6043666.5
B-5	9.0 (265.8)	274.8	7 (267.8)	Not reached	2283795.2	2283795.2
B-6	14.0 (263.7)	277.7	12 (265.7)	Not reached	2283619.0	6043495.7
B-7	14.0 (265.4)	279.4	13 (266.4)	Not reached	2283486.6	6043398.6
B-8	9.0 (268.0)	277.0	7 (270.0)	Not reached	2283552.6	6043717.7
B-9	36.5 (244.9)	281.4	NE	4 (277.4)	2283437.1	6043706.6
B-10	6.5 (265.1)	271.6	3.5 (268.1)	Not reached	2283320.6	6043377.5
B-11	6.5 (263.9)	270.4	3.5 (266.9)	Not reached	2283265.9	2283265.9

Table 1 (Continued)
Subsurface Exploration Summary

Boring No.	Drilled Depth/(Elev.) (ft)	Approximate Surface Elevation[1] (ft)	Depth/(Elev.) to Base of Cover Soils - Top of Refuse (ft)	Depth/(Elev.) to Base of Refuse - Top of Native Alluvium (ft)	Northing[2]	Easting[2]
Tetra Tech BAS Borings						
B-12	11.5 (265.3)	276.8	9.5 (267.3)	Not reached	2283712.0	6043524.5
B-13	9.0 (267.8)	276.8	7 (269.8)	Not reached	2283662.0	6043668.3
B-101	4.0 (275)	279	>4 (<275)	Not reached	2283460	6043430
B-102	4.0 (274)	278	>4 (<274)	Not reached	2283590	6043705
B-102	4.5 (270.5)	275	>4.5 (<270.5)	Not reached	2283680	6043515
B-104	4.5 (267.5)	272	>4.5 (<267.5)	Not reached	2283835	6043500
B-105	4.0 (272)	276	>4 (<272)	Not reached	2283835	6043770
GPI Borings and CPT Soundings						
B-1	61 (217)	278	10.5 (267.5)	50 (228)	±2283460	±60434330
B-2	61 (216.5)	277.5	13 (264.5)	50 (227.5)	±2283630	±6043530
B-3	61 (210)	271	23 (248)	41 (230)	±2283800	±6043380
B-4	61 (212)	273	8.5 (264.5)	40.5 (232.5)	±2284080	±6043770
CPT-1[3]	50 (217)	267	8.5 (258.5)	26 (241)	±2283330	±6043280
CPT-2[3]	50 (221)	271	3 (268)	19 (252)	±2283330	±60435200
CPT-3[3]	40 (239)	279	11 (268)	Not interpreted	±2283340	±6043660
CPT-4[3]	50 (222)	272	5 (267)	45 (227)	±2283460	±6043290
CPT-5[3]	50 (231)	281	8 (273)	23 (258)	±2283450	±6043530

Table 1 (Continued)
Subsurface Exploration Summary

Boring No.	Drilled Depth/(Elev.) (ft)	Approximate Surface Elevation[1] (ft)	Depth/(Elev.) to Base of Cover Soils - Top of Refuse (ft)	Depth/(Elev.) to Base of Refuse - Top of Native Alluvium (ft)	Northing[2]	Easting[2]
GPI Borings and CPT Soundings						
CPT-6[3]	30 (249)	279	6 (273)	Not interpreted	±2283450	±6043650
CPT-7[3]	50 (220)	270	8 (262)	44 (226)	±2283640	±6043300
CPT-8[3]	60 (211)	271	17.5 (253.5)	48 (223)	±2283760	±6043550
CPT-9[3]	60 (214)	274	8 (266)	48 (226)	±2283960	±6043590
CPT-10[3]	50 (223)	273	9 (264)	39 (234)	±2284080	±6043850

Notes:
1 Surface elevations for Tetra Tech BAS GeoScience borings verified by survey. Surface elevations for GPI exploration locations reported on boring and CPT logs.
2 As-drilled boring locations were obtained with a handheld NAD 83 Coordinate System Global Positioning System (GPS) unit and later survey by Tetra Tech BAS staff. Coordinates for GPI exploration locations were not provided in the GPI report. Locations shown on Plate 1 and included herein are estimated from Figure 2 in the GPI report.
3 Interpreted geologic unit contacts reported by GPI.

4.2. Laboratory Testing

Laboratory tests were performed on selected samples recovered from the borings to aid in the classification of soils and to evaluate pertinent engineering properties of the cover soils and the proposed subgrade foundation soils. The following tests were performed:

- In-situ Moisture Content and Dry Density, ASTM D2216 and D2937;
- Maximum Dry Density and Optimum Moisture Content, ASTM D1557;
- Grain Size Distribution, ASTM D6913;
- Percent finer than the No. 200 sieve, ASTM D1140;
- Atterberg Limits ASTM D4318;
- Permeability, ASTM D5084, Method A;
- Direct Shear ASTM D3080;
- Consolidation ASTM D2435;
- Expansion Index ASTM D4829;
- R-value ASTM D2844; and

- Corrosivity series:
  - Minimum Electrical Resistivity and pH; CTM 643
  - Chloride Content; CTM 422
  - Water Soluble Sulfate Content CTM 417

Results of the laboratory testing for the 2019 and 2020 exploration are presented in Appendix B-1. For ease of referral to the soil profile, the laboratory results are also included on the boring logs in Appendix A-1. Laboratory testing results from the 2016 GPI investigation are included in Appendix B-2.

5. GEOLOGY AND SUBSURFACE CONDITIONS

5.1. Geology

The project site is located in the northeastern part of the greater Los Angeles Basin. Gynomorphically, this portion of the basin is within the Peninsular Ranges geomorphic province which is characterized by generally northwest trending elevated ground, hills and mountain ranges with intervening valleys. Structurally, the Peninsular Ranges province includes northwest-southeast trending structural blocks separated by northwest-southeast trending strike-slip faults.

Regional geologic mapping published by Dibblee and Ehrenspeck (Dibblee and Ehrenspeck, 2001; Figure 2 – Geologic Map), shows that the site is underlain by older alluvial deposits of late Pleistocene age. Our subsurface investigation encountered landfill cover fill soils, refuse and La Habra Formation Bedrock. Generalized descriptions of the units encountered in the recent borings, and from previous subsurface exploration by GPI (2016) are provided below. Detailed descriptions of the encountered soil conditions are presented on the boring logs in Appendices A-1 and A-2.

5.2. Subsurface Conditions

5.2.1. Landfill Cover Fill

Landfill cover soils were encountered in our recently drilled borings to depths ranging from about 3.5 feet to 14 feet. Subsurface exploration data by GPI (2016) reported cover fill thicknesses of about 3 feet to 24 feet. Encountered cover fill materials generally consisted of silty sand, sandy clay, clay, and clayey sand. The one exception included Boring B-10 located in the western part of the parking lot adjacent to Las Lomas Drive where asphalt grindings was encountered. Laboratory test results for samples recovered during our subsurface exploration determined moisture contents ranging from 4.4 to 21.3 percent indicating that the materials are dry to moist. Corresponding dry density determinations ranged from about 94 and 119 pcf suggesting that the existing fill has a relative compaction ranging from less than 80 percent to above 90 percent of the maximum dry density.

5.2.2. Refuse

Beneath the landfill cap, refuse materials were encountered in 12 of the 13 borings drilled for the current exploration program. The borings were extended a few to approximately 5 feet into the refuse to confirm the material. Refuse materials consisted of heterogeneous mix of green waste and soil, with subordinate components of paper, plastic, and metal. Driven samples indicated a very loose to medium dense or a stiff to hard consistency. One ring sample of the refuse was tested and determined a dry density of 47 pcf and a moisture content of 37.1 percent. Refuse materials were not encountered in Boring B-9 in the area of the proposed modular restroom and storage building where approximately 4 feet of cover soil was encountered over older alluvium.

The previous subsurface exploration program by GPI (2016) penetrated the refuse materials in all 4 of their borings and in the 10 CPT soundings (see Appendix A-2). Based on the boring data, the

bottom of refuse ranged from about 40.5 to 50 feet below the existing grades (i.e., refuse thicknesses of about 18 to 39.5 feet). GPI (2016) reported interpreted top of refuse of 3 to 17.5 feet below the existing grades in the 10 CPT soundings (i.e., interpreted refuse thicknesses of about 15 to 40 feet).

5.2.3. Bedrock (La Habra Formation)

La Habra Formation bedrock (Dibblee and Ehrenspeck, 2001) was encountered in Boring B-9 at a depth of 4 feet. These materials extended to the base of the boring at 36.5 feet. The materials consisted of weakly indurated bedrock consisting of sandstone, siltstone, and lessor amounts of clayey siltstone and sandy siltstone. Standard Penetration Tests indicate a hard or dense consistency. The La Habra Formation is early- to middle-Pleistocene in age and found pervasively across the Coyote Hills and elevated ground in the area and at depth within the intervening alluvial-filled valleys and lowlands. The materials are typically reflective of a lowland fluvial environment with interbedded fine-grained (silt, clay) and coarse-grained (sands, gravels) deposits. The materials typically behave from an engineering perspective as heavily over-consolidated soils.

GPI's descriptions for the older alluvial soils encountered in their borings (B-1 through B-4) at an elevation range of about 227.5 to 232 feet. This elevation is generally consistent with the pre-landfill ground surface. In general GPI's descriptions are consistent with our observations, however, the materials were described as soil and not bedrock. Additionally, brick fragments were noted in the alluvium in 2 of GPI's borings. This description may relate to native gravel clasts with brick-like characteristics or to processing of the natural ground prior to refuse placement.

5.3. Groundwater

Mapping by the State of California (CDMG, 1998) for the Whittier Quadrangle indicates that the historic high groundwater depth at the site is estimated to be greater than 10 feet. A depth of 10 feet or shallower is indicated for Coyote Creek Channel located just west of the site (Figure 3 − Historic High Groundwater Map). Groundwater seepage was not encountered during our subsurface exploration to the depth explored. Groundwater seepage was reported by GPI during their subsurface exploration in 3 of the 4 borings at depths of 46 and 47 feet below grade (corresponding elevations of 225 feet to 231 feet). These elevations were below the bottom of the refuse in 2 of the borings (B-3 and B-4) and approximately 3 feet up into the refuse in Boring B-1.

It should be noted that groundwater levels may fluctuate due to seasonal variations, rainfall, irrigation, or other factors. Evaluation of such factors is beyond the scope of our services.

6. ENGINEERING SEISMOLOGY

6.1. General Seismic Setting

The Southern California region is known to be seismically active. Earthquakes occurring within approximately 60 miles of the site are generally capable of generating ground shaking of engineering significance to the proposed construction. The project area is located in the general proximity of several active and potentially active faults, as shown on Figure 4 – Regional Faults and Seismicity Map. Active faults are defined as those that have experienced surface displacement within the Holocene period (approximately the last 11,000 years).

Active faults within approximately 15 miles of the subject site include the Whittier fault zone located 2.5 miles northeast of the site, the Los Alamito fault (11.2 miles to the southwest), the Newport-Inglewood fault zone (14 miles southwest), and the Sierra Madre fault (14.5 miles to the north). The San Andreas Fault is located about 37.7 miles to the northeast of the site. The inferred trace of the potentially active Los Alamitos fault, which trends sub-parallel to the northwest-trending Newport-Inglewood fault zone, is mapped approximately 6.9 miles to southeast of the subject site. The Los Alamitos fault has no record of historic earthquakes but shows evidence of displacement during late Quaternary time (Jennings, 2010).

Table 2 lists selected principal known active faults that may affect the subject site and the maximum moment magnitude (M_{max}) as published by Cao et al. (2003) for the California Geological Survey (CGS).

Superimposed on the area map in Figure 4 are earthquake epicenters recorded by the USGS between 1900 to present day. A large amount of seismic activity and associated events with their epicenters have been recorded surrounding the project site. However, only relatively few earthquake epicenters have been recorded in the immediate area of the subject site. Notable historic earthquakes in Southern California of significance to the project are listed in Table 3. The most significant historic earthquakes near the project site were the 1933 Long Beach earthquake, the 1971 Agua Dulce earthquake, and the 1994 Northridge earthquake. The recent July 2019 earthquakes in the Ridgecrest area (M_w 7.1) were located approximately 120 miles to the northwest of the site.

Potential seismic sources of significance to the project include active faults previously described and faults that are not known to break the ground surface but are considered active. This latter group of faults includes buried or “blind” thrust faults. Current tectonic models for the Los Angeles basin include the presence of buried thrust faults, several of which are considered partly responsible for the north-to-south compression of the basin. Although these faults are not currently zoned by the State of California for surface rupture hazards (Earthquake Fault Zones), many are considered capable of generating seismic shaking of significance to structures.

Of these buried active faults, the closest approach to the site is the Puente Hills Trust Fault (PHTF), which is located about 3.4 miles southwest of the site. The PHTF is currently defined as 3 separate but juxtaposed, generally east-west trending and north-dipping, fault surfaces that combined extend from the center of Los Angeles to Brea. From west to east these include the Los Angeles,

Santa Fe Springs, and Coyote Hills segments. Based upon recent studies by several researchers, including: Shaw et al., (2002), Olsen and Cooke (2005), and Leon et al. (2007), the 3 fault surfaces are interpreted to extend from depths in excess of 9 miles on the north side of the Los Angeles basin to less than 1.2 miles at the southerly limits of the fault surfaces in the central portion of the basin. Fault surface geometries are interpreted from historical petroleum exploration data, limited geotechnical subsurface exploration data, and limited seismicity (i.e., the 1987 magnitude 5.9 Whittier Narrows earthquake).

Table 2
Active and Significant Faults

Fault Name	Approximate Fault Distance to Site[1] (miles)	Maximum Moment Magnitude[2] (Mmax)
Whittier	2.5	6.8
Puente Hills Blind Thrust	3.4	7.1
Los Alamitos	11.2	6.2
Newport-Inglewood	14	7.1
Sierra Madre	14.5	7.2
Raymond	15.9	6.5
THUMS-Huntington Beach	18.4	7
Hollywood	18.6	6.4
Palos Verdes	21.4	7.3
Verdugo	21.5	6.9
Cabrillo	23.8	6.8
Charnock	23.9	6.5
Redondo Canyon	26.5	6.5
Santa Monica	28.1	6.6
San Andreas	34.9	7.8
Malibu Coast	40.6	6.7
Anacapa-Dume	42.3	7.5

Notes: [1] per Jennings, 2010
[2] per Cao, et al., 2003

Table 3
Historic Earthquakes in Southern California

Earthquake Name	Year	Fault and Fault Type	Earthquake Magnitude*	Epicenter	
				Latitude	Longitude
Ridgecrest	2019	Eastern California Shear Zone (ECSZ) (strike slip)	5.4-7.1 M_w	35.77°N	117.61°W
La Habra	2014	Shallow previously unknown fault	5.1 M_w	33.933°N	117.916°W
Northridge	1994	Northridge Thrust (Blind Thrust) (a.k.a. Pico Thrust)	6.7 M_w	34.21°N	118.54°W
Sierra Madre	1991	Clamshell-Sawpit Canyon Fault (Reverse)	5.8 M_L	34.20°N	118.14°W
Pasadena	1988	Raymond Fault (left lateral strike-slip)	5.0 M_w	34.14°N	118.13°W
Whittier Narrows	1987	Puente Hills Fault (blind thrust fault)	5.9 M_L	34.06°N	118.08°W
San Fernando	1971	San Fernando Fault (thrust)	6.5-6.7 M_w	34.42°N	118.37°W
Torrance-Gardena	1941	Palos Verdes Fault (right-lateral strike-slip)	4.8 M_L	33.82°N 33.78°N	118.22°W 118.25°W
Long Beach	1933	Newport-Inglewood Fault (right-lateral strike-slip)	6.4 M_w	33.63°N	118.00°W
San Jacinto	1923	San Jacinto Fault (right-lateral strike-slip)	6.3 M_L	34.00°N	117.24°W
San Jacinto	1918	San Jacinto Fault (right-lateral strike-slip)	6.7 M_w	33.65°N	117.43°W
Elsinore	1910	Elsinore Fault (right-lateral strike-slip)	6 M_L	33.75°N	117.45°W
Fort Tejon	1857	South Central Segment of the San Andreas Fault (right-lateral strike-slip)	7.9 M_w	35.43°N	120.19°W

*M_w refers to Moment Magnitude scale
M_L refers to Local Magnitude scale

Leon et al. (2007) estimates that upwards of 60 percent of the total Los Angeles basin compression may be attributed to strain along the PHTF. Although ground rupture has not been officially attributed to the fault, the presence of youthful hills (e.g., Coyote Hills) and shallow folding at depth in the upper portion of the interpreted thrust ramp suggests recent activity. The PHTF is considered capable of generating earthquake magnitudes up to about M_w 7.1.

6.2. Surface Fault Rupture

Official Maps of Earthquake Fault Zones were reviewed to evaluate the location of the project site relative to active fault zones. Earthquake Fault Zones (known as Special Studies Zones prior to 1994) have been established in accordance with the Alquist-Priolo Special Studies Zones Act enacted in 1972. The Act directs the State Geologist to delineate the regulatory zones that encompass surface traces of active faults that have a potential for future surface fault rupture. The purpose of the Alquist-Priolo Act is to regulate development near active faults in order to mitigate the hazard of surface fault rupture.

The site is not located within a designated Earthquake Fault Zone for fault surface rupture hazard (see Figure 6). Based on a review of State of California Earthquake Fault Zone maps, the closest zoned fault for surface rupture is located approximately 0.6 miles to the south (CDMG, 1991; unnamed fault segment approximately 0.36 miles long and located in the Coyote Hills). The closest approach of the Whittier fault zone is 2.5 miles to the northeast.

No surface traces of any active or potentially active faults are known to pass directly through or project towards the site. Neither our field exploration nor literature review disclosed an active fault trace projecting to the ground surface in the project area. The potential for surface rupture due to faulting occurring beneath the site during the design life of the proposed development is considered low.

6.3. Seismic Hazard Zones

Maps of seismic hazard zones are issued by the California Geological Survey (CGS, formerly California Department of Conservation, Division of Mines and Geology (CDMG)) in accordance with the Seismic Hazards Mapping Act enacted in April 1997. The intent of the Seismic Hazards Mapping Act is to provide for a statewide seismic hazard mapping and technical advisory program to assist cities and counties in developing compliance requirements to protect the public health and safety from the effects of strong ground shaking, liquefaction, landslides, or other ground failure and other seismic hazards caused by earthquakes.

Based on the review of the La Habra Quadrangle Official Map of Seismic Hazard Zones issued by the California Geological Survey (CDMG, 1998a) (see attached Figure 4 – Seismic Hazard Zone Map), the proposed park improvements are not located within an area identified by the State of California as subject to the hazard of liquefaction and landslide. The closest zoned area for liquefaction hazard includes the Coyote Creek Drainage Channel locate just west of the site.

6.4. Liquefaction Potential and Dynamic Settlement

Liquefaction of soils can be caused by ground shaking during earthquakes. Research and historical data indicate that loose, relatively clean granular soils and low plasticity silts are susceptible to liquefaction and dynamic settlement, whereas the stability of the majority of clayey silts, silty clays and clays are not typically adversely affected by ground shaking. Liquefaction is generally known to occur in saturated or near-saturated cohesionless soils at depths shallower than about 50 feet.

Given the nature of the refuse materials and the underlying older alluvium the site is not considered susceptible to liquefaction hazard. However, it is likely that seismic settlement on the order of 1 to 4 inches could take place during strong shaking due to rearrangement of particles within the refuse. However, given the nature of the proposed improvements and no habitable structures are included within the refuse areas, measures for the seismic settlement reduction at the site are not required.

7. DESIGN RECOMMENDATIONS

7.1. General

Based upon the results of the field exploration and engineering analyses, it is Tetra Tech's opinion that the proposed construction is feasible from a geotechnical standpoint, provided that the recommendations contained in this report are incorporated into the design plans and implemented during construction. However, due to the presence of unengineered refuse fill materials and non-structural fill landfill cover materials both subject to long term settlement, the performance of the surface improvements will be negatively impacted. The recommendations presented herein are intended to minimize the effects of this adverse condition but do not mitigate the condition itself. Conventional footing foundations established in competent engineered fills may be adopted for support of the proposed structures (e.g., restroom and storage building, community art wall, etc.). The primary considerations identified from a geotechnical standpoint include:

- The presence of landfill refuse material varying in thickness from about 15 to over 40 feet across the site. Evaluation of the total and differential settlement of the refuse is beyond the scope of this study. However, the landfill refuse is anticipated to settle, which will have commensurate impacts on the site improvements. Therefore, periodic inspections, maintenance, and repairs of site improvements will be required.

- The presence of landfill cover varying in thickness from about 3 to 13 feet (see Plate 1 and Table 1 of this report). The landfill cover generally consists of loose to medium dense sandy soils and soft to stiff lean clay. To reduce the potential total and differential settlements of the proposed improvements within the landfill limits, a minimum compacted cover thickness within the proposed improvement areas is recommended to be incorporated during site grading.

- Results of laboratory permeability testing on the existing site cover soils indicate that the materials do not meet the minimum permeability standards for direct use as a low-permeability barrier layer (i.e., a maximum permeability of $1x10^{-6}$ cm/sec or less) without modification.

The on-site fine-grained cover soils (i.e., lean clay) are expected to have a moderate expansion potential. Based on the results of the water-soluble sulfate testing of the on-site cover soils the exposure of buried concrete to sulfate attack is not a concern. The on-site cover soils are anticipated to likely have a "moderately corrosive" potential to buried metals.

The design recommendations presented below are based on Tetra Tech's current understanding of the project. Once the project configuration is finalized and the design is complete, Tetra Tech should review the plans and specifications to evaluate if the geotechnical design recommendations have been incorporated as intended.

7.2. Clearing and Grubbing

The surface should be cleared of any pavement, structures, vegetation, trash and debris, prior to commencement of the earthwork. Any subterranean installations not to be preserved, such as

pipes, utility collectors, tanks, etc., should be removed in entirety or abandoned in accordance with applicable regulations and with guidance from Tetra Tech.

7.3. Site Preparation

In order to create uniform and adequate bearing conditions for the proposed construction the following is recommended:

- During general site grading, a minimum cover thickness of 7 feet should be achieved or maintained within all graded areas within the landfill limits. An exception to this cover thickness requirement includes the parking and perimeter drive at the southern end of the landfill where a reduced cover thickness is acceptable as discussed in Sections 7.5 and 7.12 of this report.

- Restroom and Storage Building Pad is anticipated to be located outside of the landfill refuse limits. The building pad should be overexcavated and recompacted to a depth of at least 2 feet below the bottom of the foundation or floor slab, 4 feet below the existing grade, or to uniform acceptable soils, whichever is deeper. To the extent practicable, the zone of overexcavation should extend outside the perimeter of the building pad for a horizontal distance of at least 5 feet.

- Pavement and flatwork areas should be overexcavated and recompacted to a depth of at least 2 feet below the proposed subgrade elevation, 3 feet below the existing grade (only for cut areas during site grading), or to uniform acceptable soils, whichever is deeper. To the extent practicable, the zone of overexcavation should extend a horizontal distance of at least 3 feet beyond the outside perimeter of the pavement.

- Concrete basketball court area should be overexcavated and recompacted to a depth of at least 2 feet below the bottom of the slab, 3 feet below the existing grade, or to uniform acceptable soils, whichever is deeper. To the extent practicable, the zone of overexcavation should extend a horizontal distance of at least 3 feet beyond the outside the perimeter of the slab.

- Lightly loaded ancillary structures (e.g., community wall, park entry sign, trash enclosure, etc.) should be overexcavated to a depth of at least one foot below the bottom of the proposed improvements, 2 feet below the existing grade, or to uniform acceptable soils, whichever is deeper. The excavation should extend a horizontal distance of at least 2 feet beyond the outside perimeter of the structures.

- Disturbed soils at structural and non-structural areas may result from demolition of existing site improvements. These soils should be overexcavated and recompacted to the total depth of the disturbed material.

The exposed subgrade or overexcavation grade, should be probed and accepted by Tetra Tech. At the approved subgrade the soils should be scarified to a depth of 6 inches, and compacted at a minimum of 110 percent (sandy soils) or 125 percent (clayey soils) of optimum moisture content to at least 90 percent relative compaction per ASTM D1557.

Localized zones of loose and/or unstable soils may be encountered during the grading operations at the subgrade level and should be overexcavated and recompacted. If loose/soft/wet/shallow refuse areas are encountered during grading operations that are not practical to be excavated and processed, Table 4 below provides options for stabilizing the subgrade. The objective of the stabilization efforts is to provide for a thickness of competent fill of at least 3 feet for foundations and 2 feet for pavements to bridge over the impacted area. The specific type of remediation and associated area limits will need to be evaluated in the field by a representative of Tetra Tech.

Table 4
Conceptual Options for Handling Unstable Materials at the Excavated Subgrade

Areas where the soils are soft and/or unstable at the excavation subgrade	• Overexcavate at least 3 feet for foundations, 2 feet for pavement areas • Stabilize the soft subgrade by working open-graded aggregate material (typically 3/4" or 1.5" crushed rock, coarser for softer subgrade) at least 4 to 6 inches into the soil. • Place non-woven geotextile, Mirafi 180N or approved equivalent, over the stabilized subgrade. • Place and compact well-graded fill (e.g., AB, CMB) or general approved backfill material to specified compaction over the geotextile.
Larger areas where the soils are excessively soft and/or unstable	• Overexcavate at least 3 feet for foundations, 2 feet for pavement areas • Improve the soft subgrade by working in open-graded aggregate material as much as possible/practical into the subgrade. • Place non-woven geotextile, Mirafi 180N or approved equivalent, over the exposed soil. • Place at least 8 inches (12-18 inches preferred) of well graded aggregate material (e.g., AB, CMB); only reasonably achievable compaction is required. • Place non-woven geotextile, Mirafi 180N or approved equivalent, over the aggregate layer. • Place and compact fill to specified compaction over the geotextile.

All fill placement associated with the replacement of the overexcavated soils, fill placed to achieve finish grade or subgrade, or utility trench backfill should be moisture-conditioned to at least 110 percent (sandy soils) or 125 percent (clayey soils) of the optimum moisture content and compacted to at least 90 percent relative compaction per ASTM D1557. The upper one foot of soils below pavements and any flatwork should be processed and compacted to at least 95 percent relative compaction per ASTM D1557.

Excavated on-site soils may be re-used as compacted fill provided the materials are free of organics, deleterious materials, debris and particles over 3 inches in largest dimension. Locally, particles up to 6 inches in largest dimension may be incorporated in the fill soils based on specific approval and placement recommendations provided by the Geotechnical Engineer during grading.

7.4. Temporary Slope and Trench Excavations

Construction site safety is the sole responsibility of the Contractor, who shall also be solely responsible for the means, methods, and sequencing of construction operations. The Contractor should be aware that excavation activities should be performed in accordance with procedures as specified in local, state, and/or federal safety regulations (e.g., OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926, or successor regulations).

The on-site cover soils are not expected to pose unusual excavation difficulties, and therefore, conventional earth-moving equipment may be used. Localized sloughing/raveling of exposed soil intervals should be anticipated. Per the current CalOSHA regulations. The on-site soils may be considered as Type C.

Unsurcharged excavations: Sides of temporary, unsurcharged excavations less than 20 feet deep should be sloped back at an inclination of 1.5(H):1(V) or flatter. Where space for sloped sides is not available, shoring will be necessary. This office can provide appropriate shoring recommendations, once the excavation layout is known.

Surcharge setback recommendations: Stockpiled (excavated) materials should be placed no closer than 4 feet from the top of the trench. A greater setback may be necessary when considering surcharge loads such as heavy vehicles, concrete trucks and cranes. Tetra Tech should be advised of such heavy vehicle loadings so that specific setback requirements can be established for the equipment used. Alternatively, a shoring system may be designed to allow reduction in the setback distance.

Tetra Tech should observe the excavation progress so that appropriate modifications to the excavation design may be recommended, if necessary, due to encountered conditions differing from the design assumptions.

7.5. General Site Grading

It is expected that mass grading at the site will be required to achieve the final design grades. As of this writing, the site grading plan has not been finalized. It is our understanding that efforts will be made to balance the cut / fill volume and minimize the quantity of import materials. For this study, we have assumed that cut / fill thickness will not exceed about 5 feet.

Based on the current and previous field exploration data, the on-site cover material varies in thickness from about 3 feet to over 20 feet. To minimize the potential total and differential settlements of the proposed improvements within the refuse limits, it is recommended, from a geotechnical standpoint, that a minimum cover thickness of 7 feet is maintained for the proposed improvements within the landfill areas. To avoid excavation and relocation of refuse within the planned parking and perimeter drive at the southern end of the project site, the required minimum final cover soil thickness of 7 feet may be reduced to 3.5 feet.

Prior to placement of the fill, the existing grade should be probed and accepted by the Tetra Tech, and the soils should be scarified to a depth of 6 inches and compacted at a minimum of 110 percent

(sandy soils) or 125 percent (clayey soils) of optimum moisture content to at least 90 percent relative compaction per ASTM D1557.

Fill materials should be placed in horizontal lifts not more than 8 inches in uncompacted thickness and compacted to at least 90 percent (sandy soils) or 125 percent (clayey soils) of the maximum dry density at 110 percent of optimum moisture content, as evaluated by the latest version of ASTM D1557. The upper 1 foot of soils below pavements and any flatwork including exterior slabs should be processed and compacted to at least 95 percent relative compaction per ASTM D1557.

For the pavement (driveways and parking areas) within the landfill refuse limits, it is recommended that where the final cover soil thickness of at least 7 feet is achieved one layer of high strength biaxial geogrid (e.g., Tensar BX1500 or equivalent) or triaxial geogrid (e.g., TX160 or equivalent) or high strength geotextile (Mirafi RS580i or equivalent) be installed at a depth of 1 foot below the bottom of the pavement section. The geogrids should extend at least 3 feet beyond the perimeter of the pavement. In areas where the minimum final cover thickness is reduced to 3.5 feet, two layers of triaxial geogrid (e.g., TX160 or equivalent) or high strength geotextile (Mirafi RS580i or equivalent) should be installed below the pavement section. The upper geogrid or geotextile layer should be installed at a depth of 1 foot below the bottom of the pavement section, while the bottom geogrid or geotextile layer should be placed 8 to 10 inches below the upper geotextile layer.

For the basketball court area, it is recommended that 2 layers of high strength biaxial geogrid (e.g., Tensar BX1500 or equivalent) or triaxial geogrid (e.g., TX160 or equivalent) or high strength geotextile (Mirafi RS580i or equivalent) be installed at a depth of 1 to 2 feet below the bottom of the slab. The geogrids should extend at least 7 feet beyond the perimeter of the court slab.

The fill material should generally have a Sand Equivalent of about 30, an Expansion Index of less than 50, and fines content (passing #200 sieve) of less than 50 percent. Other materials may be acceptable with the approval of the Geotechnical Engineer. Stockpiling of on-site soils meeting the specified soil parameters and required volume may be feasible. It is recommended that the grading contractor review the enclosed boring logs and solicit guidance from Tetra Tech during grading operations.

7.6. Footing Foundations

Conventional continuous / spread footing foundations may be adopted for support of the proposed improvements including the restrooms and storage building, park entry sign, community art wall, benches, and shade structures. The footing subgrade should be prepared as recommended in the "Site Preparation" Section of this report. Recommendations for the design and construction of footing foundations are presented below.

Footing foundations should be designed using the geotechnical design parameters presented in Table 5 below. Footings should be designed and reinforced in accordance with the recommendations of the structural engineer and should conform to the 2022 California Building

Code. In addition, the designer must locate the footings so that they will be spaced at a safe distance from each other to avoid significant overlapping of their zone of influence.

Table 5
Geotechnical Design Parameters
Isolated and Continuous Footing Foundations

Dimensions	• At least 2 feet wide
Depth of Embedment	• At least 2 feet below the lowest adjacent grade
Allowable Bearing Pressure	• 1,500 psf (for restroom and storage building located outside of the landfill refuse limits) • 1,000 psf (for the remaining lightly-loaded improvements located within the landfill refuse limits) • The allowable bearing value may be increased by one-third for transient live loads from wind.
Estimated Settlement	• Approximately 1-inch total settlement (excluding the long-term settlement of the landfill refuse). • Approximately 0.5-inch differential settlement between supports or over 30 feet (excluding the long-term settlement of the landfill refuse).
Allowable Coefficient of Friction	• 0.35 for mass concrete on soils
Allowable Lateral Passive Resistance	• 160 pcf equivalent fluid density. • The passive resistance derived from the upper 12 inches should be neglected. • The passive earth pressure value incorporates a Factor of Safety of 2.

The total allowable lateral resistance can be taken as the sum of the friction resistance and passive resistance. The passive resistance values may be increased by one-third when considering transient wind or seismic loading.

7.7. Concrete Slabs-On-Grade

Based on the soil classification, the on-site lean clay soils were anticipated to have a moderate expansion potential. The recommendations provided in the "Site Preparation" section of this report and in this section are intended to provide a firm bearing subgrade to help reduce the occurrence of cracks in concrete and associated horizontal separation and vertical offset. However, it should be understood that the concrete slabs may still crack due to structural design or detailing, curing, or construction execution even when these recommendations are implemented. If cracking of the concrete is desired to be minimized, the reinforcement, concrete mix, and curing specifications should be designed appropriately by the Structural Engineer and Concrete Specialist.

Subgrade Preparation

The slab subgrade should be prepared in accordance the recommendations provided in the "Site Preparation" section of this report. For the basketball court area, in order to mitigate the effects of

differential settlement, it is recommended that two layers of high strength biaxial geogrid (e.g., Tensar BX1500 or equivalent) or triaxial geogrid (e.g., TX160 or equivalent) or high strength geotextile (Mirafi RS580i or equivalent) be installed in the overexcavated and recompacted subgrade. The geogrid / geotextile should be installed within 1 to 2 feet below the bottom of the slab and extend at least 3 feet beyond the edge of the concrete slabs, wherever feasible.

Design Recommendations

For design of concrete slabs, a modulus of subgrade reaction k_1 on a 1-foot by 1-foot square plate of 75 pounds per cubic inch may be used. For the on-site clayey soils, the modulus of subgrade reaction for a concrete element of a dimension can be calculated as

$$k = \frac{k_1}{B}\frac{1+0.5\frac{B}{L}}{1.5}$$

Where B and L are the width and length of the concrete slab element in feet, respectively, while B is no more than 14 times the thickness of the element, and k is the design modulus of subgrade reaction in pci.

In order to assist with initiation of the floor slab design, the slab-on-ground should have a minimum thickness of 4 inches. Concrete slabs should be designed and reinforced in accordance with the Structural Engineer's recommendations. The minimum reinforcement to reduce separation and offset of potential concrete cracks should consist of No. 4 reinforcing bars spaced at 16 inches on-center, each way, placed in the middle one-third of the section. Reinforcement should be properly placed and supported on blocks or "chairs." Reinforcement should extend through the control joints to reduce the potential for differential movement. Control joints should be constructed in accordance with recommendations from the Structural Engineer and Architect. Welded wire mesh reinforcement is not recommended.

All underslab materials should be adequately compacted prior to the placement of concrete. The materials should be dry or moist and not be wetted or saturated prior to the placement of concrete. Care should be taken during placement of the concrete to prevent displacement of the underslab materials.

7.8. Seismic Design Parameters

The seismic design coefficients for buildings and structures subject to design earthquake based on Chapter 16 of the 2022 California Building Code are provided below in Table 6.

Table 6
Site Categorization and 2022 CBC Site Coefficients
Site coordinates N33.922872° and W-117.957784°

Parameter	Design Value
Site Class (Table 20.3-1 ASCE 7)	D
Short Period Spectral Acceleration Parameter S_s	1.74*
1-sec. Period Spectral Acceleration Parameter S_1	0.616*
Short Period Design Spectral Acceleration Parameter S_{DS}	1.16*
1-sec. Period Design Spectral Acceleration Parameter S_{D1}	0.70
* Values obtained for from OSHPD Seismic Design Maps website, http://seismicmaps.org	

7.9. Utility Installation

Utility conduits should be constructed of flexible materials, and with connection details that will maintain their integrity in the case of anticipated differential and total ground settlements. The use of above- or below-ground "utilidors" (structural utility boxes that provide direct access to pipes) is advisable as an alternative to conventional buried services.

All utility lines and utility connection to proposed structures need to be capable of tolerating the potential total settlement and differential movement between the structure and the adjacent ground. Estimation of the potential settlement of the landfill refuse is beyond the scope of this study. On a preliminary basis, a differential settlement of 6 inches over a distance of 50 feet may be considered in the design.

7.10. Embedded Posts and Poles at Grade

7.10.1. Non-Constrained Case

For the non-constrained case where the pole is not restricted to move at the ground level, the minimum depth of embedment required to resist lateral loads should be determined in accordance with the 2022 CBC Section 1807.3.2.1. The allowable static lateral soil bearing pressure can be assumed to be equal to 160 pounds per cubic foot equivalent fluid density (pcf EFD). Where bare ground (without concrete or asphalt cover) is present adjacent to the foundation, the lateral resistance should be ignored for the upper 12 inches below grade. Therefore, a trapezoidal

pressure distribution should be used starting at 12 inches below grade. The allowable passive earth pressure value incorporates a Factor of Safety of 2. For lateral sliding resistance a coefficient of friction of 0.35 can be used for mass concrete on soil. Vertical compressive loading can be resisted utilizing an allowable end bearing pressure of 1,000 psf.

7.10.2. Constrained Case

For the constrained case where the pole is restricted from movement at the ground level by encasement in surrounding concrete or similar, the minimum depth of embedment required to resist lateral loads should be determined in accordance with the 2022 CBC, Section 1807.3.2.2. The allowable static lateral soil bearing pressure can be assumed to be at least 160 pcf EFD. The constrained earth pressure value incorporates a Factor of Safety of 2. For lateral sliding resistance a coefficient of friction of 0.35 can be used for mass concrete on soil. Vertical compressive loading can be resisted utilizing an allowable end bearing pressure of 1,000 psf.

7.11. Cover Soil Permeability Characterization

To evaluate the suitability and conformance of the existing on-site cover soils for use as a low permeability barrier layer material, i.e., a maximum permeability of 1×10^{-6} cm/sec or less, relatively undisturbed and bulk samples of the cover soils were obtained at the site on February 19, 2020. Laboratory permeability testing was performed on selected samples recovered from the upper 4 feet of the cover soils. Both relatively undisturbed samples and remolded samples were tested in general accordance with ASTM D5084 using Method A for a flexible membrane. All samples were subjected to a confining pressure of 5 psi.

Results of laboratory testing are summarized in Tables 7 and 8 below for remolded and relatively undisturbed samples, respectively. The as-received laboratory testing results are included in Appendix B-1.

Table 7
Laboratory Permeability Test Results (Remolded Samples)

Boring / Sample No.	Depth (ft)	Visual Classification (USCS)	Laboratory Determined Hydraulic Conductivity (ASTM D5084)		
			Remolded Sample Condition Dry Density (pcf) and Moisture Content (%) [initial density/moisture] (final moisture)	Confining Pressure (psi)	Hydraulic Conductivity (cm/sec)
B-102, SK-1	3.0-4.0	Clayey Sand (SC)	remolded: 90 % of maximum dry density at 110 % of optimum [103.4 pcf, 15.5 %] (24.8 %)	5	4.05×10^{-5}
B-104, SK-1	2.5-4.0	Sandy lean Clay (CL)	remolded: 90 % of maximum dry density at 120 % of optimum [104.4 pcf, 17.1 %] (23.7 %)	5	1.28×10^{-6}

Table 8
Laboratory Permeability Test Results (Relatively Undisturbed Samples)

Boring / Sample No.	Depth (ft)	Visual Classification (USCS) and Gradation (ASTM D6913, D7928)	Laboratory Determined Hydraulic Conductivity (ASTM D5084)		
			Sample Dry Density (pcf) and Moisture Content (%) [initial density/moisture] (final moisture)	Confining Pressure (psi)	Hydraulic Conductivity (cm/sec)
B-101, R-2	3.5-4.0	Sandy lean Clay (CL) Sand 18 % Silt & Clay 82 %	[106.7 pcf, 21.2 %] (22.8 %)	5	7.69×10^{-9}
B-102, R-2	3.5-4.0	Clayey Sand (SC) Gravel 3 % Sand 58 % Silt & Clay 39 %	[109.3 pcf, 6.4 %] (19.5 %)	5	3.38×10^{-5}
B-103, R-2	4.0-4.5	Sandy lean Clay (CL) Gravel 2 % Sand 35 % Silt & Clay 63 %)	[98.8 pcf, 13.0 %] (25.9 %)	5	2.58×10^{-5}
B-104, R-2	3.5-4.0	Sandy lean Clay (CL) Sand 32 % Silt & Clay 68 %	[102.9 pcf, 9.3 %] (23.0 %)	5	1.61×10^{-5}
B-105, R-2	3.5-4.0	Sandy lean Clay (CL) Sand 36 % Silt & Clay 64 %	[105.9 pcf, 12.4 %] (21.9 %)	5	7.13×10^{-6}

Laboratory test results indicate hydraulic conductively values ranging from 7.69 x 10^{-9} cm/sec to 4.05 x 10^{-5} cm/sec. Of the seven samples tested, only one (Boring B-101, sample R-2) meets the maximum acceptable prescriptive cover permeability rate of 1 x 10^{-6} cm/sec. The remining samples all tested permeability rates more than one-half order of magnitude faster than the acceptable permeability of 1 x 10^{6} cm/sec. Therefore, direct use of the existing cover soils for a prescriptive permeability-based cover material is not considered acceptable. However, blending of the existing cover materials with lower permeability materials (e.g., bentonite or other locally sourced clay) may be considered to produce the low permeability cover materials. This office can provide additional assistance upon request.

7.12. Pavement Sections

The subgrade preparation in paved areas should conform to the recommendations provided in the "Site Preparation" and "General Site Grading" sections of this report. As the pavement areas may be subject to the effects of significant differential settlement, an as-needed periodic maintenance on the pavements may be required.

7.12.1. Subgrade Preparation

The subgrade preparation and fill placement in paved areas should follow the recommendations provided in the "Site Preparation" section of this report. In order to reduce the effects of differential settlement it is recommended that one layer of high strength biaxial geogrid (e.g., Tensar BX1500 or equivalent) or triaxial geogrid (e.g., TX160 or equivalent) or high strength geotextile (Mirafi RS580i or equivalent) be installed in the pavement subgrade. The geogrid / geotextile should be installed within 8 to 10 inches below the bottom of the pavement aggregate base and extend at least 5 feet beyond the edge of the pavements, whenever feasible.

In the parking and perimeter drive areas within the southern portion of the refuse limits where the final cover soil thickness will be less than 7 feet, additional geogrid reinforcement is recommended. The geogrid-reinforced subgrade for this case should consist of, from top to bottom:

- Asphalt concrete
- 4 inches compacted Aggregate Base
- Triaxial geogrid (e.g., TX160 or equivalent)
- 8 inches Aggregate Base compacted to at least 95 percent relative compaction
- Triaxial geogrid(e.g., TX160 or equivalent)
- 4 inches Aggregate Base compacted to at least 95 percent relative compaction

It is understood that a level of maintenance of the site pavement above what would be considered standard for conventional sites is acceptable to the Client. However, in areas where better performance is preferred/required, an additional layer of the geosynthetics (geogrid or geotextile) should be installed. This should be considered especially for:

- Parking and entry / perimeter drives; and
- PCC pavement areas.

This additional geosynthetics layer should be installed 8 to 10 inches below the first geogrid/geotextile and extend at least 5 feet beyond the edge of the pavement, or flatwork, where feasible.

Alternative ground improvement measures, such as high energy impact compaction (HEIC), may be considered. The methods generally involve the use of a heavy weight impacting the subgrade to improve compaction. Additional details regarding subgrade improvement using this method can be provided upon request.

7.12.2. Asphalt Concrete (AC) Pavement Sections

AC pavement sections have been designed in general accordance with the Caltrans Highway Design Manual method for flexible pavement design using the 20-year design life period. An R-value of 10 based on laboratory testing data of the on-site near surface materials was used for pavement design purposes. The recommended pavement sections for several assumed Traffic Indices are presented in Table 9.

Table 9
Flexible Pavement Sections

Location	Traffic Index	Composite Section		Full Depth Asphalt Concrete Alternative (inches)
		Asphalt Concrete (inches)	Aggregate Base (inches)	
Trails	n/a	2.5	4.0	3.0
Parking	4	3.0	5.0	5.5
Light to moderate traffic areas (e.g., driveways, includes fire truck access)	5	3.0	9.0	7.0
	6	3.5	11.5	9.0

The Client or their representative should select appropriate pavement sections based on the anticipated traffic index. Asphalt concrete and Aggregate Base (AB) should conform to the latest version of Specifications for Public Works Construction (Greenbook) Sections 203-6 and 200-2, respectively. The AB course should be compacted to 95 percent of relative compaction per ASTM D1557.

If further improvement of the long-term performance of the asphalt concrete pavement is preferred, fiberglass filament grid reinforcement may be considered (e.g., TenCate Mirafi MPG100, Tensar GlassGrid GP50, or similar) positioned within the asphalt pavement portion (i.e., sandwiched) between the asphalt leveling course and the surface course asphalt.

7.12.3. Concrete Pavement Design

Because of its relatively poor resistance to differential settlement, the use of Portland cement concrete (PCC) pavement at the site is discouraged but may be considered if ongoing maintenance and repair are acceptable. PCC pavement sections for driveway and parking areas based on ACI design method (ACI 330R-08) are presented in Table 10.

Table 10
PCC Pavement Structural Sections

		Subgrade Soil	Lean clay; Silty / clayey sand
		Modulus of Subgrade Reaction, k	75 pci
		Thickness of CMB Base Course	6 inches
		Modulus of Subgrade Reaction adjusted for Base Course k_r	150 pci
		PCC Pavement 28-day concrete compressive strength	4000 psi
Category	**ADTT[1]**	**Pavement Traffic Description**	**PCC Thickness (inches)**
A	0	Car parking areas and access lanes Autos, pickups, and panel trucks only	4.0
A-1	10	Truck access lanes	6.0
B	25	Single-unit truck parking areas and interior lanes	6.5

Note: [1]Average Daily Truck Traffic

The Client or their representative should select appropriate pavement section based on the anticipated traffic category and volume. The PCC pavement should be placed on at least 12 inches of aggregate base compacted to at least 95 percent of the maximum dry density (ASTM D1557). The base course should meet specifications as described in the Asphalt Concrete Pavement Design section of this report. Contraction, construction, and isolation joints should be placed in accordance with ACI recommendations.

Optionally, the pavement sections may be reinforced with No.3 reinforcing bars spaced 24 inches on center, each way, to further reduce potential for shrinkage and settlement-induced cracking. Reinforcement steel and tie bar requirements should also meet ACI recommendations.

7.13. Soil Corrosion Potential

The corrosion potential of the on-site materials to buried steel and concrete was evaluated based on laboratory testing of one selected soil sample. Table 11 below presents the results of the corrosivity testing.

Table 11
Corrosivity Test Results

Boring	Sample ID	Soil type	Depth (feet)	pH	Minimum Resistivity (ohm-cm)	Chlorides (%)	Soluble Sulfate Content in Soil (%)
B-9	SK-1	Clayey Sand (SC)	0 - 5	7.5	2,032	0.0037	0.0084 Category S0 per 2019 CBC

Per 2022 CBC 2, Section 1904.1, concrete subject to exposure to sulfates shall comply with the durability requirements set forth in ACI 318 with the modifications included in Section 1905 of 2022 CBC. Based on the measured water-soluble sulfate results the exposure of buried concrete to sulfate attack is not a concern, i.e., exposure class S0 per ACI 318-14, Table 19.3.1.1. Consequently, per Table 19.3.2.1 injurious sulfate attack would not be anticipated for concrete with a minimum 28-day compressive strength of 2,500 psi.

Per 2022 CBC, Section 1904.1, concrete, including protection for corrosion and exposure to chlorides, shall conform to durability requirements established in ACI 318. Reinforcement should be protected from corrosion in accordance with ACI 318-14 Chapter 19.

The evaluation of potential for corrosion of buried metals was based on the minimum resistivity and our experience with similar soils. The on-site soils are anticipated to likely have a "moderately corrosive" potential to buried metals. A corrosion specialist should be consulted regarding suitable types of piping and necessary protection for underground metal conduits. The corrosion potential of the on-site soils should be verified during construction for each encountered soil type. If required, imported fill materials should be tested prior to placement to confirm that their corrosion potential is no more severe than the one assumed for the project.

7.14. Post-Construction Inspection and Maintenance Program

Periodic inspection and maintenance of the driveway and parking area pavements, modular restroom and storage building, concrete slabs, and other ground improvements is recommended. It is anticipated that the maintenance effort will be most intensive over the initial five years and will then progressively decrease. The maintenance can range from minor pavement patching and re-grading to installation of leveling layers on floors and pavements and re-leveling of structures by compaction grouting.

7.15. Drainage Control

The intent of this section is to provide general information regarding the control of surface water. The control of surface water is essential to the satisfactory performance of the facility construction and site improvements. Surface water should be controlled so that conditions of uniform moisture are maintained beneath and adjacent to the structure, even during periods of heavy rainfall. The following recommendations should be considered as minimal.

- Ponding and areas of low flow gradients should be avoided.
- Paved surfaces should be provided with a gradient of at least 1 percent sloping away from improvements.
- Unpaved areas, e.g., turf, should be provided with a drainage gradient of at least 2 percent away from structures.
- Bare soil, e.g., planters, within 5 feet of the structure should be sloped away from the improvement at a gradient of 5 percent.
- Positive drainage devices, such as graded swales, paved ditches, and/or catch basins should be employed to accumulate and convey water to appropriate discharge points.
- Concrete walks and flatwork should not obstruct the free flow of surface water.
- Brick flatwork should be sealed by mortar or be placed over an impermeable membrane.
- Area drains should be recessed below grade to allow free flow of water into the basin.
- Enclosed raised planters should be sealed at the bottom and provided with an ample flow gradient to a drainage device. Recessed planters and landscaped areas should be provided with area inlet and subsurface drain pipes.
- To the extent practicable, planters should not be located adjacent to the structure. If planters are to be located adjacent to the structure, the planters should be positively sealed, should incorporate a subdrain and should be provided with free discharge capacity to a drainage device.
- Planting areas at grade should be provided with positive drainage. Wherever possible, the grade of exposed soil areas should be established above adjacent paved grades. Drainage devices and curbing should be provided to prevent runoff from adjacent pavement or walks into planted areas.
- Gutter and downspout systems should be provided to capture discharge from roof areas. The accumulated roof water should be conveyed to an off-site disposal area by a pipe or concrete swale system.
- Landscape watering should be performed judiciously to preclude either soaking or desiccation of soils. The watering should be such that it just sustains plant growth without excessive infiltration. Sprinkler systems should be checked periodically to detect leakage and irrigation efforts should be reduced or halted during the rainy season.

8. GENERAL SITE GRADING RECOMMENDATIONS

The intent of this section is to provide general information regarding the site grading. Site grading operations should conform with applicable local building and safety codes and to the rules and regulations of those governmental agencies having jurisdiction over the subject construction.

The grading contractor is responsible for notifying governmental agencies, as required, and a representative of Tetra Tech at the start of site cleanup, at the initiation of grading, and any time that grading operations are resumed after an interruption. Each step of the grading should be accepted in a specific area by a representative of Tetra Tech, and where required, should be approved by the applicable governmental agencies prior to proceeding with subsequent work.

The following site grading recommendations should be regarded as minimal. The site grading recommendations should be incorporated into the project plans and specifications.

1. Prior to grading, existing vegetation, surface structures, foundation elements, and debris should be removed and disposed off-site at a legal dumpsite. Any existing utility lines, or other subsurface structures which are not to be utilized, should be removed, destroyed, or abandoned in compliance with current governmental regulations.

2. Subsequent to cleanup operations, and prior to initial grading, a reasonable search should be made for subsurface obstructions and/or possible loose fill or detrimental soil types. This search should be conducted by the contractor, with advice from and under the observation of a representative of Tetra Tech.

3. Prior to the placement of fill or foundations, the site should be prepared in accordance with the recommendations presented in the section "Site Preparation" of this report. All undocumented fill or disturbed soils within the proposed modular building footprint, and extending laterally beyond the footprint a distance equivalent to the depth of removal, should be removed and processed as recommended by the representative of Tetra Tech.

4. The exposed subgrade and/or excavation bottom within the modular building removal should be observed and approved by a representative of Tetra Tech for conformance with the intent of the recommendations presented in this report and prior to any further processing or fill placement. It should be understood that the actual encountered conditions may warrant excavation and/or subgrade preparation beyond the extent recommended and/or anticipated in this report.

5. On-site inorganic granular soils that are free of debris or contamination are considered suitable for placement as compacted fill. Any rock or other non-degradable soil fragments greater than 6 inches in size should not be placed within 5 feet of the modular building foundation subgrade.

6. Any imported fill material required for backfill or grading should be tested and approved prior to delivery to the site.

7. Visual observations and field tests should be performed during grading by a representative of Tetra Tech. This is necessary to assist the contractor in obtaining the proper moisture content and required degree of compaction. Wherever, in the opinion of a representative of Tetra Tech, an unsatisfactory condition is being created in any area, whether by cutting or filling, the work should not proceed in that area until the condition has been corrected.

9. DESIGN REVIEW AND CONSTRUCTION MONITORING

Geotechnical review of plans and specifications is of paramount importance in engineering practice. The poor performance of many structures has been attributed to inadequate geotechnical review of construction documents. Additionally, observation and testing of the subgrade, fill materials, and imported soils will be important to the performance of the proposed development. The following sections present our recommendations relative to the review of construction documents and the monitoring of construction activities.

9.1. Plans and Specifications

The design plans and specifications should be reviewed and approved by Tetra Tech prior to bidding and construction, as the geotechnical recommendations may need to be re-evaluated in the light of the actual design configuration and loads. This review is necessary to evaluate whether the recommendations contained in this report have been incorporated into the project plans and specifications as intended.

9.2. Grading Monitoring

Site preparation, assessment of imported fill materials, fill placement, and other site grading operations should be observed and tested. The subgrade soils exposed during the construction may differ from those anticipated in the preparation of this report. Continuous observation by a representative of Tetra Tech should be implemented during construction to allow for evaluation of the soil conditions as they are encountered, and to provide the opportunity to recommend appropriate revisions as needed.

9.3. Footing Observations

To evaluate the presence of satisfactory materials at design elevations, footing excavations should be observed by a representative of Tetra Tech, and be clean of loosened soil and debris before placing steel or concrete. If soft or loose soils or other unsatisfactory materials are encountered, such materials should be removed and replaced with compacted fill prior to pouring the footing.

10. LIMITATIONS

The recommendations and opinions expressed in this report are based on Tetra Tech's review of background documents and on information obtained from field explorations and the associated laboratory testing.

Due to the limited nature of the field explorations, conditions not observed and described in this report may be present on the site. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface evaluation and laboratory testing can be performed upon request. It should be understood that conditions different from those anticipated in this report may be encountered during grading operations, for example, the extent of encounter of unsuitable soil and the associated additional effort required to mitigate them.

Site conditions, including groundwater level, can change with time as a result of natural processes or the activities of man at the subject site or at nearby sites. Changes to the applicable laws, regulations, codes, and standards of practice may occur as a result 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 Tetra Tech has no control. Therefore, this report should be reviewed and recertified if it were to be used for a project design commencing more than 1 year after the date of issuance of this report.

Tetra Tech's recommendations for this site are, to a high degree, dependent upon appropriate quality control of subgrade preparation, fill placement, and foundation construction. Accordingly, the recommendations are made contingent upon the opportunity for Tetra Tech to observe grading operations and foundation excavations for the proposed construction. If parties other than Tetra Tech are engaged to provide such services, such parties are expressly assuming complete responsibility as the Geotechnical Engineer of Record for the project and are expressly concurring with the recommendations in this report or are obligated to provide alternative recommendations..

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. Tetra Tech should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document. Reliance by others on the data presented herein or for purposes other than those stated in the text is authorized only if permitted in writing by Tetra Tech. It should be understood that such an authorization may incur additional expenses and charges.

Tetra Tech has endeavored to perform its evaluation using the degree of care and skill ordinarily exercised under similar circumstances by reputable geotechnical professionals with experience in this area in similar soil conditions. No other warranty, either expressed or implied, is made as to the conclusions and recommendations contained in this report.

11. SELECTED REFERENCES

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Figures



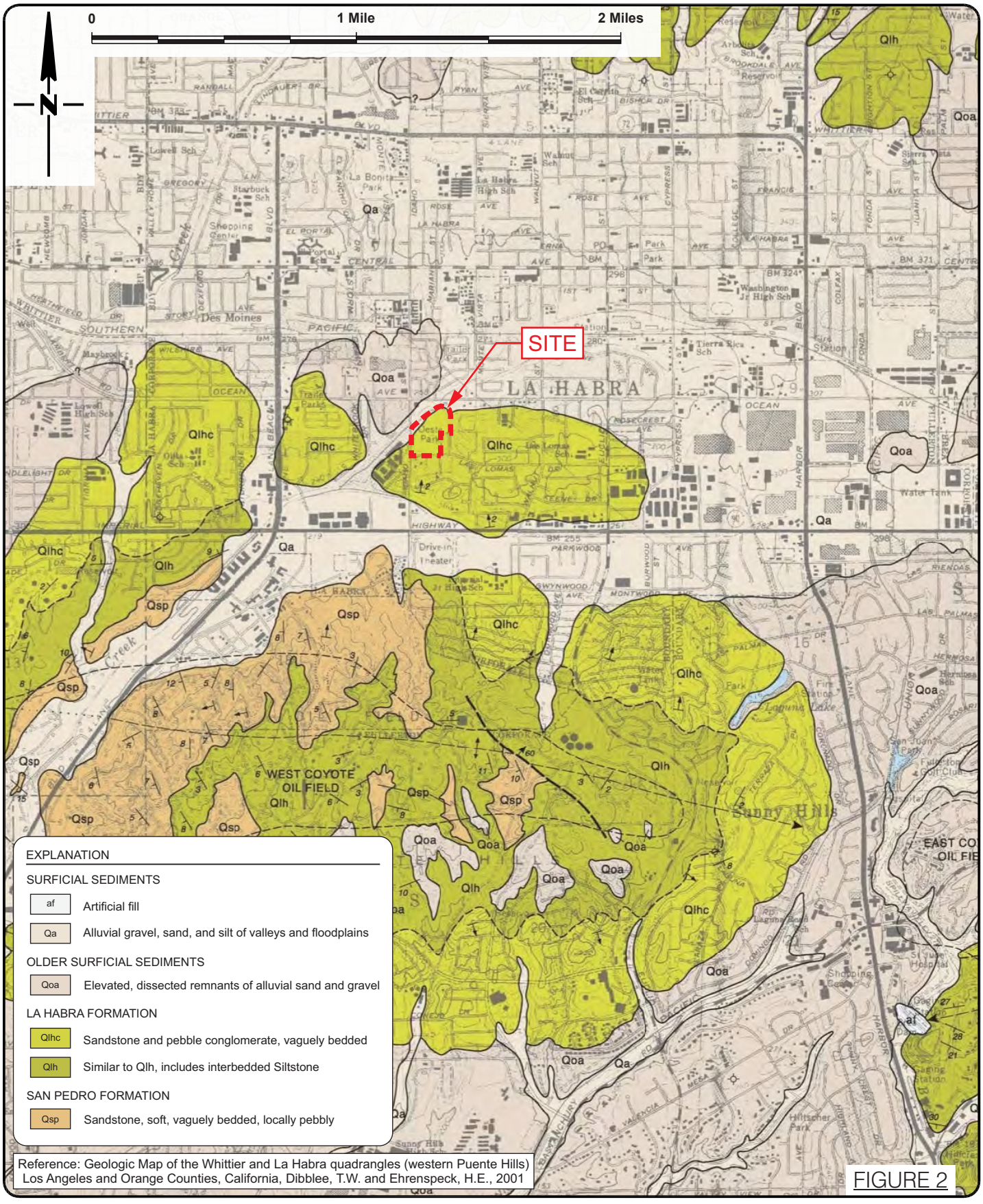
FIGURE 1

TETRA TECH
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VISTA GRANDE PARK – LA HABRA, CA

PROJECT LOCATION MAP

JOB NO.	BAS 19-142E
DATE	JUN 2023
DRAWN BY	TAC
CHECKED BY	YLI



Reference: Geologic Map of the Whittier and La Habra quadrangles (western Puente Hills) Los Angeles and Orange Counties, California, Dibblee, T.W. and Ehrenspeck, H.E., 2001

FIGURE 2

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VISTA GRANDE PARK – LA HABRA, CA

GEOLOGIC MAP

JOB NO.	BAS 19-142E
DATE	JUN 2023
DRAWN BY	SCM
CHECKED BY	DML

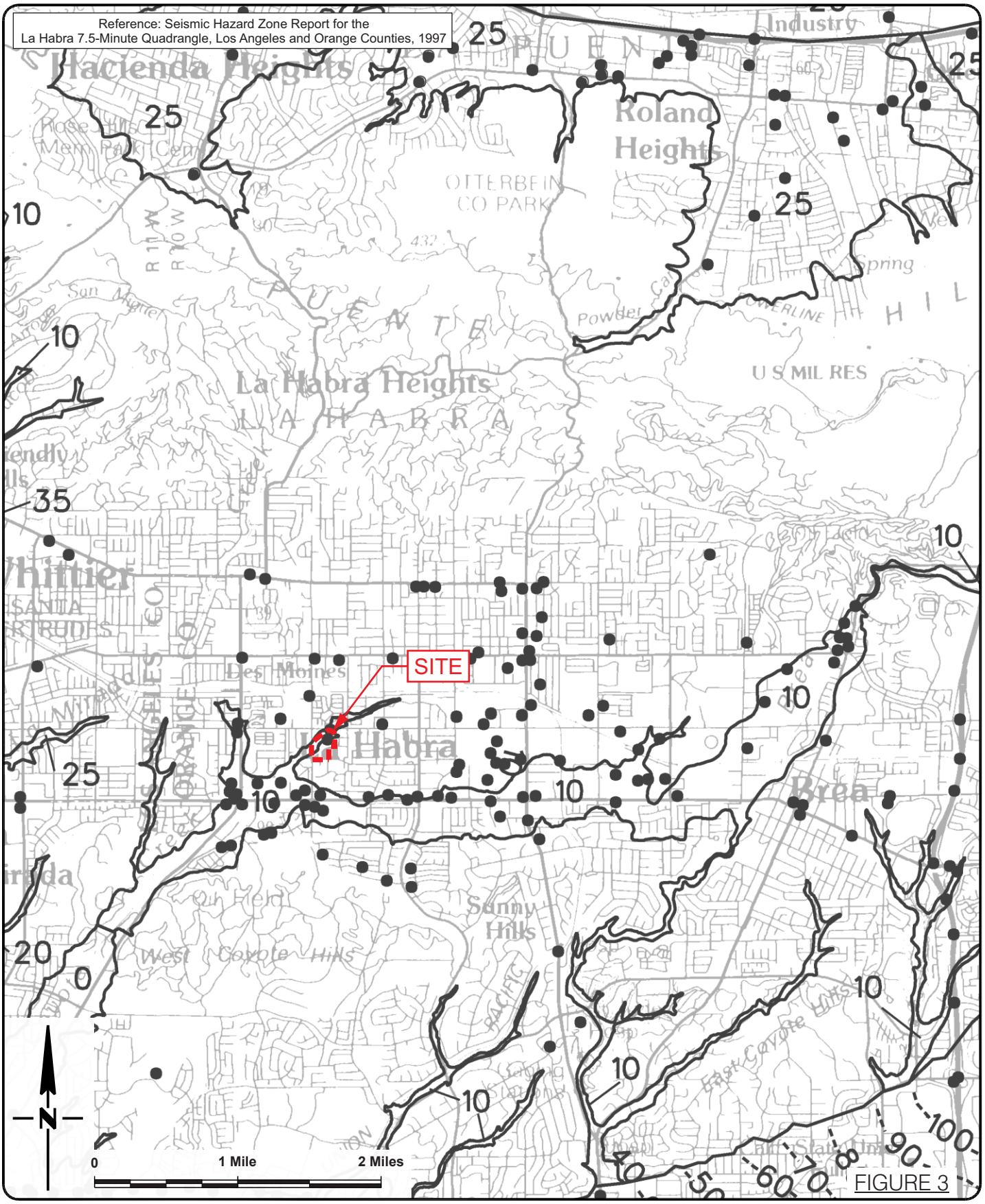


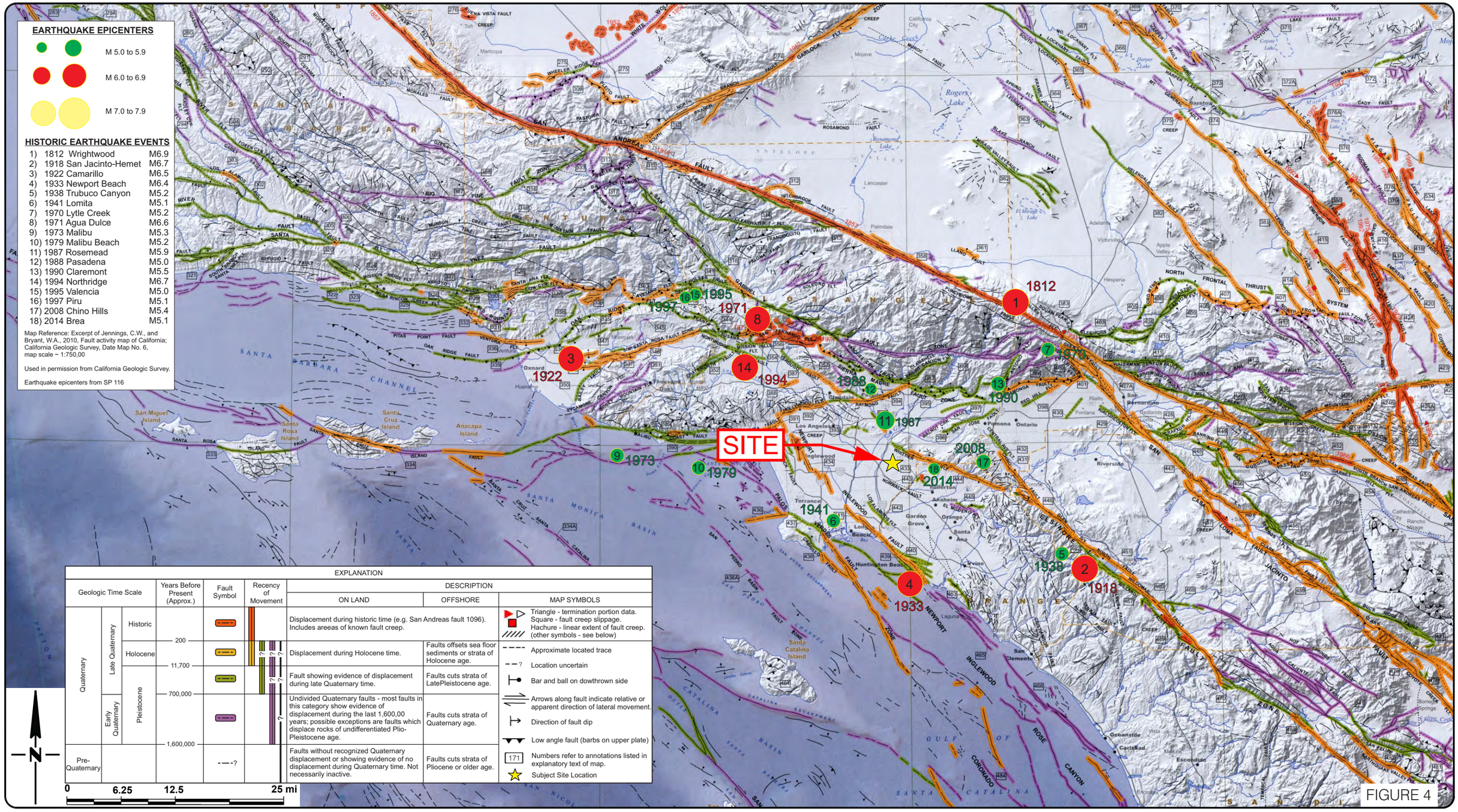
FIGURE 3

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VISTA GRANDE PARK – LA HABRA, CA

HISTORIC HIGH GROUNDWATER DEPTH MAP

JOB NO.	BAS 19-142E
DATE	JUN 2023
DRAWN BY	SCM
CHECKED BY	DML



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ADVENTURE PARK - WHITTIER, CA

REGIONAL FAULTS AND SEISMICITY MAP

JOB NO.	TET 20-179E
DATE	JUN 2023
DRAWN BY	TAC
CHECKED BY	FC

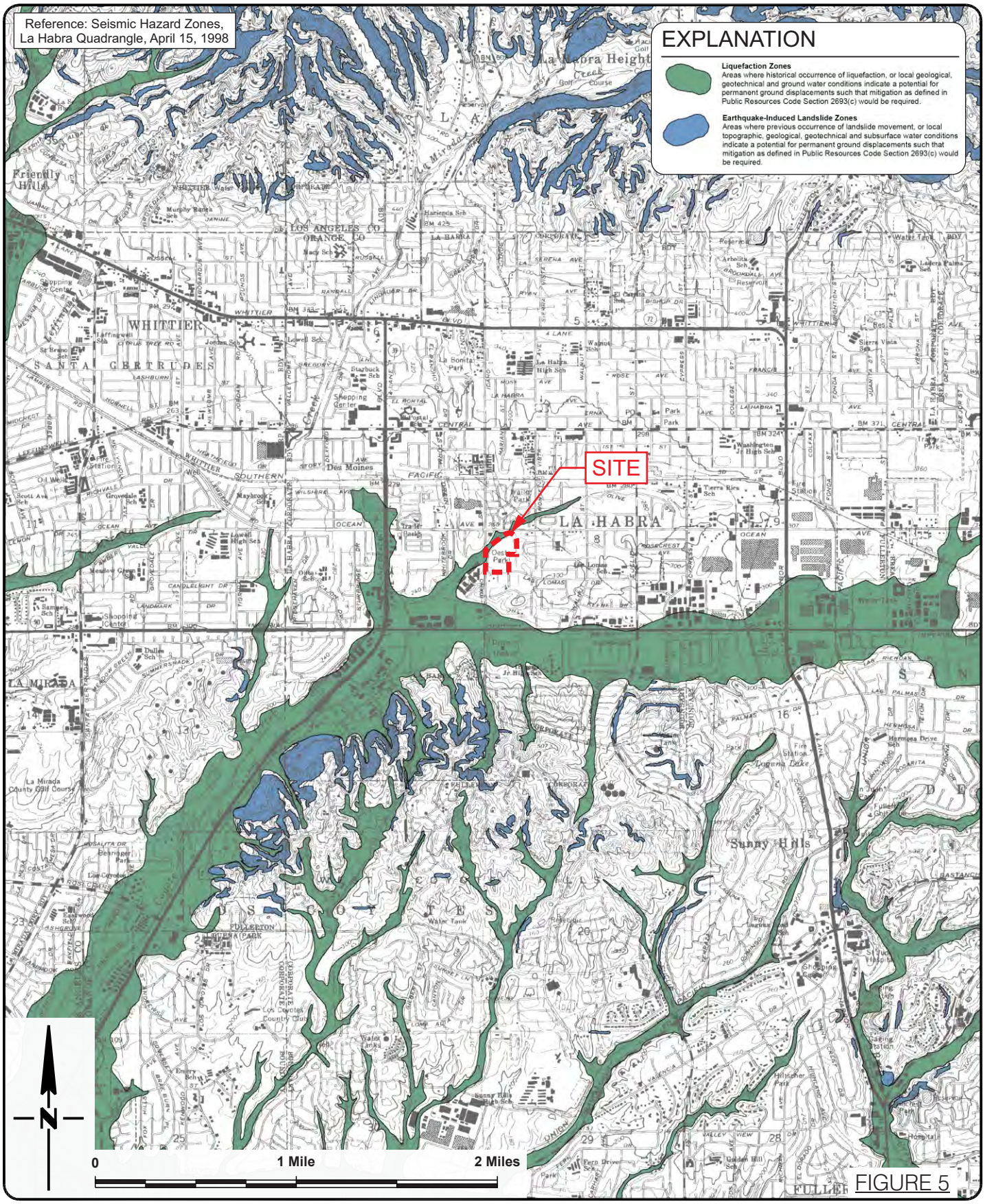


FIGURE 5

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VISTA GRANDE PARK – LA HABRA, CA

SEISMIC HAZARD ZONES MAP

JOB NO.	BAS 19-142E
DATE	JUN 2023
DRAWN BY	SCM
CHECKED BY	DML

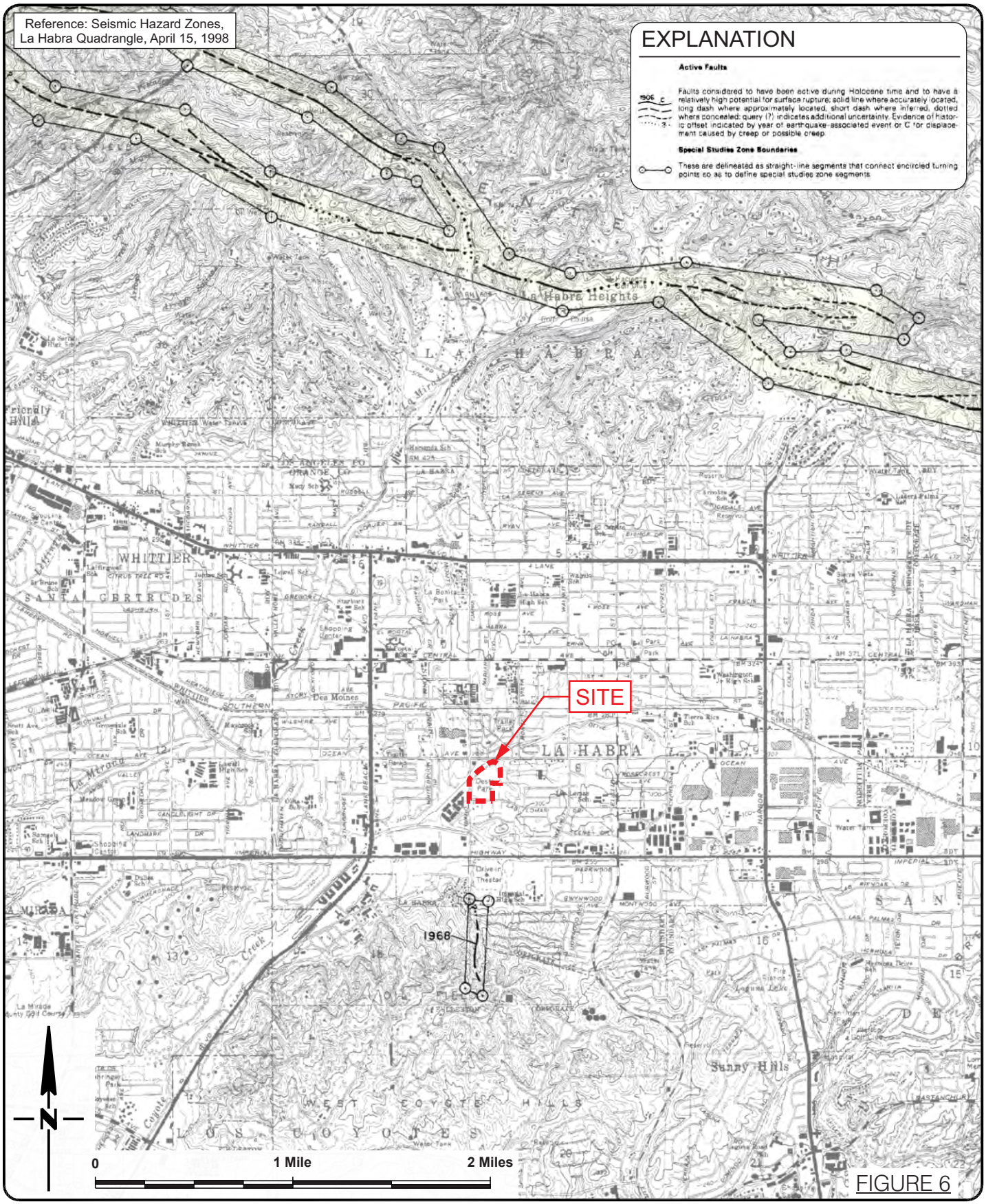


FIGURE 6

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VISTA GRANDE PARK – LA HABRA, CA

EARTHQUAKE FAULT ZONE MAP

JOB NO.	BAS 19-142E
DATE	JUN 2023
DRAWN BY	SCM
CHECKED BY	DML

Plate

WEST LAMBERT ROAD

SOUTH IDAHO STREET

LAS LOMAS DRIVE

Coyote Creek Drainage Channel (unlined)

Existing Building Footprint

B-1	269.5'	260'
	NE	NE
B-2	273.8'	266.8'
	NE	NE
B-3	273.3'	259.3'
	NE	NE
B-4	274.1'	262.1'
	NE	NE
B-5	274.8'	267.8'
	NE	NE
B-6	277.7'	265.7'
	NE	NE
B-7	279.4'	266.4'
	NE	NE
B-8	277'	270'
	NE	NE
B-9	281.4'	NE
	277.4'	NE
B-10	271.6'	268.1'
	NE	NE
B-11	270.4'	266.9'
	NE	NE
B-12	276.8'	267.3'
	NE	NE
B-13	276.8'	269.8'
	NE	NE

B-4	273'	264.5'
	232.5'	NE
C-1	267'	258.5'
	241'	NE
C-2	271'	268'
	252'	NE
C-3	279'	268'
	NE	NE
C-4	272'	267'
	227'	NE
C-5	281'	273'
	258'	NE
C-6	279'	273'
	NE	NE
C-7	270'	262'
	226'	NE
C-8	271'	253.5'
	223'	NE
C-9	274'	266'
	226'	NE
C-10	273'	264'
	234'	NE

MW-2

MW-3

MW-5

Piles

Unpaved

SCALE

40 0 40 80 120 Feet

GRID NORTH

EXPLANATION

B-9 BORING LOCATION (Tetra Tech 2019)

C-5 CPT LOCATION (GPI 2016)

B-1 BORING LOCATION (GPI 2016)

MW-3 MONITORING WELL LOCATION
Previously installed by others

Approximate Surface Elevation | Elevation of Cover/ Refuse interface

271' | 268'

252' | NE

Elevation of Refuse/ Native interface | Elevation of Groundwater (NE = Not Encountered)

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VISTA GRANDE PARK
SITE PLAN AND BORING LOCATION MAP

PROJECT NO.:	DATE:	DRAWN BY:	
BAS 19-142E	JUNE 2022	SCM	PLATE 1

Appendix A

Logs of Exploratory Borings

Appendix A-1

Tetra Tech BAS GeoScience Exploratory Borings

Logs of Exploratory Borings
Sampling Methodology and Procedures

Bulk and relatively undisturbed drive samples were obtained in the field during our subsurface evaluation. All samples recovered from the borings were marked with a unique sample identification number in the field and transported to our laboratory for additional observation and testing. Drive samples were obtained using a California Split Barrel ring-type sampler and Standard Penetration Test (SPT) sampler as described below.

California Split Barrel Drive Sampler

The split barrel drive sampler was driven with a 140-pound automatic trip hammer allowed to drop freely 30 inches. The number of blows per foot were recorded during sampling and are presented on the exploratory boring logs (Appendix A). The sampler has external and internal diameters of approximately 3.0 and 2.4 inches, respectively. The interior of the sampler is lined with 1-inch-long brass rings. The relatively undisturbed soil sample along with the confining brass rings is removed, sealed in a plastic bag and airtight rigid container, and transported to the laboratory for observation and testing.

Standard Penetration Test Sampler

Standard Penetration Test sampler is driven with a 140-pound automatic trip hammer allowed to drop freely 30 inches in general accordance with ASTM D1586. The number of blows (uncorrected N-value) required to drive the SPT sampler 12 inches is shown on the exploratory boring logs. The sampler has external and internal diameters of approximately 2.0 and 1.4 inches respectively. The sampling tube consists of an unlined split-tube barrel. Recovered disturbed soil samples are removed, sealed in a plastic bag, and transported to the laboratory for observation and testing.

Project: **Vista Grande Park**
Project Location: **La Habra, CA**
Project Number: **TET 19-142E**

Key to Log of Boring

Sheet 1 of 1

1 Elevation (feet)	2 Depth (feet)	3 Sample Type	4 Sample Number	5 Sampling Resistance, blows/ft	6 USCS Symbol	7 Graphic Log	8 MATERIAL DESCRIPTION	9 Water Content, %	10 Dry Unit Weight, pcf	11 REMARKS AND OTHER TESTS

COLUMN DESCRIPTIONS

1. Elevation (feet): Elevation (MSL, feet).
2. Depth (feet): Depth in feet below the ground surface.
3. Sample Type: Type of soil sample collected at the depth interval shown.
4. Sample Number: Sample identification number.
5. Sampling Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log.
6. USCS Symbol: USCS symbol of the subsurface material.
7. Graphic Log: Graphic depiction of the subsurface material encountered.
8. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
9. Water Content, %: Water content of the soil sample, expressed as percentage of dry weight of sample.
10. Dry Unit Weight, pcf: Dry weight per unit volume of soil sample measured in laboratory, in pounds per cubic foot.
11. REMARKS AND OTHER TESTS: Comments and observations regarding drilling or sampling made by driller or field personnel.

FIELD AND LABORATORY TEST ABBREVIATIONS

MATERIAL GRAPHIC SYMBOLS

- Lean CLAY, CLAY w/SAND, SANDY CLAY (CL)
- SILTY CLAY (CL-ML)
- Claystone
- AF
- Sandstone
- Clayey SAND (SC)
- Silty SAND (SM)
- Poorly graded SAND (SP)

TYPICAL SAMPLER GRAPHIC SYMBOLS

- Auger sampler
- Bulk Sample
- 3-inch-OD California w/ brass rings
- CME Sampler
- Grab Sample
- 2.5-inch-OD Modified California w/ brass liners
- Pitcher Sample
- 2-inch-OD unlined split spoon (SPT)
- Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS

- Water level (at time of drilling, ATD)
- Water level (after waiting)
- Minor change in material properties within a stratum
- Inferred/gradational contact between strata
- Queried contact between strata

GENERAL NOTES

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **TET 19-142E**	Log of Boring B-1 **Sheet 1 of 1**

Date(s) Drilled **8/8/2019**	Logged By **LJM**	Checked By **DML**
Drilling Method **Hollow-Stem Auger (HSA)**	Drill Bit Size/Type **8" Diameter**	Total Depth of Borehole **11.5 ft**
Drill Rig Type **CME 75**	Drilling Contractor **ABC Liovin**	Approximate Surface Elevation **269.5 ft**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140lb Automatic Trip Hammer, 30-inch drop**
Borehole Backfill **Cement bentonite grout, soil cuttings**	Location **Northing: 2284022.7 ft Easting: 6043775.4 ft**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
269.5	0				SM		[FILL] Landfill Cover Soil: Silty SAND with Gravel, medium dense, dark yellow brown (10YR 4/4), damp, fine to medium grained, trace of clay and rootlets			
			R-1	10 9 15			@2.5'- as above	12.8	107.7	
264.5	5		SK-3		CL		Sandy CLAY with Gravel, stiff, dark brown (10YR 3/3), damp			
			SPT-2	5 4 5				10.6		
			R-4	4 4 11			@7.5'- color change to very dark brown (10YR 2/2), with interbeds of gray (5Y 5/1) sandy SILT	22.0	100.7	
259.5	10		SPT-5	2 4 4	Fill		[FILL] Landfill Refuse: Interbedded refuse (wood, plastic, glass, newspaper, concrete) and clay, firm, dark gray (5Y 4/1), moist, strong odor			0.3ppm PID-sample, 0.0ppm PID-breathing zone
254.5	15						1) Total depth of boring 11.5 ft. 2) No groundwater encountered. 3) PID readings measured with a MiniRAE3000 portable meter equiped with a 10.6 eV lamp. 4) Boring backfilled with cement-bentonite grout 11.5-1.0ft, soil cuttings 1.0-0.0ft. 5) Boring location and elevation from survey by Tetra Tech BAS, 9/16/2019.			
249.5	20									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **TET 19-142E**	Log of Boring B-2 **Sheet 1 of 1**

Date(s) Drilled **8/8/2019**	Logged By **LJM**	Checked By **DML**
Drilling Method **Hollow-Stem Auger (HSA)**	Drill Bit Size/Type **8" Diameter**	Total Depth of Borehole **9.0 ft**
Drill Rig Type **CME 75**	Drilling Contractor **ABC Liovin**	Approximate Surface Elevation **273.8 ft**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140lb Automatic Trip Hammer, 30-inch drop**
Borehole Backfill **Cement bentonite grout, soil cuttings**	Location **Northing: 2283882.6 ft Easting: 6043554.8 ft**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
273.8	0				CL		[FILL] Landfill Cover Soil: Sandy Lean CLAY, stiff, dark yellow brown (10YR 4/4), fine to medium grained, damp, trace rootlets			
			R-1	15 21 14			@2.5'- as above	4.9	107.1	GRADATION
268.8	5		SK-2				@5.0'- with gravel, color change to dark grayish brown (10YR 4/2), odor	9.9		
			SPT-3	7 12 10						
					Fill		[FILL] Landfill Refuse: Refuse (wood, plastic, glass, newspaper, concrete), very stiff, black (5Y 2.5/1), moist			1.5ppm PID - sample, 0.1ppm PID - breathing zone
			R-4	8 8 23						
263.8	10						1) Total depth of boring 9.0 ft. 2) No groundwater encountered. 3) PID readings measured with a MiniRAE3000 portable meter equiped with a 10.6 eV lamp. 4) Boring backfilled with cement-bentonite grout 9.0-1.0ft, soil cuttings 1.0-0.0ft. 5) Boring location and elevation from survey by Tetra Tech BAS, 9/16/2019.			
258.8	15									
253.8	20									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **TET 19-142E**	Log of Boring B-3 **Sheet 1 of 1**

Date(s) Drilled **8/8/2019**	Logged By **LJM**	Checked By **DML**
Drilling Method **Hollow-Stem Auger (HSA)**	Drill Bit Size/Type **8" Diameter**	Total Depth of Borehole **15.3 ft**
Drill Rig Type **CME 75**	Drilling Contractor **ABC Liovin**	Approximate Surface Elevation **273.3 ft**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140lb Automatic Trip Hammer, 30-inch drop**
Borehole Backfill **Cement bentonite grout, soil cuttings**	Location **Northing: 2283733.9 ft Easting: 6043345.5 ft**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
273.3	0				SC		[FILL] Landfill Cover Soil: Clayey SAND, medium dense, light yellowish brown (10YR 6/4), fine to medium grained, damp			
			R-1	9 12 22				17.9	106.1	
268.3	5		SK-2		CL		Sandy Lean CLAY, hard, light olive brown 92.5Y 5/3), damp			
			SPT-3	3 19 18				10.7		
			R-4	6 10 12			@7.5'- stiff	16.7	105.3	
263.3	10		SPT-5	17 11 50/1"	SP		CLAY and Poorly Graded SAND, hard, dense, light yellowish brown (10YR 6/4), fine to medium grained	14.8		Concrete fragment in sampler shoe
			SPT-6	50/4"\ SR			@12.5'- as above			No sample recovered
258.3	15		SPT-7	50/4"	Fill		[FILL] Landfill Refuse: Interbedded refuse (wood, plastic, glass, newspaper) and clay, hard, moist			9.1ppm PID - sample, 0.0 PID - breathing zone, no recovery
253.3	20						1) Total depth of boring 15.3 ft. 2) No groundwater encountered. 3) PID readings measured with a MiniRAE3000 portable meter equiped with a 10.6 eV lamp. 4) Boring backfilled with cement-bentonite grout 15.3-1.0ft, soil cuttings 1.0-0.0ft. 5) Boring location and elevation from survey by Tetra Tech BAS, 9/16/2019.			

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TETRA TECH

Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **TET 19-142E**	Log of Boring B-4 **Sheet 1 of 1**

Date(s) Drilled **8/8/2019**	Logged By **LJM**	Checked By **DML**
Drilling Method **Hollow-Stem Auger (HSA)**	Drill Bit Size/Type **8" Diameter**	Total Depth of Borehole **14.0 ft**
Drill Rig Type **CME 75**	Drilling Contractor **ABC Liovin**	Approximate Surface Elevation **274.1 ft**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140lb Automatic Trip Hammer, 30-inch drop**
Borehole Backfill **Cement bentonite grout, soil cuttings**	Location **Northing: 2283828.8 ft Easting: 6043666.5 ft**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
274.1	0				SM		[FILL] Landfill Cover Soil: Silty SAND with Gravel, medium dense, yellowish red (5YR 5/6), damp, trace rootlets, odor			
			R-1	11 15 16			@2.5'- as above	4.4	109.1	
269.1	5		SK-2		CL		Sandy Lean CLAY, stiff, brown (7.5YR 5/3), moist, odor			
			SPT-3	4 6 8				14.1		
					CL		CLAY, stiff, gray (5Y 5/1), damp, odor			
			SPT-4	3 5 8				20.7		
264.1	10		R-5	3 6 9			@10.0'- no odor			0.0ppm PID - sample/ breathing zone 1.7ppm PID - borehole, 0.0ppm PID - breathing zone, no sample recovery
			SPT-6	11 5 7	Fill		[FILL] Landfill Refuse: Interbedded refuse (wood, plastic, glass, newspaper) and clay, stiff, moist			
259.1	15						1) Total depth of boring 14.0 ft. 2) No groundwater encountered. 3) PID readings measured with a MiniRAE3000 portable meter equiped with a 10.6 eV lamp. 4) Boring backfilled with cement-bentonite grout 14.0-1.0ft, soil cuttings 1.0-0.0ft. 5) Boring location and elevation from survey by Tetra Tech BAS, 9/16/2019.			
254.1	20									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **TET 19-142E**	Log of Boring B-5 **Sheet 1 of 1**

Date(s) Drilled **8/8/2019**	Logged By **LJM**	Checked By **DML**
Drilling Method **Hollow-Stem Auger (HSA)**	Drill Bit Size/Type **8" Diameter**	Total Depth of Borehole **9.0 ft**
Drill Rig Type **CME 75**	Drilling Contractor **ABC Liovin**	Approximate Surface Elevation **274.8 ft**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140lb Automatic Trip Hammer, 30-inch drop**
Borehole Backfill **Cement bentonite grout, soil cuttings**	Location **Northing: 2283795.2 ft Easting: 6043872.4 ft**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
274.8	0				SM		[FILL] Landfill Cover Soil: Silty SAND with Gravel, loose, olive gray (5Y 5/2), fine grained, damp, trace of clay			
			R-1	7 7 8				18.0	107.2	GRADATION
269.8	5		SK-3		CL		Sandy Lean CLAY, stiff, gray (5Y 5/1), damp, trace gravel, organic traces			
			SPT-2	4 4 6				19.4		
					Fill		[FILL] Landfill Refuse: Glass and asphalt in Sandy CLAY matrix, firm, black (5Y 2.5/1), moist			1.6ppm PID - sample, 0.0 ppm PID - breathing zone
			SPT-4	3 4 4				14.5		
264.8	10						1) Total depth of boring 9.0 ft. 2) No groundwater encountered. 3) PID readings measured with a MiniRAE3000 portable meter equiped with a 10.6 eV lamp. 4) Boring backfilled with cement-bentonite grout 9.0-1.0ft, soil cuttings 1.0-0.0ft. 5) Boring location and elevation from survey by Tetra Tech BAS, 9/16/2019.			
259.8	15									
254.8	20									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **TET 19-142E**	Log of Boring B-6 **Sheet 1 of 1**

Date(s) Drilled **8/8/2019**	Logged By **LJM**	Checked By **DML**
Drilling Method **Hollow-Stem Auger (HSA)**	Drill Bit Size/Type **8" Diameter**	Total Depth of Borehole **14.0 ft**
Drill Rig Type **CME 75**	Drilling Contractor **ABC Liovin**	Approximate Surface Elevation **277.7 ft**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140lb Automatic Trip Hammer, 30-inch drop**
Borehole Backfill **Cement bentonite grout, soil cuttings**	Location **Northing: 2283619.0 ft Easting: 6043495.7 ft**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
277.7	0				CL		[FILL] Landfill Cover Soil: Lean CLAY with Sand, stiff, yellowish brown (10YR 5/6), damp, rootlets			
			R-1	8 7 10				13.1	94.1	PI, CONSOL, DS
272.7	5		SK-2		CL		Sandy Lean CLAY, stiff, yellowish brown (10YR 5/6), damp, carbonate stringers			
			SPT-3	6 4 5				14.5		GRADATION
			R-4	11 14 27			@7.5'- very stiff	11.2	99.7	
267.7	10		SPT-5	8 11 15	CL		Sandy Lean CLAY, very stiff, olive brown (2.5Y 4/3), damp	12.9		
			R-6	11 8 39	Fill		[FILL] Landfill Refuse: Glass, newspaper, and wood in Clayey SAND matrix, medium dense, gray (5Y 5/1), moist, odor			11.5ppm PID - sample, 0.0ppm PID - breathing zone
262.7	15						1) Total depth of boring 14.0 ft. 2) No groundwater encountered. 3) PID readings measured with a MiniRAE3000 portable meter equiped with a 10.6 eV lamp. 4) Boring backfilled with cement-bentonite grout 14.0-1.0ft, soil cuttings 1.0-0.0ft. 5) Boring location and elevation from survey by Tetra Tech BAS, 9/16/2019.			
257.7	20									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **TET 19-142E**	Log of Boring B-7 **Sheet 1 of 1**

Date(s) Drilled **8/9/2019**	Logged By **SCM**	Checked By **DML**
Drilling Method **Hollow-Stem Auger (HSA)**	Drill Bit Size/Type **8" Diameter**	Total Depth of Borehole **14.0 ft**
Drill Rig Type **CME 75**	Drilling Contractor **ABC Liovin**	Approximate Surface Elevation **279.4 ft**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140lb Automatic Trip Hammer, 30-inch drop**
Borehole Backfill **Cement bentonite grout, soil cuttings**	Location **Northing: 2283486.6 ft Easting: 6043398.6 ft**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
279.4	0				CL		[FILL] Landfill Cover Soil: Sandy Lean CLAY with Gravel, firm, dark reddish brown (7.5YR 3/4), damp, coarse grained sand, trace fine gravel up to 3/4 inch diameter			
			SK-1							
			R-2	9 6 6				11.6	101.6	
274.4	5						@5.0'- color change to brown (10YR 4/3)			
			R-3	4 4 3				14.4	110.8	
							@7.5'- very stiff, color change to greenish gray (5G 5/1)			
			SPT-4	5 7 13				15.9		
269.4	10						@10.0'- as above			0.2ppm PID - sample, 0.0ppm PID - breathing zone
			SPT-5	4 7 9				17.7		
							@11.5'- trace of burnt wood chips			
			SPT-6	3 4 5	Fill		[FILL] Landfill Refuse: ±60% wood, ±20% glass, ±20% metal fragments in Silty SAND matrix, stiff			0.8ppm PID - sample, 0.0ppm PID - breathing zone
264.4	15						1) Total depth of boring 14.0 ft. 2) No groundwater encountered. 3) PID readings measured with a MiniRAE3000 portable meter equiped with a 10.6 eV lamp. 4) Boring backfilled with cement-bentonite grout 14.0-1.0ft, soil cuttings 1.0-0.0ft. 5) Boring location and elevation from survey by Tetra Tech BAS, 9/16/2019.			
259.4	20									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **TET 19-142E**	Log of Boring B-8 **Sheet 1 of 1**

Date(s) Drilled **8/8/2019**	Logged By **LJM**	Checked By **DML**
Drilling Method **Hollow-Stem Auger (HSA)**	Drill Bit Size/Type **8" Diameter**	Total Depth of Borehole **9.0 ft**
Drill Rig Type **CME 75**	Drilling Contractor **ABC Liovin**	Approximate Surface Elevation **277.0 ft**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140lb Automatic Trip Hammer, 30-inch drop**
Borehole Backfill **Cement bentonite grout, soil cuttings**	Location **Northing: 2283552.6 ft Easting: 6043717.7 ft**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
277	0				CL-ML		[FILL] Landfill Cover Soil: Sandy Lean CLAY with SILT, stiff, dark yellowish brown (10YR 4/6), damp, trace fine gravel			
			R-1	8 8 9				14.8		GRADATION
272	5		SK-2				@5.0'- color change to brown (10YR 4/3)			
			SPT-3	3 4 9				17.3		
					Fill		[FILL] Landfill Refuse: Newspaper in Sandy CLAY matrix, very stiff, olive gray (5Y 5/2), moist			
			R-4	10 17 15						10.2ppm PID - sample, 0.0ppm PID - breathing zone
267	10						1) Total depth of boring 9.0 ft. 2) No groundwater encountered. 3) PID readings measured with a MiniRAE3000 portable meter equiped with a 10.6 eV lamp. 4) Boring backfilled with cement-bentonite grout 9.0-1.0ft, soil cuttings 1.0-0.0ft. 5) Boring location from commercial grade GPS, elevation from site plan.			
262	15									
257	20									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **TET 19-142E**	Log of Boring B-9 **Sheet 1 of 2**

Date(s) Drilled **8/9/2019**	Logged By **SCM**	Checked By **DML**
Drilling Method **Hollow-Stem Auger (HSA)**	Drill Bit Size/Type **8" Diameter**	Total Depth of Borehole **36.5 ft**
Drill Rig Type **CME 75**	Drilling Contractor **ABC Liovin**	Approximate Surface Elevation **281.4 ft**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140lb Automatic Trip Hammer, 30-inch drop**
Borehole Backfill **Cement bentonite grout, soil cuttings**	Location **Northing: 2283437.1 ft Easting: 6043706.6 ft**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
281.4	0				SM		[FILL] Landfill Cover Soil: Silty SAND, yellowish brown (10YR 5/6), damp, medium grained, trace clay			
					Sandstone		[NATIVE] La Habra Formation: Silty SANDSTONE, very stiff, light yellowish brown (10YR 6/4), damp, trace clay			
276.4	5		SK-1							
			SPT-2	6 13 14				16.5		MAX DENSITY, CORR
			SK-3		Claystone		Sandy Lean CLAYSTONE, light brownish gray (2.5YR 6/2), damp, mottled			
			R-4	2 3 8				15.5	109.5	GRADATION, PI, DS
271.4	10				Claystone		Silty CLAYSTONE, hard, olive (5Y 5/4), damp, odor			
			SPT-5	9 15 18				18.7		20.2ppm PID - sample, 0.0ppm PID - breathing zone
			R-6	9 12 36			@12.5'- Silty SANDSTONE bed, dense	19.3	108.8	
266.4	15		SK-8							
			SPT-7	6 11 17			@15.0'- color change to light yellowish brown (10YR 6/4), very stiff, carbonate stringers	17.8		23.4ppm PID - sample, 0.0ppm PID - breathing zone
					Sandstone		Silty SANDSTONE, dense, olive yellow (2.5Y 6/6), damp, fine to medium grained			
			R-9	15 26 30				13.9	98.7	
261.4	20									

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Project: **Vista Grande Park**
Project Location: **La Habra, CA**
Project Number: **TET 19-142E**

Log of Boring B-9
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
261.4	20									1.0ppm PID -
			SPT-10	7 13 18			@20.0'- color change to light yellowish brown (10YR 6/4), fine grained	24.8		sample, 0.0ppm PID - breathing zone
256.4	25		SK-12				25.0'- medium dense, fine to medium grained, trace fine gravel			7.2ppm PID -
			R-11	11 16 30				17.7	101.8	sample, 0.0ppm PID - breathing zone
					Claystone		Sandy Lean CLAYSTONE, very stiff, yellowish brown (10YR 5/6) light brownish gray (2.5Y 6/2), mottled, damp, trace carbonate stringers			
251.4	30									2.1ppm PID -
			SPT-13	7 10 16				19.6		sample, 0.0ppm PID - breathing zone
246.4	35						@35.0'- as above			
			R-14	10 15 26				23.9	99.6	
241.4	40						1) Total depth of boring 36.5 ft. 2) No groundwater encountered. 3) PID readings measured with a MiniRAE3000 portable meter equiped with a 10.6 eV lamp. 4) Boring backfilled with cement-bentonite grout 36.5-1.0ft, soil cuttings 1.0-0.0ft. 5) Boring location and elevation from survey by Tetra Tech BAS, 9/16/2019.			
236.4	45									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **TET 19-142E**	Log of Boring B-10 **Sheet 1 of 1**

Date(s) Drilled **8/9/2019**	Logged By **SCM**	Checked By **DML**
Drilling Method **Hollow-Stem Auger (HSA)**	Drill Bit Size/Type **8" Diameter**	Total Depth of Borehole **6.5 ft**
Drill Rig Type **CME 75**	Drilling Contractor **ABC Liovin**	Approximate Surface Elevation **271.6 ft**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140lb Automatic Trip Hammer, 30-inch drop**
Borehole Backfill **Cement bentonite grout, soil cuttings**	Location **Northing: 2283320.6 ft Easting: 6043377.5 ft**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
271.6	0				SC		[FILL] Landfill Cover Soil: Clayey SAND, loose, greenish gray (5G 5/1), damp @0.5'- 6" diameter asphalt fragments			
			SK-1							R-VALUE,-200, EI
			R-2	5 5 7				21.0	90.1	13.9ppm PID - sample, 0.0ppm PID - breathing zone
266.6	5				Fill		[FILL] Landfill Refuse: ±90% wood, ±10% plastic, and a trace of newspaper, medium dense/ very stiff, damp			
			SPT-3	5 10 10						37.7ppm PID - sample, 0.0ppm PID - breathing zone
261.6	10						1) Total depth of boring 6.5 ft. 2) No groundwater encountered. 3) PID readings measured with a MiniRAE3000 portable meter equiped with a 10.6 eV lamp. 4) Boring backfilled with cement-bentonite grout 6.5-1.0ft, soil cuttings 1.0-0.0ft. 5) Boring location and elevation from survey by Tetra Tech BAS, 9/16/2019.			
256.6	15									
251.6	20									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **TET 19-142E**	Log of Boring B-11 **Sheet 1 of 1**

Date(s) Drilled **8/9/2019**	Logged By **SCM**	Checked By **DML**
Drilling Method **Hollow-Stem Auger (HSA)**	Drill Bit Size/Type **8" Diameter**	Total Depth of Borehole **6.5 ft**
Drill Rig Type **CME 75**	Drilling Contractor **ABC Liovin**	Approximate Surface Elevation **270.4 ft**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140lb Automatic Trip Hammer, 30-inch drop**
Borehole Backfill **Cement bentonite grout, soil cuttings**	Location **Northing: 2283265.9 ft Easting: 6043584.0 ft**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
270.4	0				SM		[FILL] Landfill Cover Soil: Silty SAND, very loose, greenish gray (5G 5/1), damp			
			SK-1							
			R-2	2 2 2				37.1	47.7	-200
					Fill		[FILL] Landfill Refuse: ±50% wood, ±30% asphalt grindings, ±20% paper, very loose/ very soft, damp			
265.4	5									0.0ppm PID - sample/ breathing zone
			SPT-3	2 1 1						
							1) Total depth of boring 6.5 ft. 2) No groundwater encountered. 3) PID readings measured with a MiniRAE3000 portable meter equiped with a 10.6 eV lamp. 4) Boring backfilled with cement-bentonite grout 6.5-1.0ft, soil cuttings 1.0-0.0ft. 5) Boring location and elevation from survey by Tetra Tech BAS, 9/16/2019.			
260.4	10									
255.4	15									
250.4	20									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **TET 19-142E**	Log of Boring B-12 **Sheet 1 of 1**

Date(s) Drilled **8/8/2019**	Logged By **LJM**	Checked By **DML**
Drilling Method **Hollow-Stem Auger (HSA)**	Drill Bit Size/Type **8" Diameter**	Total Depth of Borehole **11.5 ft**
Drill Rig Type **CME 75**	Drilling Contractor **ABC Liovin**	Approximate Surface Elevation **276.8 ft**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, Modified California, SPT**	Hammer Data **140lb Automatic Trip Hammer, 30-inch drop**
Borehole Backfill **Cement bentonite grout, soil cuttings**	Location **Northing: 2283712.0 ft Easting: 6043524.5 ft**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
276.8	0				SM		[FILL] Landfill Cover Soil: Silty SAND, medium dense, yellowish brown (10YR 5/4), damp, fine to coarse grained, rootlets			
			SK-2							
			R-1	8 19 21				9.2	109.1	
271.8	5				CL		Lean CLAY with Sand, very stiff, dark yellow brown (10YR 4/6), damp, moderate plasticity			
			SPT-3	8 9 12				11.6		
			R-4	6 6 8				21.3	100.0	CONSOL
266.8	10		SPT-5	7 9 10	Fill		[FILL] Landfill Refuse: Glass and paper in CLAY matrix, very stiff, black (5Y 2.5/1), moist, odor			14.2ppm PID - sample, 0.0ppm PID - breathing zone
							1) Total depth of boring 11.5 ft. 2) No groundwater encountered. 3) PID readings measured with a MiniRAE3000 portable meter equiped with a 10.6 eV lamp. 4) Boring backfilled with cement-bentonite grout 11.5-1.0ft, soil cuttings 1.0-0.0ft. 5) Boring location and elevation from survey by Tetra Tech BAS, 9/16/2019.			
261.8	15									
256.8	20									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **TET 19-142E**	Log of Boring B-13 **Sheet 1 of 1**

Date(s) Drilled **8/9/2019**	Logged By **SCM**	Checked By **DML**
Drilling Method **Hollow-Stem Auger (HSA)**	Drill Bit Size/Type **8" Diameter**	Total Depth of Borehole **9 ft**
Drill Rig Type **CME 75**	Drilling Contractor **ABC Liovin**	Approximate Surface Elevation **276.8**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, SPT**	Hammer Data **140lb Automatic Trip Hammer, 30-inch drop**
Borehole Backfill **Cement bentonite grout, soil cuttings**	Location **Northing: 2283662.0 ft Easting: 6043668.3 ft**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
276.8	0				CL		[FILL] Landfill Cover Soil: Silty Lean CLAY, stiff, dark yellow brown (10YR 4/4), damp, trace gravel and wood chips at surface			
			SK-1							
			SPT-2	7 7 6			@2.5'- as above, gravel and wood chips absent	14.4		
271.8	5		SPT-3	18 10 6			@5.0'- as above, very stiff	13.1		0.6ppm PID - sample, 0.0ppm PID - breathing zone
			SPT-4	7 5 3	Fill		[FILL] Landfill Refuse: Interbedded refuse (±80% wood, ±15% rubber, ±5% asphalt/brick clasts) and sand matrix, loose, light brownish gray (2.5Y 6/2), damp			10.9ppm PID - sample, 0.0ppm PID - breathing zone
266.8	10						1) Total depth of boring 9.0 ft. 2) No groundwater encountered. 3) PID readings measured with a MiniRAE3000 portable meter equiped with a 10.6 eV lamp. 4) Boring backfilled with cement-bentonite grout 9.0-1.0ft, soil cuttings 1.0-0.0ft. 5) Boring location and elevation from survey by Tetra Tech BAS, 9/16/2019.			
261.8	15									
256.8	20									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **BAS 19-142E**	Log of Boring B-101 **Sheet 1 of 1**

Date(s) Drilled **2/19/2020**	Logged By **SCM**	Checked By **DML**
Drilling Method **Hand Auger**	Drill Bit Size/Type **4" Diameter**	Total Depth of Borehole **4.0 feet**
Drill Rig Type **N/A**	Drilling Contractor **Tetra Tech**	Approximate Surface Elevation **279 feet**
Groundwater Level and Date Measured **Not Encoutnered**	Sampling Method(s) **Bulk, 2.5" Ring**	Hammer Data **Hand Driven**
Borehole Backfill **Granular Bentonite**	Location **Northing 2283460, Easting 6043430**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
279	0				CL		[FILL] Landfill cover soil: Sandy lean CLAY with Gravel, dark yellowish brown (10YR 4/6), moist, fine to coarse grained			
278	1									
277	2									
276	3		SK-1 R-2				@3' - color change to dark brown (10YR 3/3), gravel absent	21.2	106.7	R-2 GRAD K = 7.67 x 10^-9 cm/sec
275	4						Notes: - Total depth 4.0 feet. - No groundwater encountered. - No caving or sloughing. - Location from commercial grade GPS survey. - Backfilled with hydrated bentonite granules to 0.5', soil cuttings from 0.5' to surface.			
274	5									
273	6									
272	7									
271	8									
270	9									
269	10									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **BAS 19-142E**	Log of Boring B-102 **Sheet 1 of 1**

Date(s) Drilled **2/19/2020**	Logged By **SCM**	Checked By **DML**
Drilling Method **Hand Auger**	Drill Bit Size/Type **4" Diameter**	Total Depth of Borehole **4.0 feet**
Drill Rig Type **N/A**	Drilling Contractor **Tetra Tech**	Approximate Surface Elevation **278 feet**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, 2.5" Ring**	Hammer Data **Hand Driven**
Borehole Backfill **Granular Bentonite**	Location **Northing 2283590, Easting 6043705**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
278	0				SC		[FILL] Landfill cover soil: Clayey SAND, dark brown, (10YR 3/3), moist, coarse grained, trace of gravel and rootlets			
277	1									
276	2						@ 2.5' - damp			
275	3		SK-1 R-2							SK-1 MAX K = Remolded R-2 GRAD K = 3.83 x 10^5 cm/sec
274	4							6.4	112.6	
273	5						Notes: - Total depth 4.0 feet. - No groundwater encountered. - No caving or sloughing. - Location from commercial grade GPS survey. - Backfilled with hydrated bentonite granules to 0.5', soil cuttings from 0.5' to surface.			
272	6									
271	7									
270	8									
269	9									
268	10									

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **BAS 19-142E**	Log of Boring B-103 **Sheet 1 of 1**

Date(s) Drilled **2/19/2020**	Logged By **SCM**	Checked By **DML**
Drilling Method **Hand Auger**	Drill Bit Size/Type **4" Diameter**	Total Depth of Borehole **4.5 feet**
Drill Rig Type **N/A**	Drilling Contractor **Tetra Tech**	Approximate Surface Elevation **275 feet**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, 2.5" Ring**	Hammer Data **Hand Driven**
Borehole Backfill **Granular Bentonite**	Location **Northing 2283680, Easting 6043515**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
275	0				CL		[FILL] Landfill cover soil: Sandy lean CLAY with Gravel, moist, dark brown (10YR 3/3), fine to coarse grained sand, trace brick fragments			
274	1									
273	2									
272	3									
271	4		SK-1 R-2				@4.25' Siltstone clast	13.0	98.3	R-2 GRAD K = 3.58 x 10^-5 cm/sec Part siltstone
270	5						Notes: -Total depth 4.5 feet - No groundwater encountered - No caving or sloughing - Location from commercial grade GPS survey - Backfilled with hydrated bentonite granules to 0.5', soil cuttings to from 0.5' to surface			
269	6									
268	7									
267	8									
266	9									
265	10									

L:\02 - PROJECTS\2019 Projects\BAS 19-142E (197-2019-0050 Task A2 GEO) Vista Grande Park - La Habra\03 Field & Lab\ 2020-02-19 Hand Augering\Hand Augering-2020.bg4l10 with 2 lab TtBAS LOGO.tpl

Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **BAS 19-142E**	Log of Boring B-104 **Sheet 1 of 1**

Date(s) Drilled **2/19/2020**	Logged By **SCM**	Checked By **DML**
Drilling Method **Hand Auger**	Drill Bit Size/Type **4" Diameter**	Total Depth of Borehole **4.5 feet**
Drill Rig Type **N/A**	Drilling Contractor **Tetra Tech**	Approximate Surface Elevation **272 feet**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, 2.5" Ring**	Hammer Data **Hand Driven**
Borehole Backfill **Granular Bentonite**	Location **Northing 2283835, Easting 6043500**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
272	0				CL		[FILL] Landfill cover soil: Sandy lean CLAY, dark brown (10YR 3/3), damp, medium to coarse grained, trace brick and concrete fragments			
271	1									
270	2									
269	3		SK-1				@3' - ~2" to 3" concrete clasts			
268	4		R-2				Notes: -Total depth 4.0 feet. - No groundwater encountered. - No caving or sloughing. - Location from commercial grade GPS survey. - Backfilled with hydrated bentonite granules to 0.5', soil cuttings from 0.5' to surface.	9.3	104.8	R-2 GRAD K = 1.61 x 10^-5 cm/sec
267	5									
266	6									
265	7									
264	8									
263	9									
262	10									

TETRA TECH

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Project: **Vista Grande Park** Project Location: **La Habra, CA** Project Number: **BAS 19-142E**	Log of Boring B-105 **Sheet 1 of 1**

Date(s) Drilled **2/19/2020**	Logged By **SCM**	Checked By **DML**
Drilling Method **Hand Auger**	Drill Bit Size/Type **4" Diameter**	Total Depth of Borehole **4.0 feet**
Drill Rig Type **N/A**	Drilling Contractor **Tetra Tech**	Approximate Surface Elevation **276 feet**
Groundwater Level and Date Measured **Not Encountered**	Sampling Method(s) **Bulk, 2.5" Ring**	Hammer Data **Hand Driven**
Borehole Backfill **Granular Bentonite**	Location **Northing 2283835, Easting 6043770**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
276	0				CL		[FILL] Landfill cover soil: Sandy lean CLAY, dark brown (10YR 3.3), moist, medium to coarse grained, trace of fine gravel			
275	1									
274	2									
273	3		SK-1							SK-1 MAX K = Remolded
272	4		R-2					12.4	102.5	R-2 GRAD K = 7.13 x 10^-6 cm/sec
271	5						Notes: -Total depth 4.0 feet. - No groundwater encountered. - No caving or sloughing. - Location from commercial grade GPS survey. - Backfilled with hydrated bentonite granules to 0.5', soil cuttings from 0.5' to surface.			
270	6									
269	7									
268	8									
267	9									
266	10									

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Appendix A-2

Geotechnical Professionals, Inc.

- **Logs of Exploratory Borings**
- **CPT Soundings**

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FOOT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS	ELEVATION (FEET)
					This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	
			B	0	Fill: **SANDY CLAY (CL)** brown, moist, hard, w/ lenses of silty sand, trace brick and gravel	275
11.1	112	23	D			
14.6	112	35	D	5		
8.1	112	33	D		**SANDY SILT (ML)** brown to dark brown, slightly moist, hard	
14.6	105	30	D		**CLAY (CL)** dark grey, moist, hard	270
15.5	107	18	D	10	**SILTY CLAY (CL)**grey, moist, stiff	
16.0	103	21	D		**LANDFILL:** @ 12 feet with layered sandy silt and silty clay	
					@ 13 feet with cemented concrete debris	265
				15	@ 15 feet 50% soil, 50% debris composed of wood fragments, hydrocarbons, cemented material	
						260
		10	S	20	@ 20 feet 60% organics, 30% soil, 10% debris composed of scrap metal, paper, strong odor, dark grey / black, wet, stiff	
					@ 23-25 feet 80% organics, 10% soil, 10% debris composed of turquoise rubber, metal, wood fragments, strong odor	255
				25		
						250
		13	S	30	@ 30 feet 90% organics, 10% soil, black, wet, stiff, strong odor, brick debris and wood	
						245
				35		
						240

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED: 5-4-16
EQUIPMENT USED: 8 " Hollow Stem Auger
GROUNDWATER LEVEL (ft): 47

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PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF BORING NO. B-1

FIGURE B-1

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FOOT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	ELEVATION (FEET)
		9	S	40	@ 40 feet 90% organics, 10% debris composed of wood, glass, metal, black, wet, strong odor, stiff @ 41 feet highly layered sands, silts, clays, black/brown/red/grey	235
				45		230
24.7		14	S	50	Natural: **CLAY (CL)** brown with white, very moist, stiff	225
19.8	107	28	D	55	@ 55 feet very stiff	220
21.6	104	24	D	60		
					Total Depth 61 feet	

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED: 5-4-16
EQUIPMENT USED: 8 " Hollow Stem Auger
GROUNDWATER LEVEL (ft): 47

GPI

PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF BORING NO. B-1

FIGURE B-1

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FOOT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS	ELEVATION (FEET)
				0	This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	
					Fill: **SANDY CLAY (CL)** brown, moist, hard	
10.6	104	33	D			275
10.9	91	22	D	5	@ 4 feet white nodules, very moist	
11.3	92	28	D			
					SANDY CLAY (CL) brown with red streaks, slightly moist, hard	270
12.0	111	36	D		@ 8 feet white streaks, dry, trace brick	
15.4	107	32	D	10	@ 10 feet possible perched water	
20.7	95	17	D		@ 12 feet brown, very moist, very stiff	265
17.2					**LANDFILL:** 80% organics / debris, 20% soil, black, wet, strong odor, with large pieces of rubber	
				15	@ 15 feet 80% organics, 10% debris, 10% soil, dark grey/black, with paper and wood fragments, metal wire, strong odor, wet	260
		5	S	20	@ 20 feet with brick and wood fragments, firm, trace glass	
						255
				25	@ 25 feet 70% wood, 20% debris, 10% soil black, wet, with wood fragments, rubber and foam, paper, metal	
						250
		17	S	30	@ 30 feet predominantly wood, foam, black, moist to very moist, very stiff	
						245
				35		
						240
					@ 39 feet 50% foam rubber, 40% organics, 10% soil	

SAMPLE TYPES
- [C] Rock Core
- [S] Standard Split Spoon
- [D] Drive Sample
- [B] Bulk Sample
- [T] Tube Sample

DATE DRILLED: 5-4-16
EQUIPMENT USED: 8 " Hollow Stem Auger
GROUNDWATER LEVEL (ft): Not Encountered

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PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF BORING NO. B-2

FIGURE B-2

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FOOT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	ELEVATION (FEET)
		12	S	40	@ 40 feet 30% foam rubber, black, wet, stiff, with wood fragments	235
				45		230
18.9		13	S	50	Natural: **CLAY (CL)** brown, very moist, stiff, trace brick	225
18.8		19	S	55	@ 55 feet brown, very stiff, trace brick	220
21.8	103	36	D	60	@ 60 feet hard	
					Total Depth 61 feet	

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED: 5-4-16

EQUIPMENT USED: 8 " Hollow Stem Auger

GROUNDWATER LEVEL (ft): Not Encountered

GPI

PROJECT NO.: 2724.I

VISTA GRANDE PARK

LOG OF BORING NO. B-2

FIGURE B-2

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FOOT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS	ELEVATION (FEET)
				0	This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	
					Fill: **SANDY CLAY (CL)** brown, moist, hard, with brick	270
12.7	111	23	D			
13.6						
25.0	89	17	D	5	@ 4 feet very moist, stiff	
15.9	84	15	D			265
					SANDY SILT (ML) grey, very moist, stiff, slight hydrocarbon odor	
18.0	92	10	D		**SANDY CLAY (CL)** dark brown, very moist, very stiff, with wood	
23.0	96	15	D	10	@ 10 feet grey	260
21.3	91	70/8"	D		@ 12 feet concrete chunk	
18.9	83	60	D	15	@ 14 feet grey, concrete chunk	
9.1	110	16	D		@16 feet slightly moist, with asphalt, trace concrete, small piece of metal wire	255
3.2		48	S	20	@ 20 feet dry, hard	250
					LANDFILL: 50% debris, black organic, with rubber, metal, wood, glass	
		18	D	25		245
		22	S	30	@ 30 feet 80% debris, hydrocarbon odor	240
				35		235

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED: 5-5-16
EQUIPMENT USED: 8 " Hollow Stem Auger
GROUNDWATER LEVEL (ft): 46

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PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF BORING NO. B-3

FIGURE B-3

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FOOT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	ELEVATION (FEET)
		54/11"	S	40	@ 40 feet 25% debris with black organics	230
					Natural: **CLAY (CL)** dark brown, wet, hard	
34.7	86	19	D	45	@ 45 feet stiff	225
25.4		15	D	50	@ 50 feet small piece of brick	220
24.2		26	D	55	@ 55 feet very stiff, very moist	215
23.2	93	38	D	60		210
					Total Depth 61 feet	

SAMPLE TYPES
- [C] Rock Core
- [S] Standard Split Spoon
- [D] Drive Sample
- [B] Bulk Sample
- [T] Tube Sample

DATE DRILLED: 5-5-16

EQUIPMENT USED: 8 " Hollow Stem Auger

GROUNDWATER LEVEL (ft): 46

GPI

PROJECT NO.: 2724.I

VISTA GRANDE PARK

LOG OF BORING NO. B-3

FIGURE B-3

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FOOT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS	ELEVATION (FEET)
				0	This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	
10.5	112	27	D		Fill: **SANDY CLAY (CL)** red brown, slightly moist, very stiff	270
11.3	97	31	D	5		
13.7	102	17	D		@ 6 feet moist, stiff	265
57.8	64	17	D		**LANDFILL:** 80% debris, black, organic hydrocarbon smell, glass, wood, paper, rubber	
		14	S	10		260
				15		255
		9	S	20		250
				25	@ 27 feet 80% wood	245
		62/11"	S	30	@ 30 feet 90% newspaper	240
				35		235

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED: 5-5-16
EQUIPMENT USED: 8 " Hollow Stem Auger
GROUNDWATER LEVEL (ft): 46

GPI

PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF BORING NO. B-4

FIGURE B-4

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FOOT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	ELEVATION (FEET)
		11	S	40	Natural: **CLAY (CL)** dark brown, wet, stiff, hydrocarbon odor	230
25.2		26	D	45		225
30.2	91	13	D	50	**SANDY CLAY (CL)** light brown, wet, stiff	220
26.4	94	21	D	55	**CLAYEY SAND (SC)** light brown, wet, medium dense	
					CLAY (CL) grey, wet, stiff	215
32.5	82	18	D	60		
					Total Depth 61 feet	

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED: 5-5-16
EQUIPMENT USED: 8 " Hollow Stem Auger
GROUNDWATER LEVEL (ft): 46

GPI

PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF BORING NO. B-4

FIGURE B-4

APPENDIX A

CONE PENETRATION TESTS

The subsurface conditions were investigated by performing ten Cone Penetration Tests (CPT's) at the site. The soundings were advanced to depths ranging from 30 to 60 feet below existing grades. The locations of the CPT's are shown on the Site Plan, Figure 2.

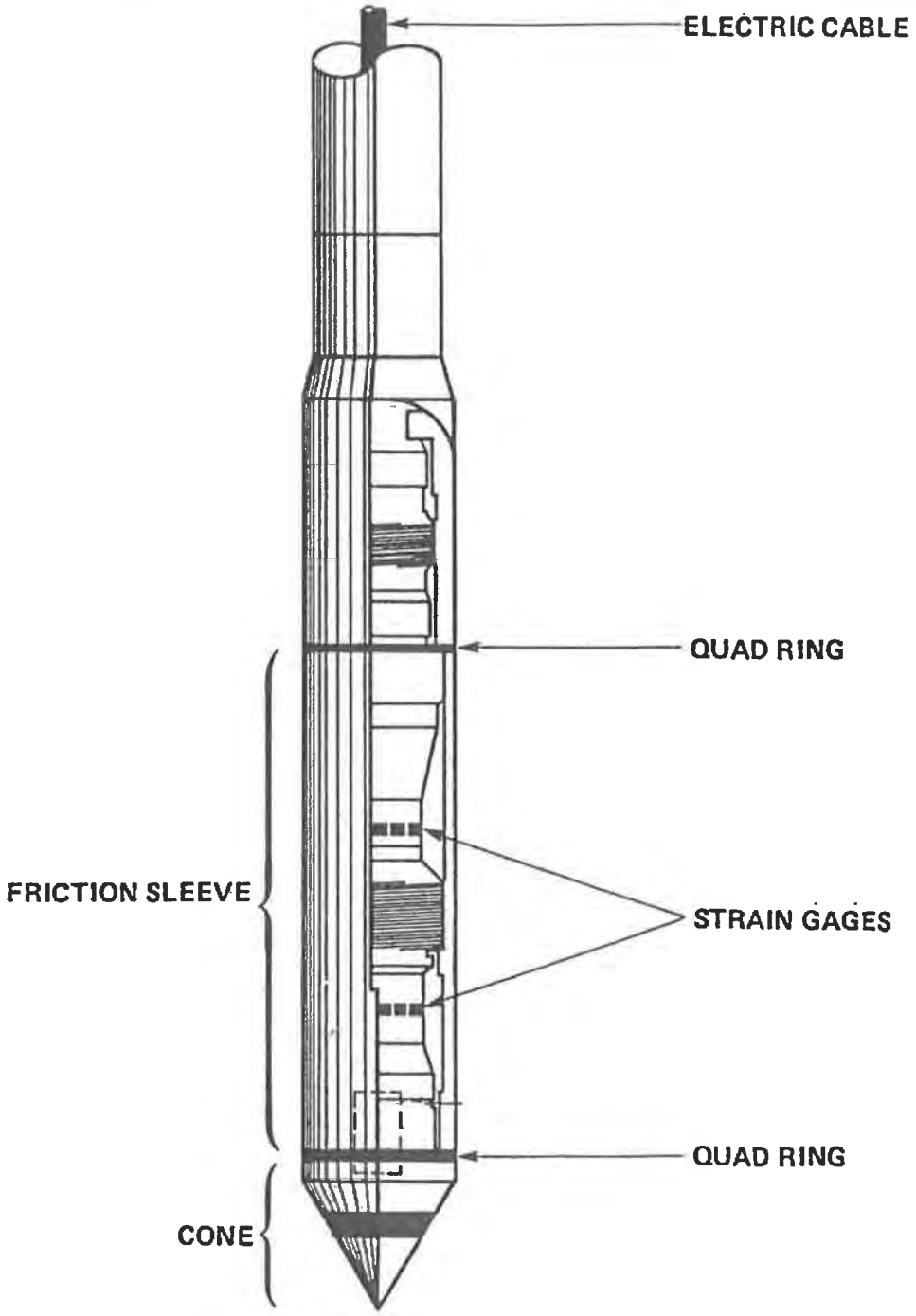
The Cone Penetration Test consists of pushing a cone-tipped probe into the soil deposit while simultaneously recording the cone tip resistance and side friction resistance of the soil to penetration (refer to Figure A-1). The CPT described in this report was conducted in general accordance with ASTM specifications (ASTM D 5778) using an electric cone penetrometer.

The CPT equipment consists of a cone assembly mounted at the end of a series of hollow sounding rods. A set of hydraulic rams is used to push the cone and rods into the soil while a continuous record of cone and friction resistance versus depth is obtained in both analog and digital form at the ground surface. A specially designed truck is used to transport and house the test equipment and to provide a 30-ton reaction to the thrust of the hydraulic rams.

Standard data obtained during a CPT consists of continuous stratigraphic information with close vertical resolution. Stratigraphic interpretation is based on relationships between cone tip resistance and friction resistance. The calculated friction ratio (CPT friction sleeve resistance divided by cone tip resistance) is used as an indicator of soil type. Granular soils typically have low friction ratios and high cone resistance, while cohesive or organic soils have high friction ratios and low cone resistance. These stratigraphic material categories form the basis for all subsequent calculations which utilize the CPT data.

Computer plots of the reduced CPT data acquired for this investigation are presented in Figures A-2 to A-11 of this appendix. The field-testing and computer processing was performed by Kehoe Testing and Engineering under subcontract to Geotechnical Professionals Inc. (GPI). The interpreted soil descriptions were prepared by GPI.

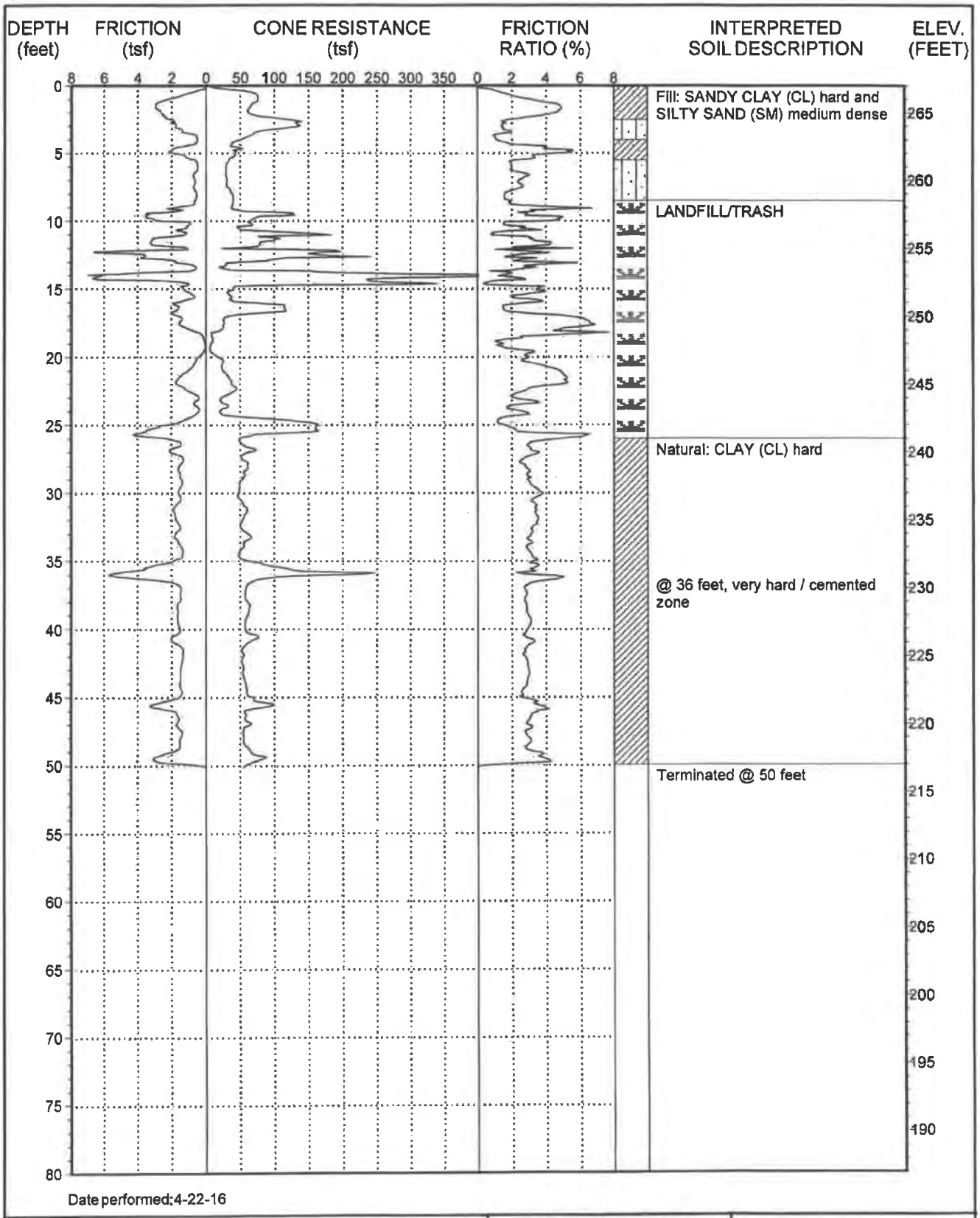
The CPT locations were laid out in the field by measuring from existing site features. CPT's were performed on graded soil surface. Ground surface elevations at the CPT locations were estimated from topographic map prepared by Aero Tech Surveys, and should be considered approximate.



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CONE PENETROMETER

FIGURE A-1



Date performed:4-22-16

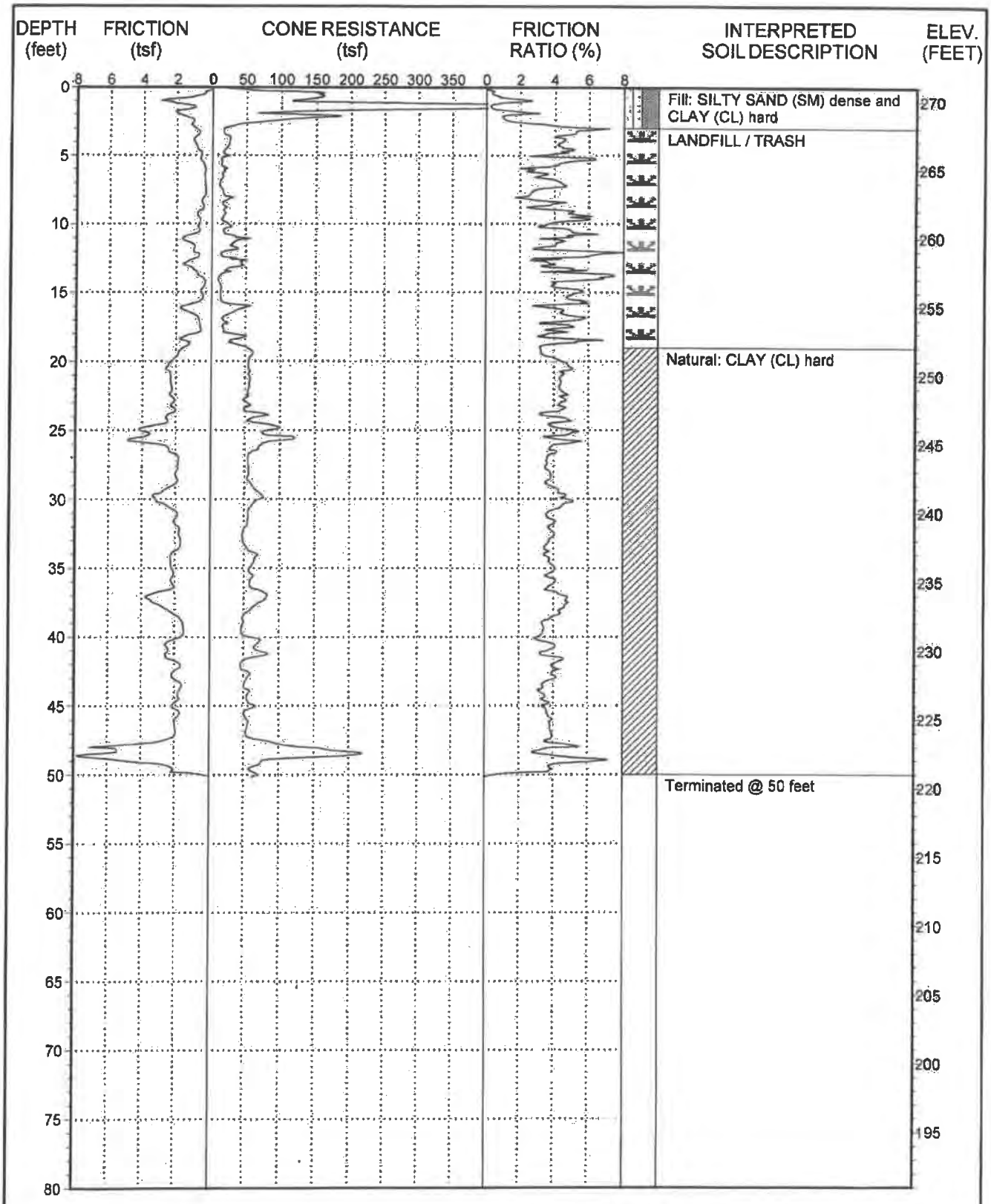
This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

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PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF CPT NO. C-1

FIGURE A-2



Date performed:4-22-16

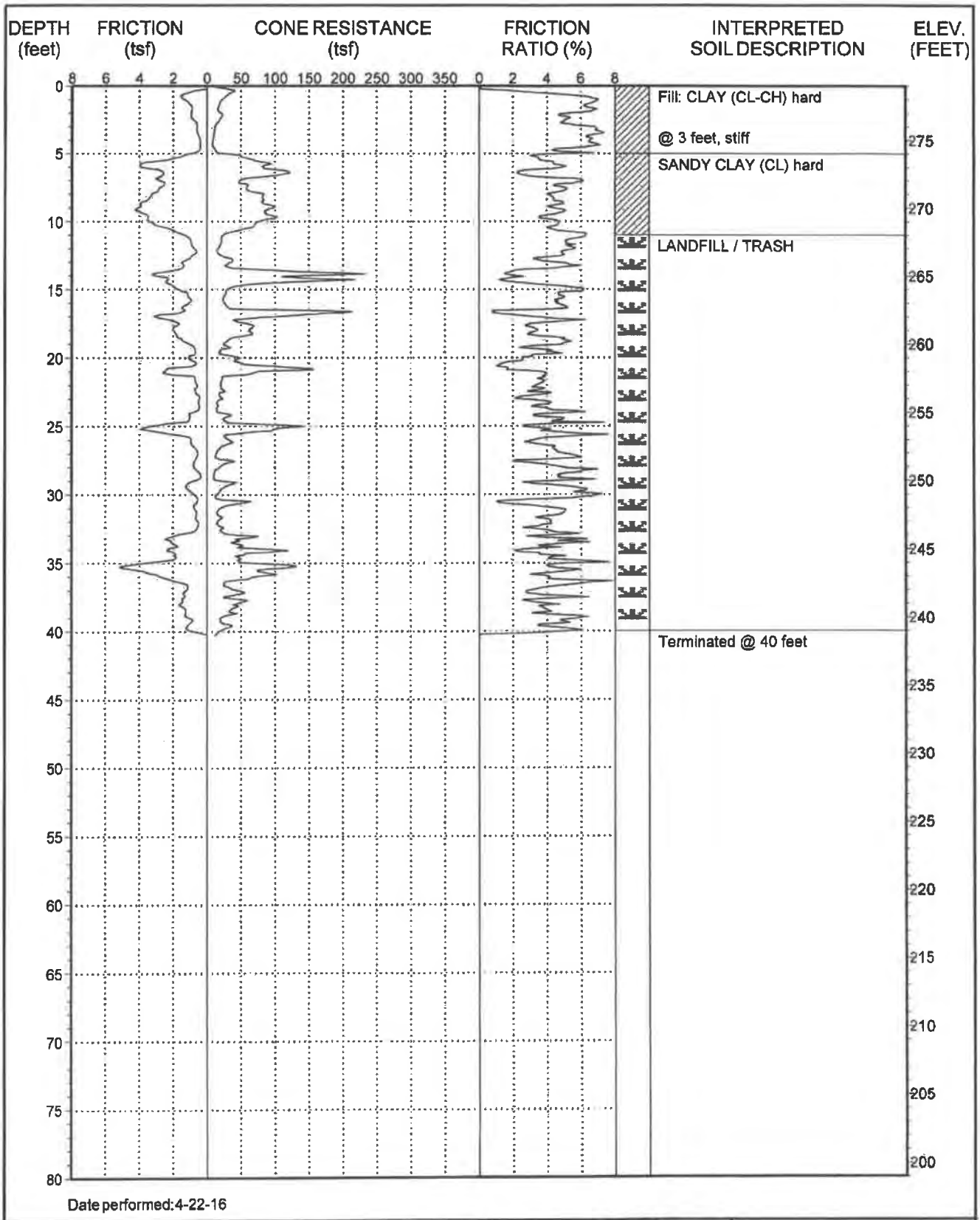
This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

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PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF CPT NO. C-2

FIGURE A-3



Date performed:4-22-16

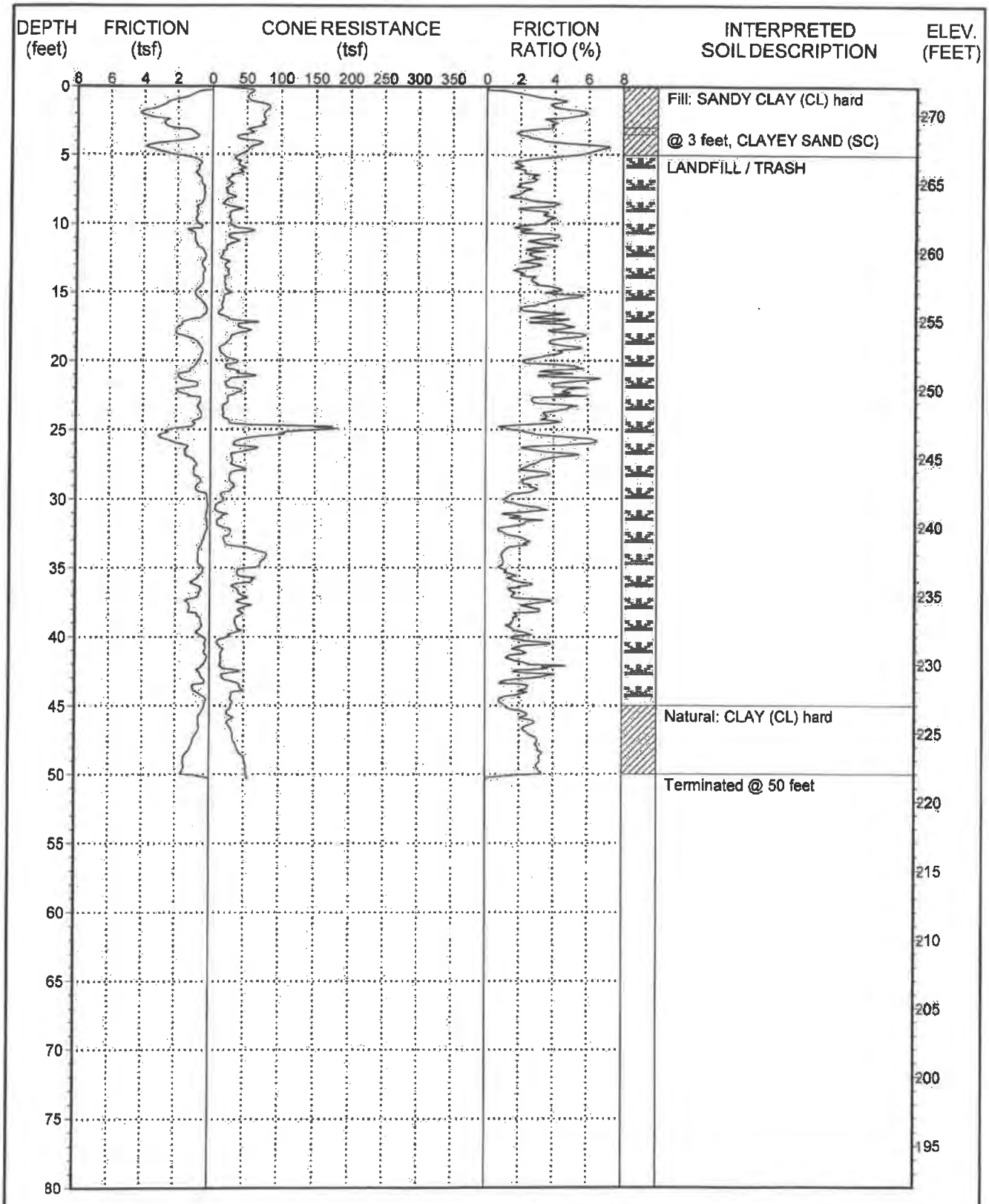
This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

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PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF CPT NO. C-3

FIGURE A-4



Date performed:4-22-16

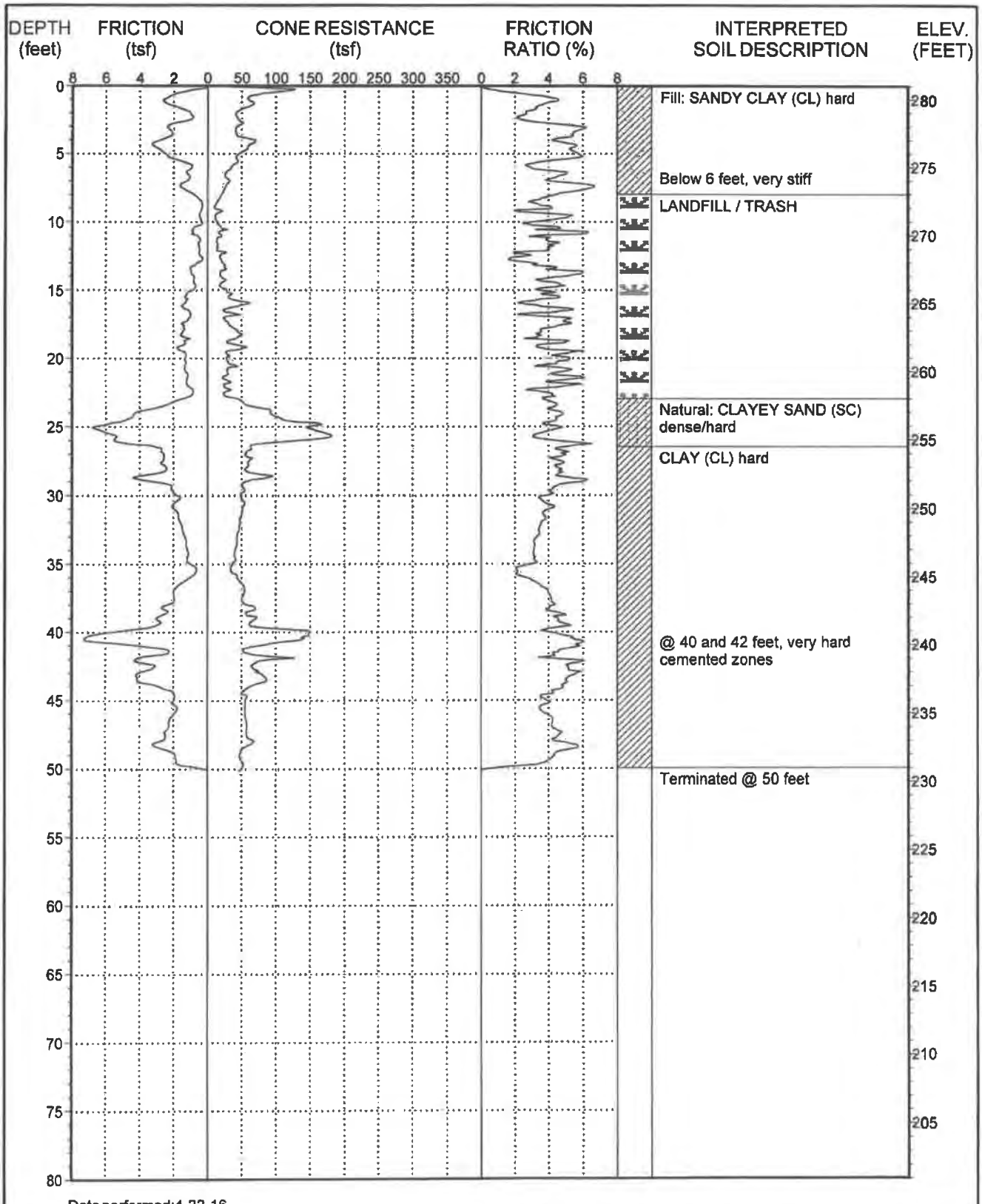
This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

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LOG OF CPT NO. C-4

FIGURE A-5



Date performed:4-22-16

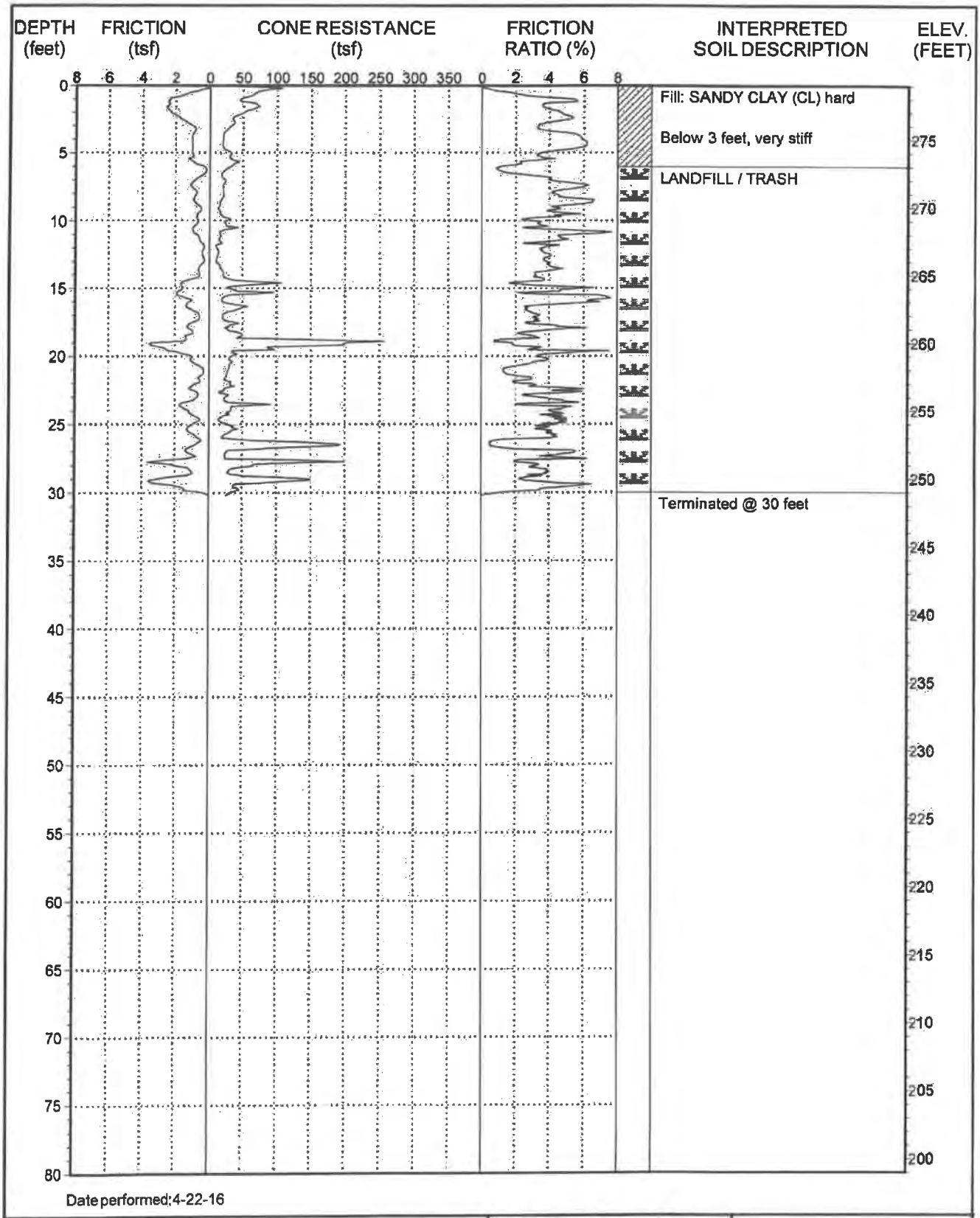
This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

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PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF CPT NO. C-5

FIGURE A-6



Date performed: 4-22-16

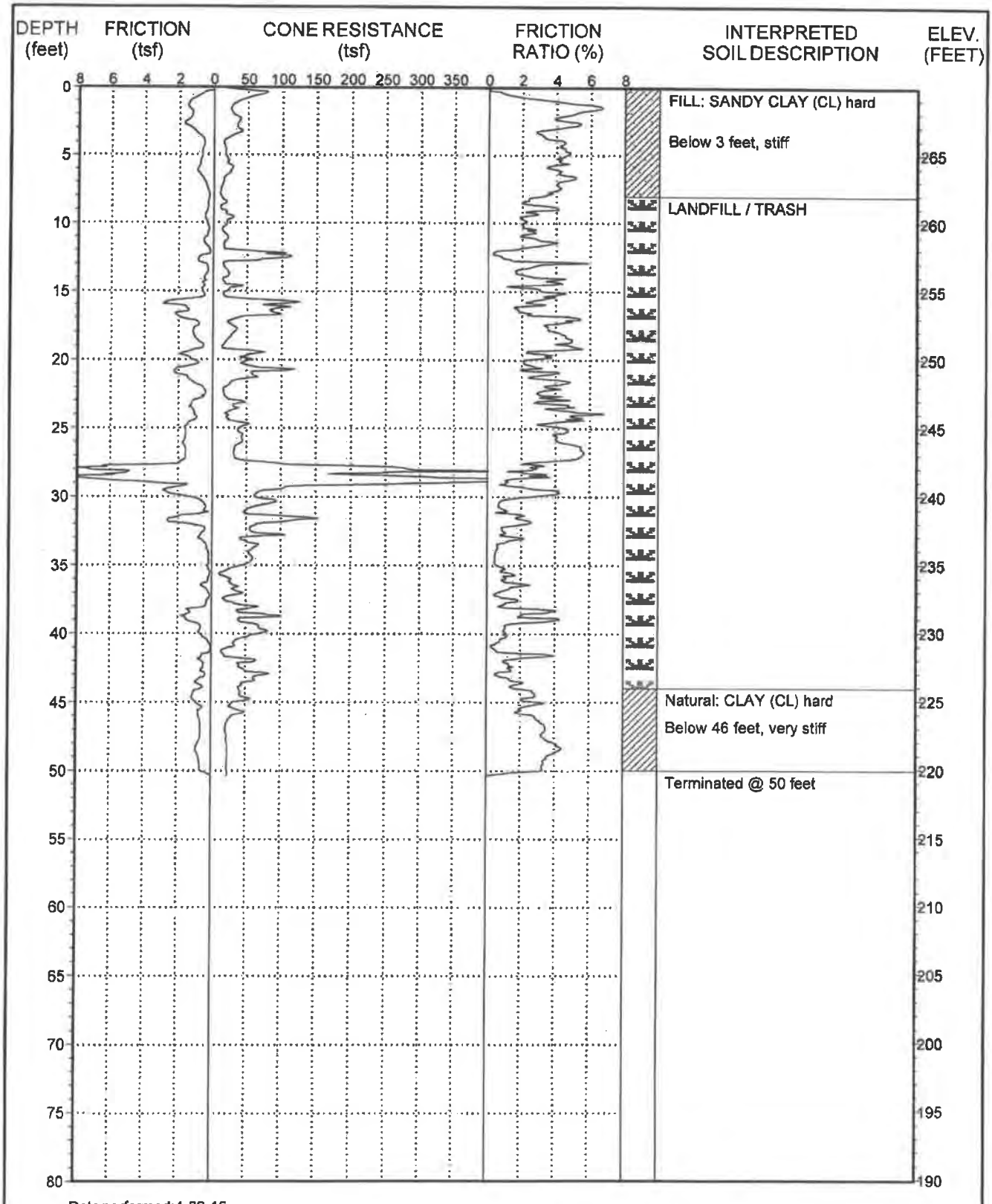
This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

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PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF CPT NO. C-6

FIGURE A-7



Date performed:4-22-16

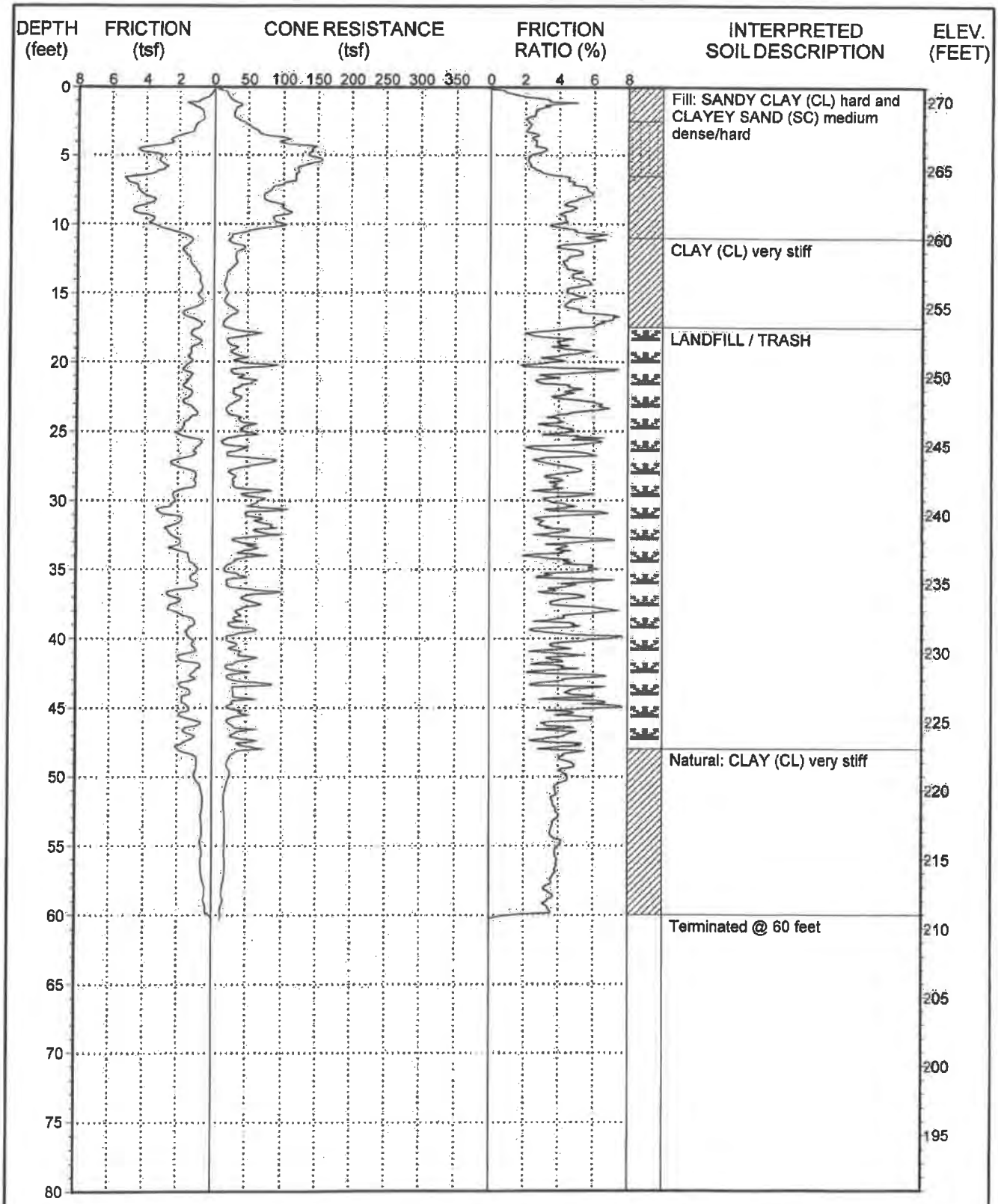
This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

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PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF CPT NO. C-7

FIGURE A-8



Date performed:4-22-16

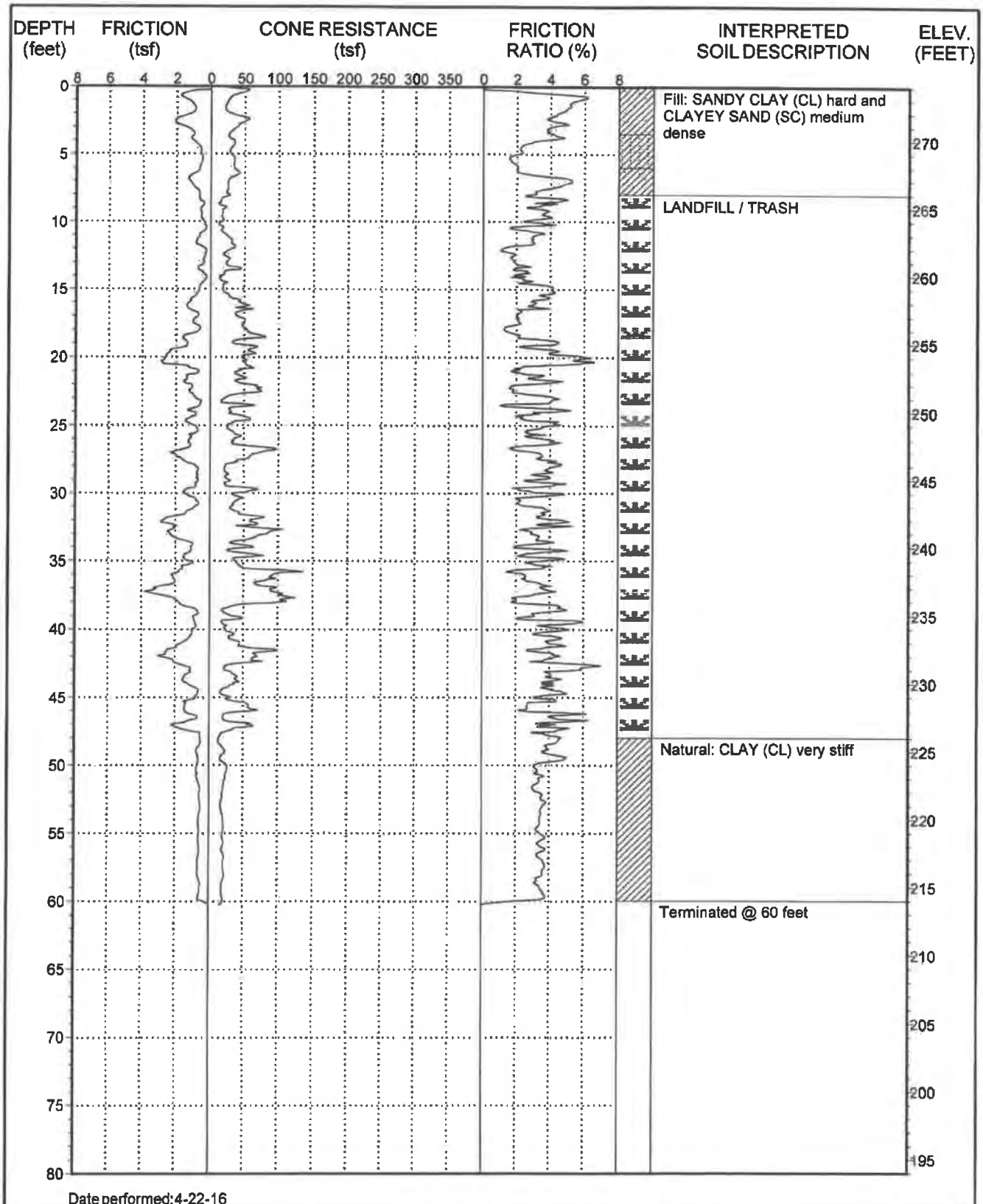
This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

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PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF CPT NO. C-8

FIGURE A-9



Date performed: 4-22-16

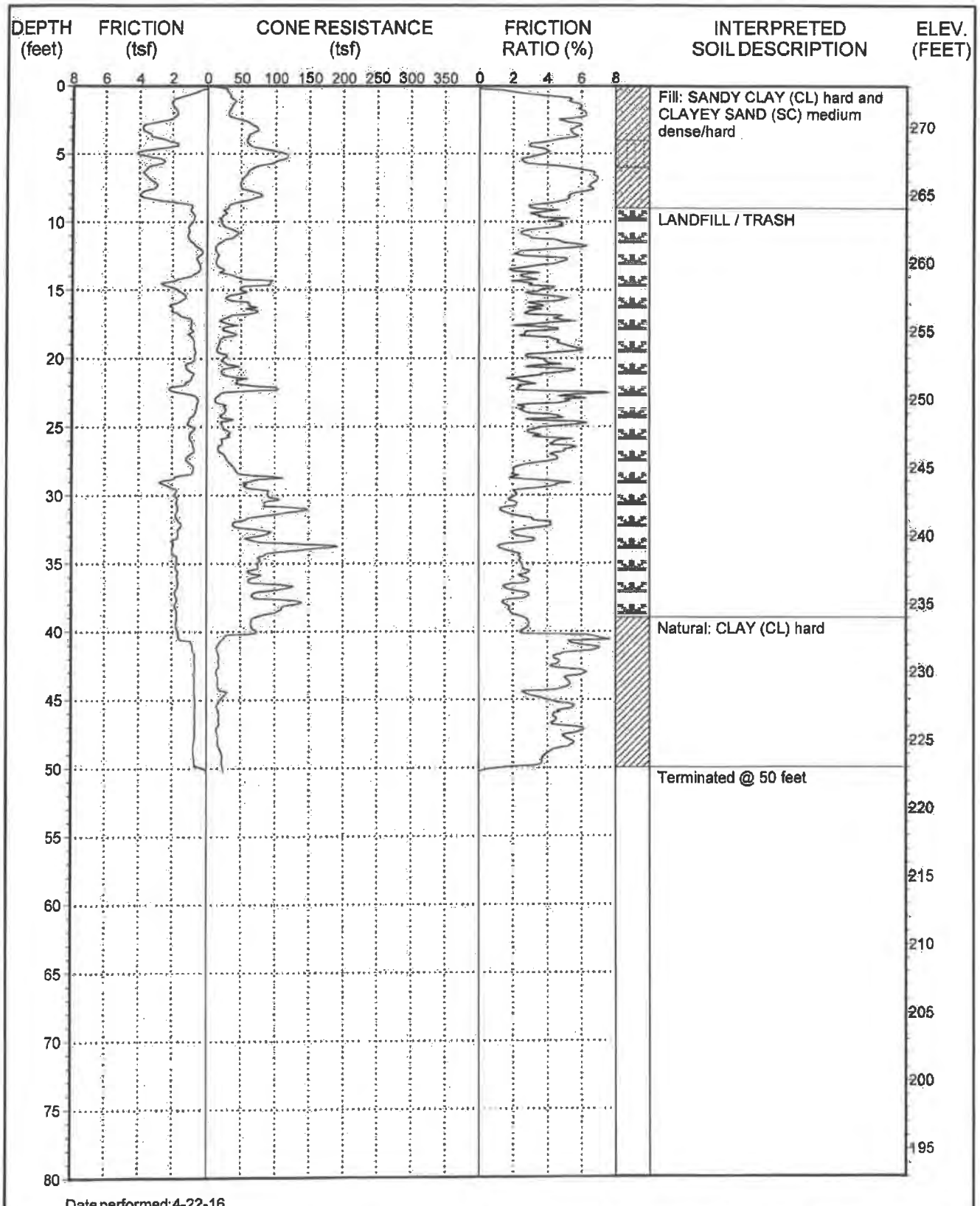
This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

GPI

PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF CPT NO. C-9

FIGURE A-10



Date performed: 4-22-16

This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

GPI

PROJECT NO.: 2724.I
VISTA GRANDE PARK

LOG OF CPT NO. C-10

FIGURE A-11

Appendix B

Results of Laboratory Testing

Appendix B-1

Tetra Tech BAS GeoScience

Results of Geotechnical Laboratory Testing

Appendix B-1
Results of Geotechnical Laboratory Testing

Classification
Soils were visually and texturally classified in accordance with the Unified Soil Classification System. Soil classifications are indicated on the log of the exploratory boring in Appendix A-1.

In-Place Moisture and Dry Density Tests
The moisture content and dry density of relatively undisturbed samples, and moisture content of selected disturbed samples obtained from the exploratory boreholes were evaluated in general accordance with the latest version of ASTM Test Designations D2216 and D2937. The test results are presented on the log of the exploratory borings in Appendix A-1.

Maximum Dry Density and Optimum Moisture Relationship

The maximum dry density and optimum moisture content was determined for 3 bulk soils samples in general accordance with ASTM D1557. The results of the analysis is presented at the back of Appendix B-1.

Particle Size Analysis
An evaluation of the particle size analysis for 10 selected soil samples was performed in general accordance with ASTM D6913 and D7928. The results of the analyses are presented at the back of Appendix B-1.

Percent Finer Than No. 200 Sieve
An evaluation of the percent fine than the No. 200 sieve, i.e., silt and clay fraction, for 2 selected soil samples was performed in general accordance with ASTM D1140. The results of the analyses are presented at the back of Appendix B-1.

Direct Shear Tests
Strength characteristics of the subsurface soils were determined by direct shear tests performed on 2 relatively undisturbed samples. The samples were tested under three different normal loads, inundated to represent potentially adverse field conditions, and sheared at a constant strain rate of 0.025 inches per minute (Section 7.3 of ASTM D3080). Shearing of the specimens was continued until the shear stress became essentially constant or until a deformation of approximately 10 percent of the original diameter had been reached. The results of 3-point direct shear tests are presented at the back of Appendix B-1.

Consolidation Tests
Consolidation tests were performed on 2 relatively undisturbed soil samples in general accordance with the latest version of ASTM D2435. The samples were inundated at the approximate overburden loads during testing to represent adverse field conditions. The percent consolidation for each load cycle was recorded as a ratio of the amount of vertical compression to the original height of the sample. Load versus deformation curves are presented at the back of Appendix B-1.

Atterberg Limits Tests
Liquid Limit, Plastic Limit, and Plasticity Index of selected and representative on-site materials were performed in general accordance with ASTM D4318. The results of this test are presented are presented at the back of Appendix B-1.

Permeability Tests
Flexible wall hydraulic conductivity tests were conducted on a total of 7 soil samples in general accordance with ASTM D5084, Method A. Tests were performed on five relatively undisturbed ring samples, and two tests were performed on samples remolded to approximately 90 percent of the maximum dry density and at moisture contents above the optimum moisture. Test results are presented in at the back of Appendix B-1.

Expansion Index Tests
The Expansion Indices of 1 representative near-surface soil sample was evaluated in general accordance with ASTM D4829. The results of this test are presented at the back of Appendix B-1.

Minimum Electrical Resitivity and Water Soluble Sulfate Content
The minimum electrical resistivity, pH, soluble sulfate content, and chloride content of 1 selected soil sample was evaluated in general accordance with the latest version of California Test Methods 643, 417, and 422, respectively. The result of this test is presented in at the back of Appendix B-1.

Resistance Value
A Resistance (R-value) test was performed on a representative subgrade soil sample from a proposed paving area in general accordance with ASTM D2844. The result of this test is presented in at the back of Appendix B-1.

Sample Disposition
The remaining soil samples are stored in our laboratory for future reference and additional testing, if requested. Unless notified to the contrary and alternative arrangements made for a longer storage time, all samples will be disposed of 90 days after the date of this report.

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MOISTURE AND DENSITY TEST RESULTS

Client: Tetra Tech
Project Name: Vista Grande Park
Project No.: 197-2019-0050 A2 GEO

AP Lab No.: 20-0239
Date: 02/24/20

Boring No.	Sample No.	Sample Depth (ft.)	Moisture Content (%)	Dry Density (pcf)
B-101	R-2	3.5-4.0	21.2	106.7
B-102	R-2	3.5-4.0	6.4	112.6
B-103	R-2	4.0-4.5	13.0	98.3
B-104	R-2	3.5-4.0	9.3	104.8
B-105	R-2	3.5-4.0	12.4	102.5

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COMPACTION TEST

Client: Tetra Tech
Project Name: Vista Grande Park
Project No. : BAS 19-142E
Boring No.: B-9
Sample No.: SK-1
Visual Sample Description: Clayey Sand

AP Number: 19-0910
Tested By: ST — Date: 09/11/19
Calculated By: NR — Date: 09/12/19
Checked By: AP — Date: 09/12/19
Depth(ft.): 0-5

Compaction Method: [X] ASTM D1557 [ ] ASTM D698
Preparation Method: [ ] Moist [X] Dry

METHOD: A
MOLD VOLUME (CU.FT): 0.0333

Wt. Comp. Soil + Mold (gm.)	3823	3968	3959	3886		
Wt. of Mold (gm.)	1861	1861	1861	1861		
Net Wt. of Soil (gm.)	1962	2107	2098	2025		
Container No.						
Wt. of Container (gm.)	142.47	150.56	149.89	155.06		
Wet Wt. of Soil + Cont. (gm.)	524.18	655.09	651.60	737.71		
Dry Wt. of Soil + Cont. (gm.)	499.30	612.99	598.49	666.45		
Moisture Content (%)	6.97	9.10	11.84	13.93		
Wet Density (pcf)	129.76	139.35	138.76	133.93		
Dry Density (pcf)	121.30	127.72	124.07	117.55		

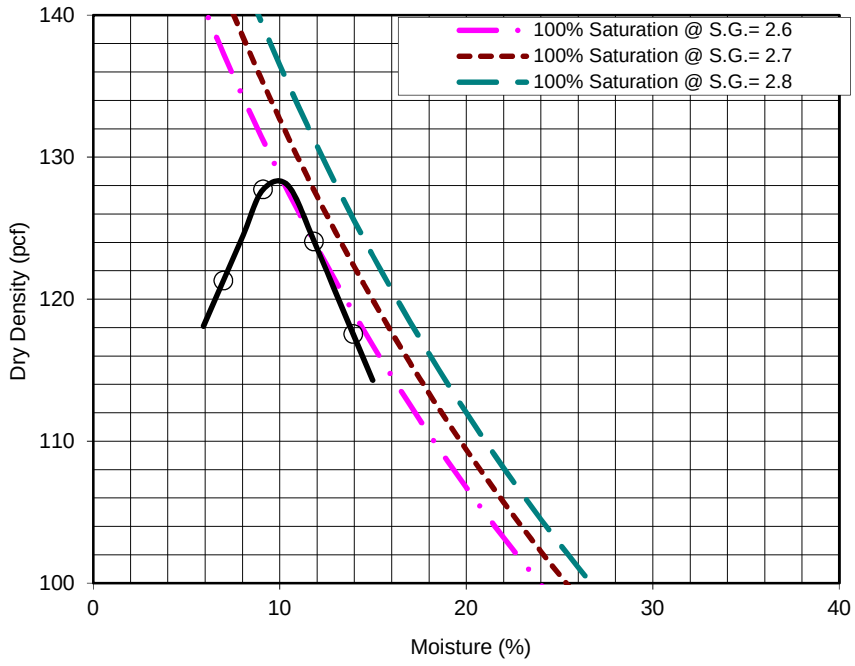
Maximum Dry Density (pcf): **128.2**
Maximum Dry Density w/ Rock Correction (pcf): **N/A**
Optimum Moisture Content (%): **10.0**
Optimum Moisture Content w/ Rock Correction (%): **N/A**

PROCEDURE USED

[X] *METHOD A: Percent of Oversize:* 1.7%
Soil Passing No. 4 (4.75 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

[ ] *METHOD B: Percent of Oversize:* N/A
Soil Passing 3/8 in. (9.5 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)

[ ] *METHOD C: Percent of Oversize:* N/A
Soil Passing 3/4 in. (19.0 mm) Sieve
Mold : 6 in. (152.4 mm) diameter
Layers : 5 (Five)
Blows per layer : 56 (fifty-six)



TETRA TECH

MODIFIED PROCTOR

Maximum Dry Density / Optimum Moisture Content

ASTM D1557

Job Name:	Vista Grande Park, La Habra	**Date Sampled:**	3/2/2020
Job Number:	197-2019-0050, Task A2 GEO	**Date Completed:**	3/11/2020
Tested By:	MG	**Sample Identification:**	B-102, SK-1
Note:		**Sample Depth:**	3.0-4.0 ft
Sample Description:	Olive gray Clayey SAND		

		Trial Number	1	2	3	4	5
Water Added	*ml*		0	50	100		
Weight of Soil + Mold	*grams*		3906.4	4013.8	4001.4		
Weight of Mold	*grams*		2032.9	2032.9	2032.9		
Weight of Wet Soil	*grams*		1873.5	1980.9	1968.5		
Wet Density	*pcf*		123.91	131.01	130.19		
		Container ID	X33	X52	X26		
Wet Soil + Tare	*grams*		298.5	372.9	374	0	
Dry Soil + Tare	*grams*		268	328.7	320.8	0	
Tare	*grams*		10.5	10.5	10.5	0	
Dry Soil	*grams*		257.5	318.2	310.3		
Water	*grams*		30.5	44.2	53.2		
Moisture Content	*%*		**11.84**	**13.89**	**17.14**		
Dry Density	*pcf*		**110.8**	**115.0**	**111.1**		

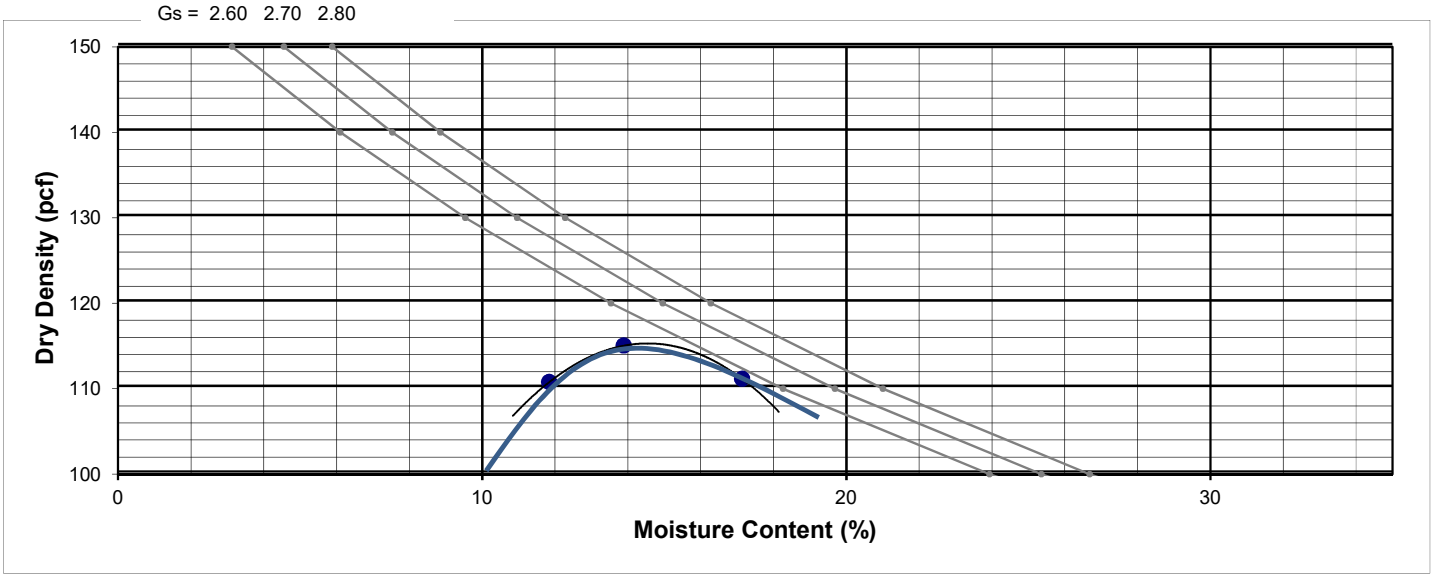
Compaction Method

Method A, B, or C	A
% retained #4	#DIV/0!

Mold Size	4
Mold Volume	0.033333

Preparation Method

Moist	X
Dry	



Maximum Dry Density	**115.0**	pcf	**Optimum Moisture Content**	**14.0**	%
w/ Rock Correction		pcf	w/ Rock Correction		%

TETRA TECH

MODIFIED PROCTOR

Maximum Dry Density / Optimum Moisture Content

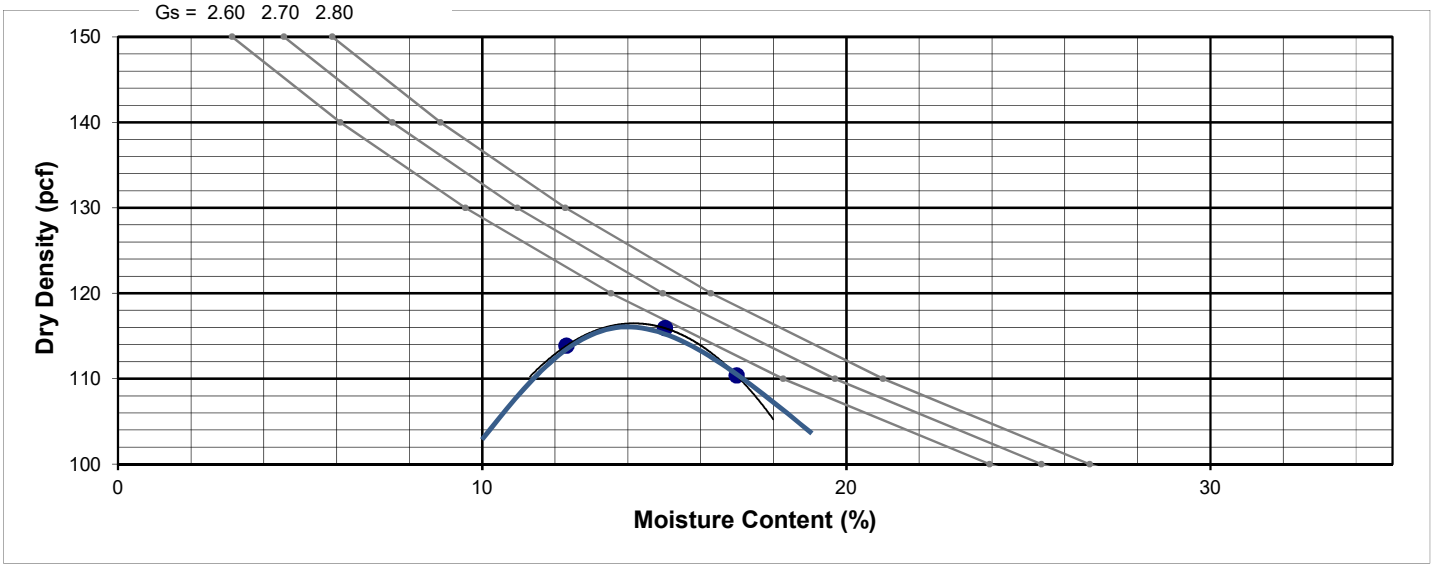
ASTM D1557

Job Name:	Vista Grande Park, La Habra	**Date Sampled:**	3/2/2020
Job Number:	197-2019-0050 Task A2 GEO	**Date Completed:**	3/11/2020
Tested By:	MG	**Sample Identification:**	B-104, SK-1
Note:		**Sample Depth:**	2.5-4.0 ft
Sample Description:	Brown Sandy lean CLAY		

		Trial Number	1	2	3	4	5
Water Added	*ml*		0	50	100		
Weight of Soil + Mold	*grams*		3966.5	4048.8	3985.1		
Weight of Mold	*grams*		2032.9	2032.9	2032.9		
Weight of Wet Soil	*grams*		1933.6	2015.9	1952.2		
Wet Density	*pcf*		127.89	133.33	129.12		
		Container ID	X46	X12	X62		
Wet Soil + Tare	*grams*		338.8	357.3	374	0	
Dry Soil + Tare	*grams*		302.8	312	321.2	0	
Tare	*grams*		10.5	10.5	10.5	0	
Dry Soil	*grams*		292.3	301.5	310.7		
Water	*grams*		36	45.3	52.8		
Moisture Content	*%*		**12.32**	**15.02**	**16.99**		
Dry Density	*pcf*		**113.9**	**115.9**	**110.4**		

Compaction Method	
Method A, B, or C	A
% retained #4	#DIV/0!
Mold Size	4
Mold Volume	0.033333

Preparation Method	
Moist	X
Dry	



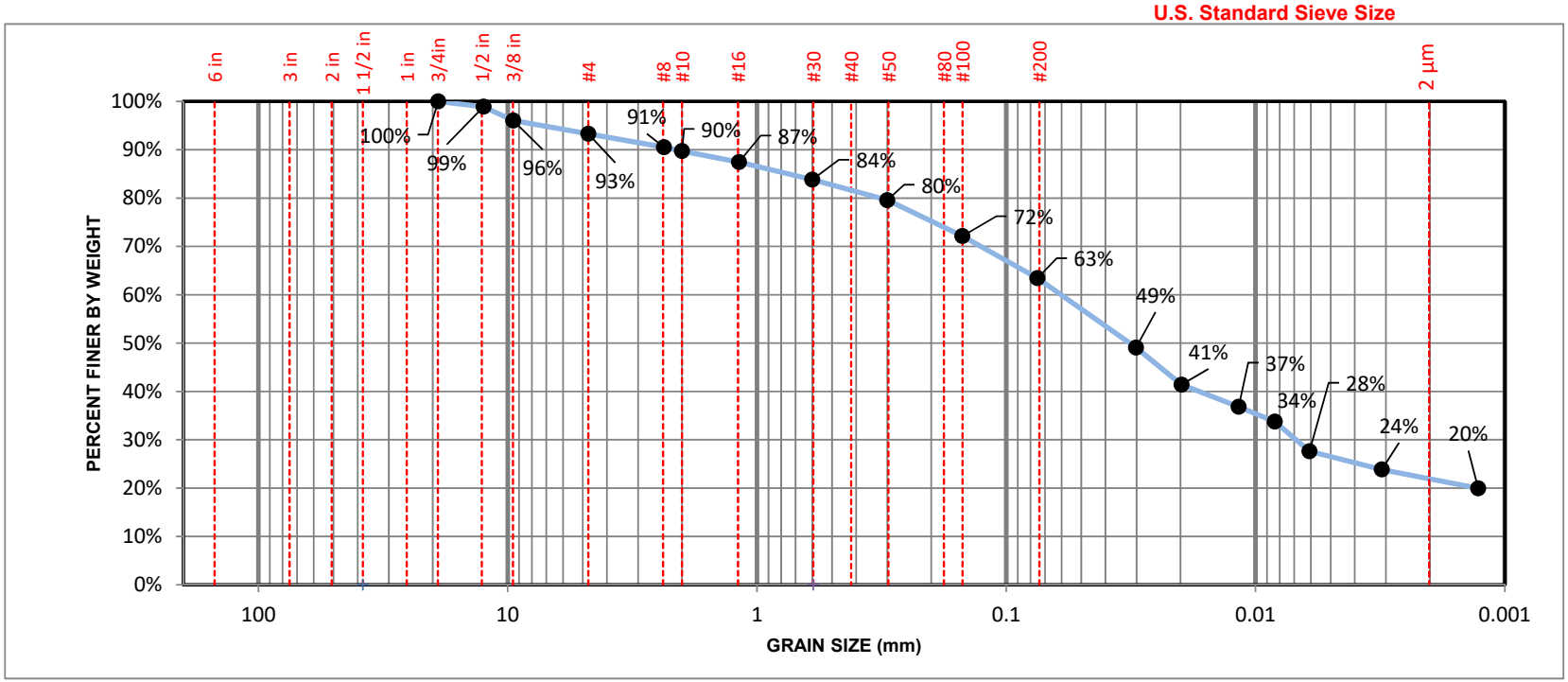
Maximum Dry Density	**116.0**	pcf	**Optimum Moisture Content**	**14.2**	%
w/ Rock Correction		pcf	w/ Rock Correction		%

TETRA TECH

GRAIN SIZE DISTRIBUTION ANALYSIS

ASTM C136/C117/D6913/D7928

Job Name:	Vista Grande Park	**Tested By :**	MG
Job Number:	TET 19-142E	**Date Completed:**	September 15, 2019
Address:	Lambert Rd and Idaho St, La Habra	**Sample Number:**	B-2, R-1
Date Sampled:	August 8, 2019	**Sample Description:**	Dark yellowish brown Sandy lean Clay



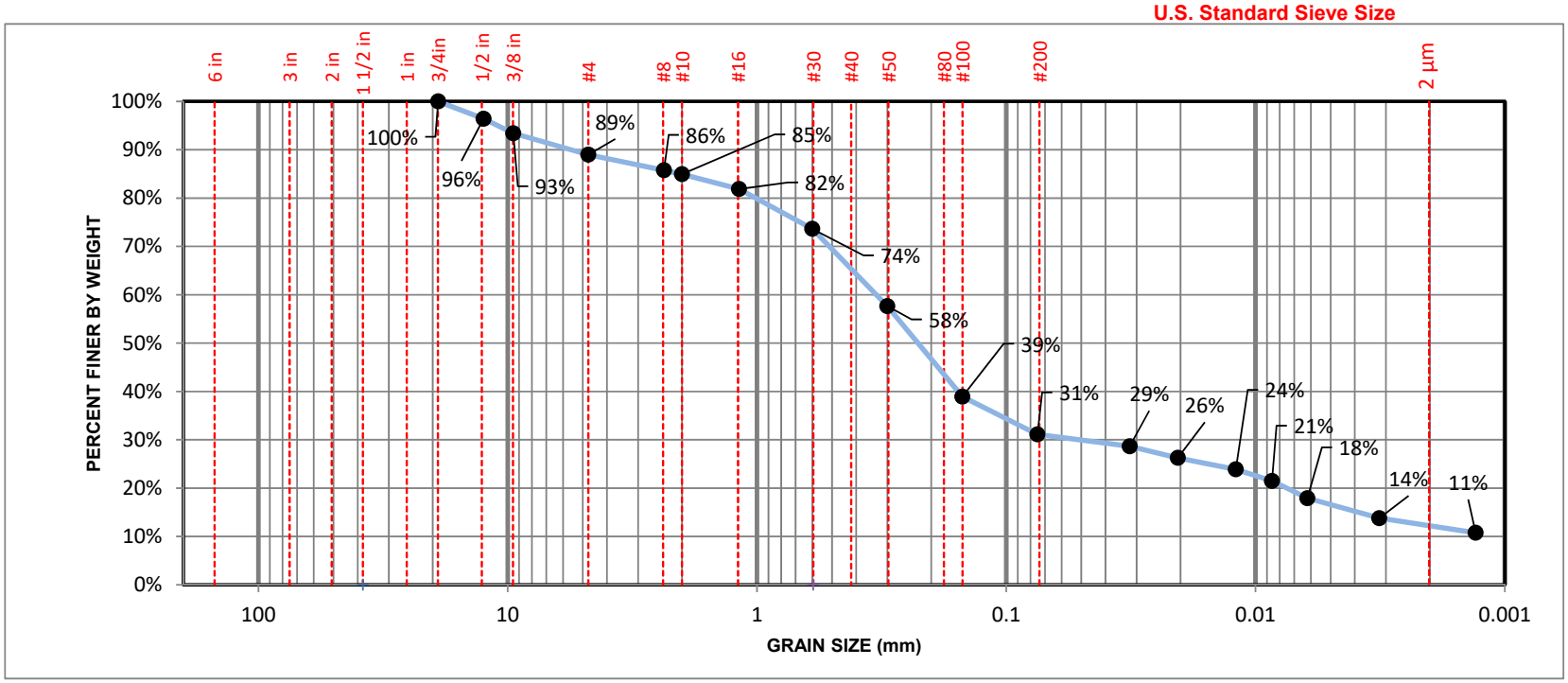
Symbol	Boring No.	Sample #	Depth (feet)	LL	PI	USCS	Cobbles	Gravel	Sand	Fines	2 µm
●	B-2	R-1	3-5 ft	--	--	**CL**	**0%**	**7%**	**30%**	**63%**	**22%**

TETRA TECH

GRAIN SIZE DISTRIBUTION ANALYSIS

ASTM C136/C117/D6913/D7928

Job Name:	Vista Grande Park	**Tested By :**	MG
Job Number:	TET 19-142E	**Date Completed:**	September 15, 2019
Address:	Lambert Rd and Idaho St, La Habra	**Sample Number:**	B-5, R-1
Date Sampled:	August 8, 2019	**Sample Description:**	Olive gray Silty Sand, fine



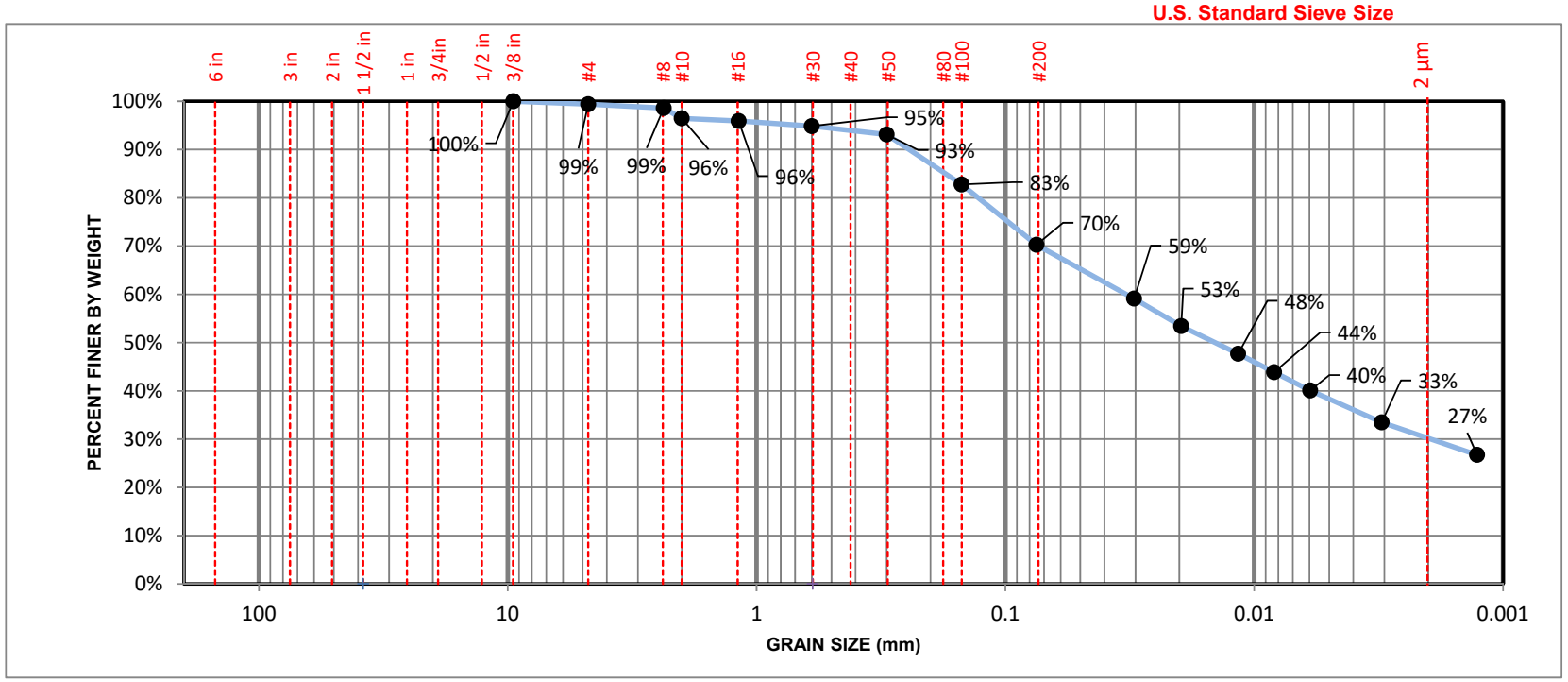
Symbol	Boring No.	Sample #	Depth (feet)	LL	PI	USCS	Cobbles	Gravel	Sand	Fines	2 µm
●	B-5	R-1	3-4 ft	--	--	**SM**	**0%**	**11%**	**58%**	**31%**	**12%**

TETRA TECH

GRAIN SIZE DISTRIBUTION ANALYSIS

ASTM C136/C117/D6913/D7928

Job Name:	Vista Grande Park	**Tested By :**	MG
Job Number:	TET 19-142E	**Date Completed:**	September 15, 2019
Address:	Lambert Rd and Idaho St, La Habra	**Sample Number:**	B-6, SPT-3
Date Sampled:	August 8, 2019	**Sample Description:**	Yellowish brown Sandy Lean Clay



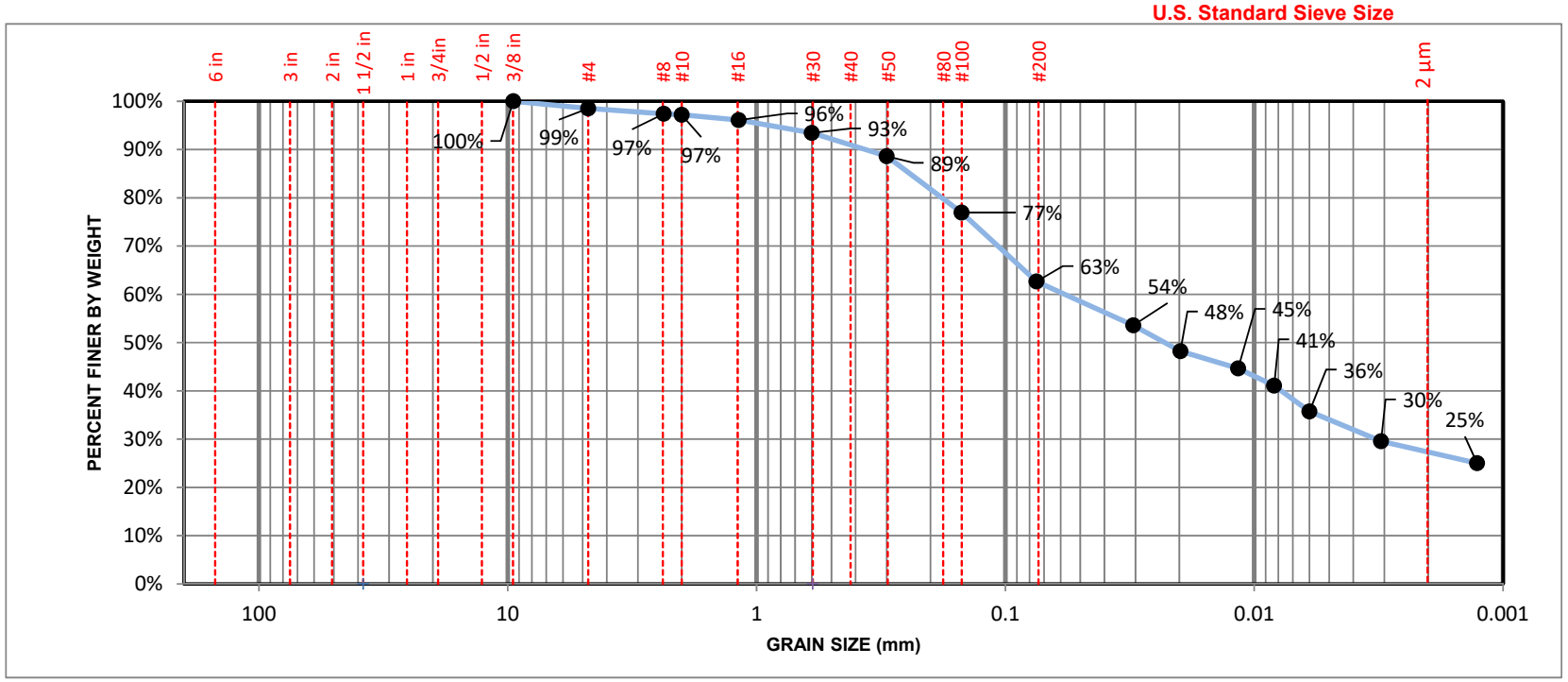
Symbol	Boring No.	Sample #	Depth (feet)	LL	PI	USCS	Cobbles	Gravel	Sand	Fines	2 µm
●	B-6	SPT-3	5-6.5 ft	--	--	**CL**	**0%**	**1%**	**29%**	**70%**	**30%**

TETRA TECH

GRAIN SIZE DISTRIBUTION ANALYSIS

ASTM C136/C117/D6913/D7928

Job Name:	Vista Grande Park	**Tested By :**	MG
Job Number:	TET 19-142E	**Date Completed:**	September 15, 2019
Address:	Lambert Rd and Idaho St, La Habra	**Sample Number:**	B-8, R-1
Date Sampled:	August 8, 2019	**Sample Description:**	Dark yellowish brown Sandy Clay with Silt



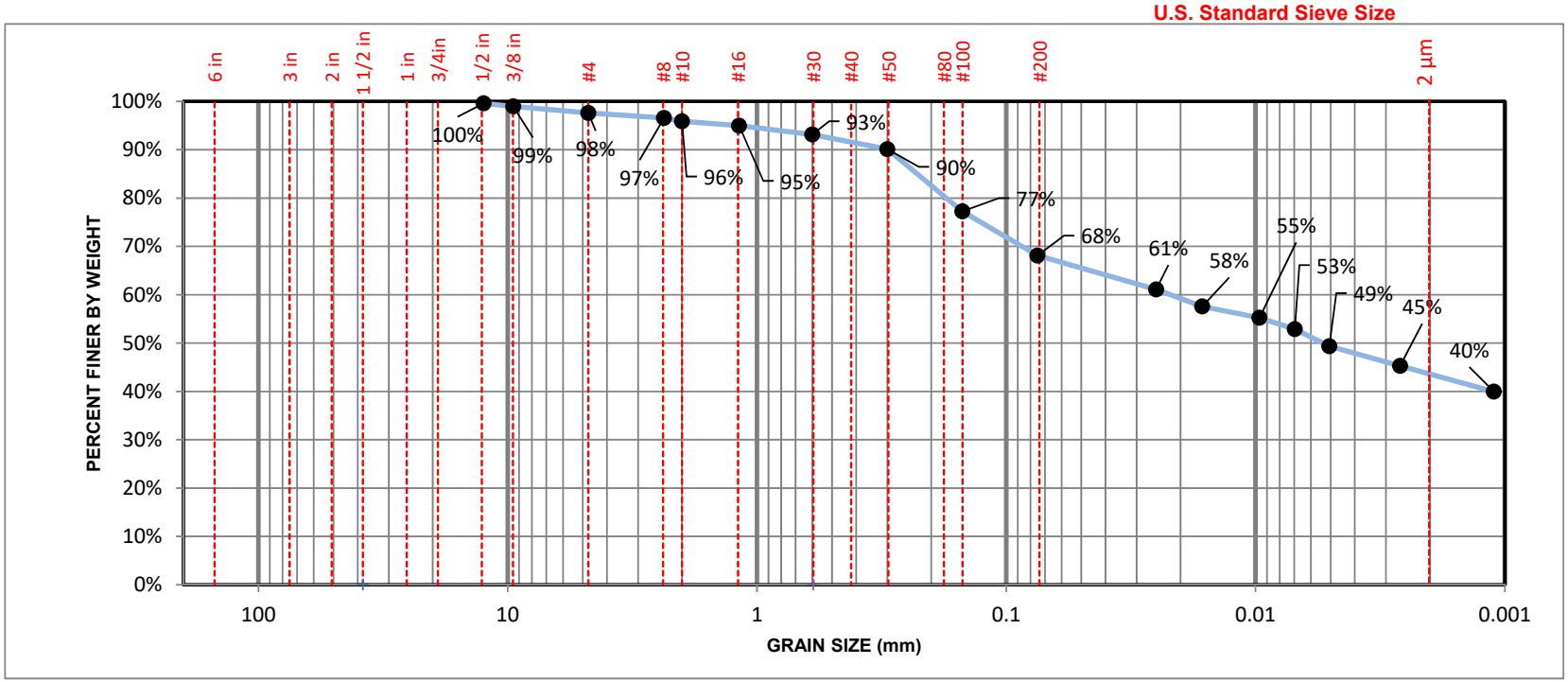
Symbol	Boring No.	Sample #	Depth (feet)	LL	PI	USCS	Cobbles	Gravel	Sand	Fines	2 µm
●	B-8	R-1	3-4 ft	--	--	**CL**	**0%**	**1%**	**36%**	**63%**	**27%**

TETRA TECH

GRAIN SIZE DISTRIBUTION ANALYSIS

ASTM C136/C117/D6913/D7928

Job Name:	Vista Granda Park	**Tested By :**	MG
Job Number:	TET 19-142E	**Date Completed:**	September 15, 2019
Address:	Lambert Rd and Idaho St, L Habra	**Sample Number:**	B-9, SK-3
Date Sampled:	August 9, 2019	**Sample Description:**	Light yellowish brown Silty Sandstone

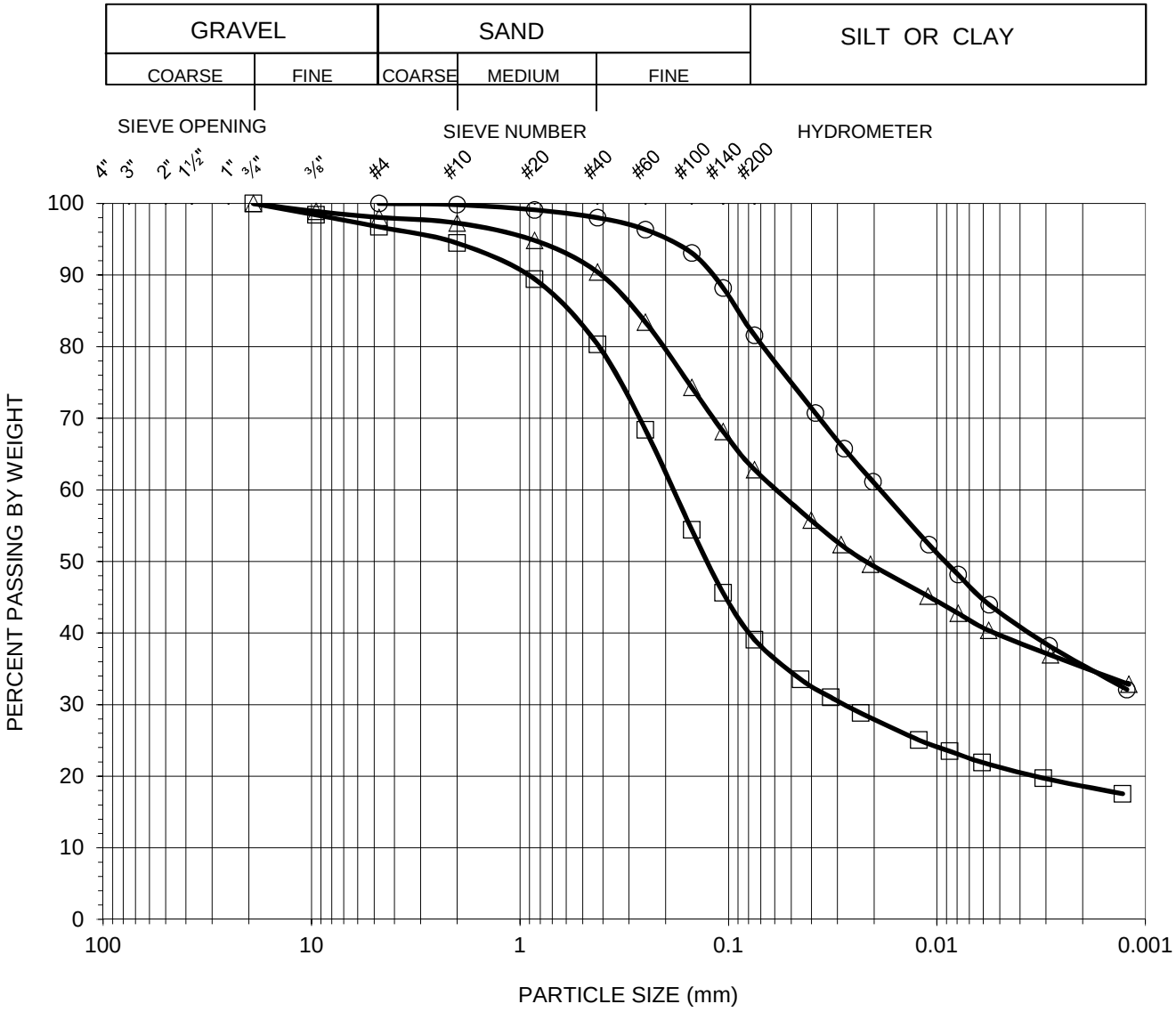


Symbol	Boring No.	Sample #	Depth (feet)	LL	PI	USCS	Cobbles	Gravel	Sand	Fines	2 µm
●	B-9	SK-3	5-10 ft	--	--	**CL**	**0%**	**2%**	**29%**	**68%**	**43%**

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GRAIN SIZE DISTRIBUTION CURVE
ASTM D 6913 & D 7928

Client Name: Tetra Tech — Tested by: NR — Date: 02/27/20
Project Name: Vista Grande Park — Computed by: NR — Date: 02/27/20
Project No.: 197-2019-0050 A2 GEO — Checked by: AP — Date: 02/28/20



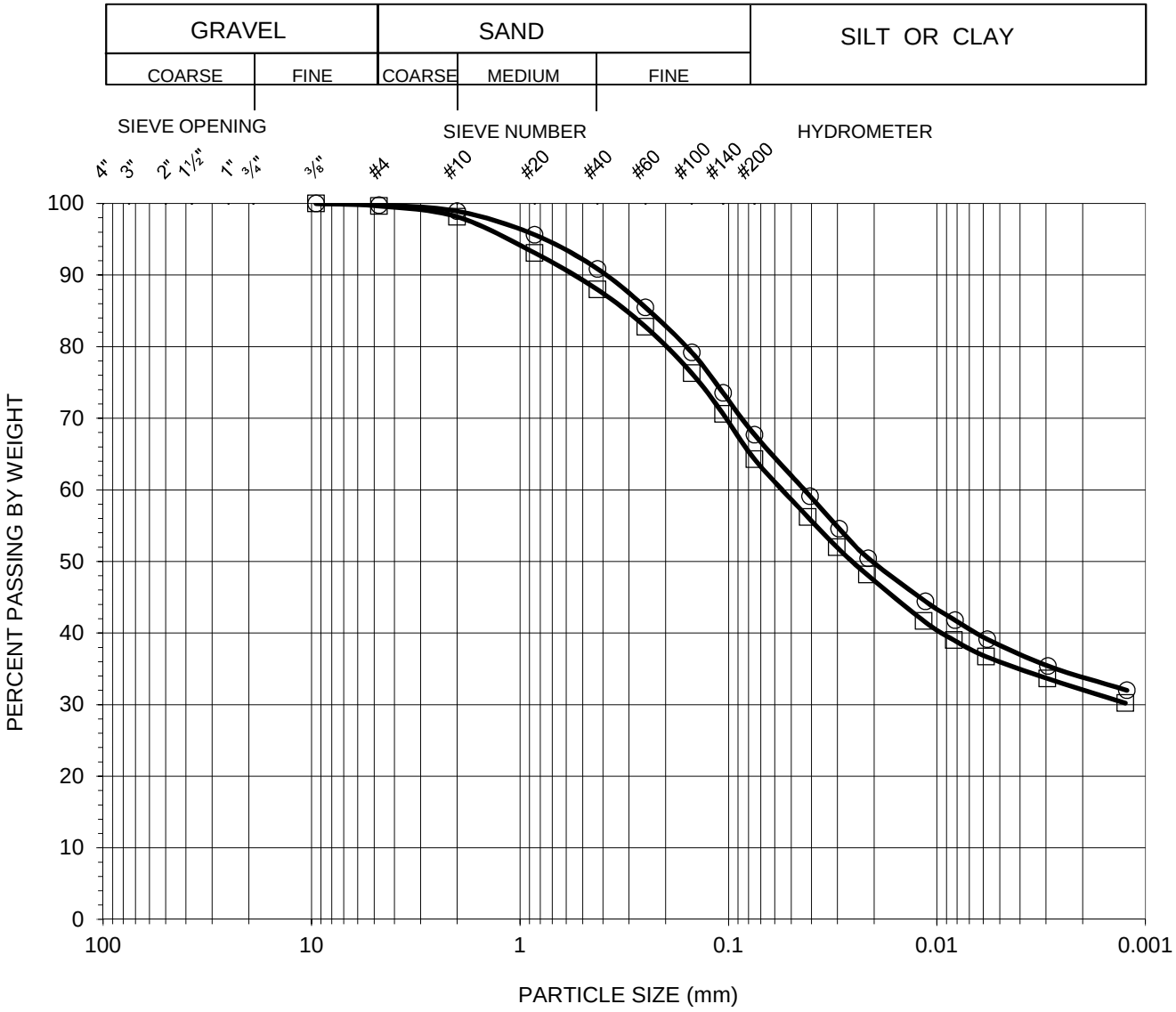
Symbol	Boring No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	B-101	R-2	3.5-4.0	0	18	82	N/A	CL*
□	B-102	R-2	3.5-4.0	3	58	39	N/A	SC*
△	B-103	R-2	4.0-4.5	2	35	63	N/A	CL*

**Note: Based on visual classification of sample*

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GRAIN SIZE DISTRIBUTION CURVE
ASTM D 6913 & D 7928

Client Name: Tetra Tech — Tested by: NR — Date: 02/27/20
Project Name: Vista Grande Park — Computed by: NR — Date: 02/27/20
Project No.: 197-2019-0050 A2 GEO — Checked by: AP — Date: 02/28/20



Symbol	Boring No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	B-104	R-2	3.5-4.0	0	32	68	N/A	CL*
□	B-105	R-2	4.0-4.5	0	36	64	N/A	CL*

**Note: Based on visual classification of sample*

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PERCENT PASSING NO. 200 SIEVE

ASTM D1140

Client:	Tetra Tech	AP Lab No.:	19-0910
Project Name:	Vista Grande Park	Test Date:	09/09/19
Project Number:	BAS 19-142E		

Boring No.	Sample No.	Depth (ft)	Percent Fines (%)
B-10	SK-1	0-5	48.7

TETRA TECH

PERCENT PASSING # 200 SIEVE

ASTM D1140

Job Name:	Vista Grande Park	**Tested By :**	MG
Job Number:	TET 19-142E	**Date Completed:**	September 15, 2019
Address:	Lambert Rd and Idaho St, La Habra	**Sample Number:**	B-11, SK-1
Date Sampled:	August 9, 2019	**Sample Description:**	Greenish gray Silty Sand

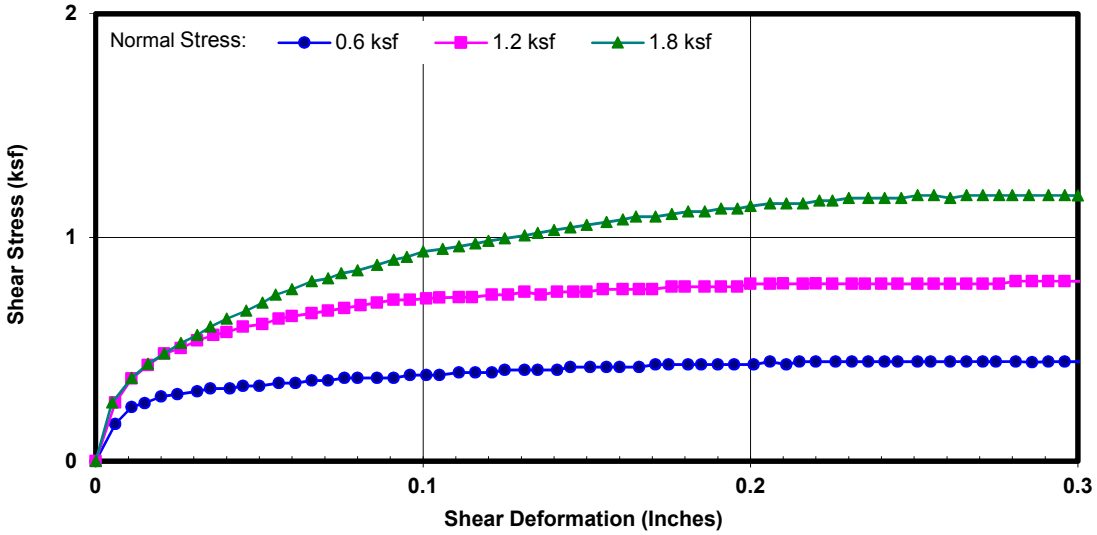
Boring Number	Sample Number	Depth (ft)	Weight Before Wash - Dry (grams)	Weight After Wash - Dry (grams)	Percent Passing # 200 Sieve	USCS Classification
B-11	**SK-1**	0-5 ft	1247.1	1079.3	13%	SM

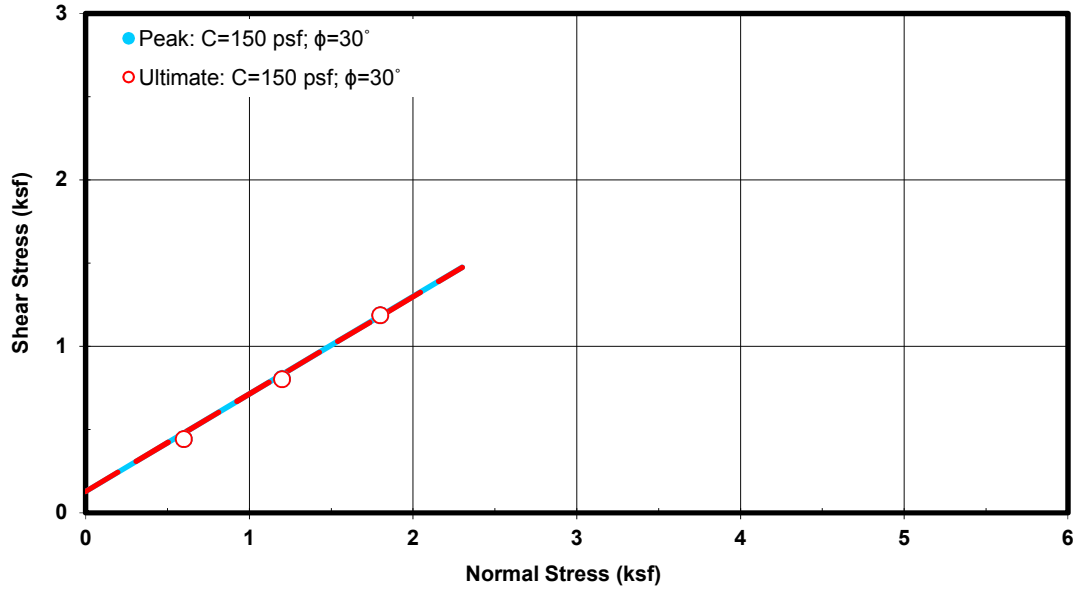
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DIRECT SHEAR TEST RESULTS
ASTM D 3080

Project Name:	Vista Grande Park			**Tested By:** ST	**Date:** 09/10/19
Project No.:	BAS 19-142E			**Computed By:** NR	**Date:** 09/11/19
Boring No.:	B-6			**Checked by:** AP	**Date:** 09/12/19
Sample No.:	R-1	**Depth (ft):**	2.5-4		
Sample Type:	Mod. Cal.				
Soil Description:	Lean Clay w/sand				
Test Condition:	Inundated	**Shear Type:**	Regular		

Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Initial Moisture Content (%)	Final Moisture Content (%)	Initial Degree Saturation (%)	Final Degree Saturation (%)	Normal Stress (ksf)	Peak Shear Stress (ksf)	Ultimate Shear Stress (ksf)
107.0	94.6	13.1	26.1	45	90	0.6	0.444	0.444
						1.2	0.804	0.803
						1.8	1.188	1.187





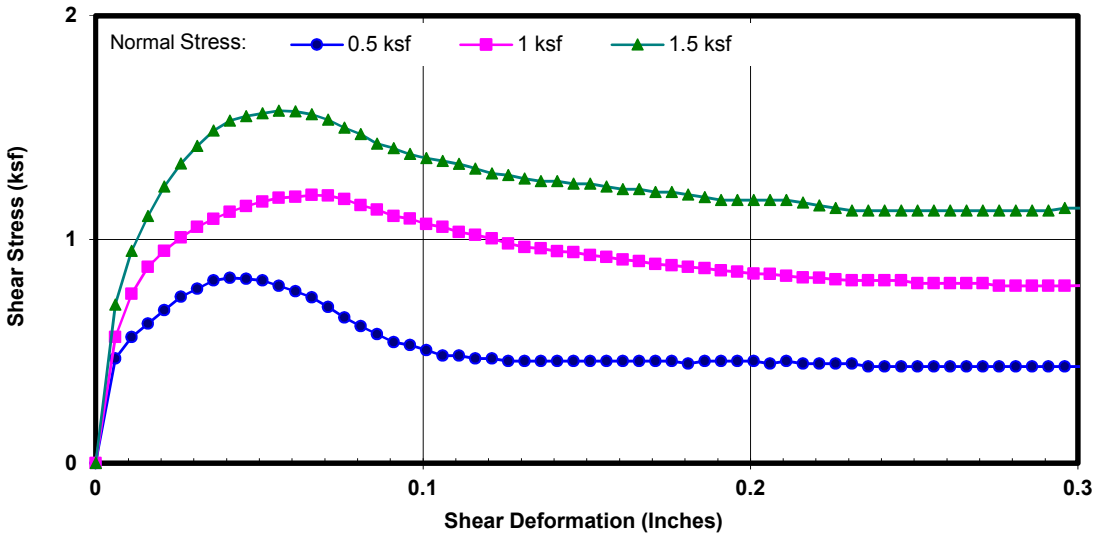
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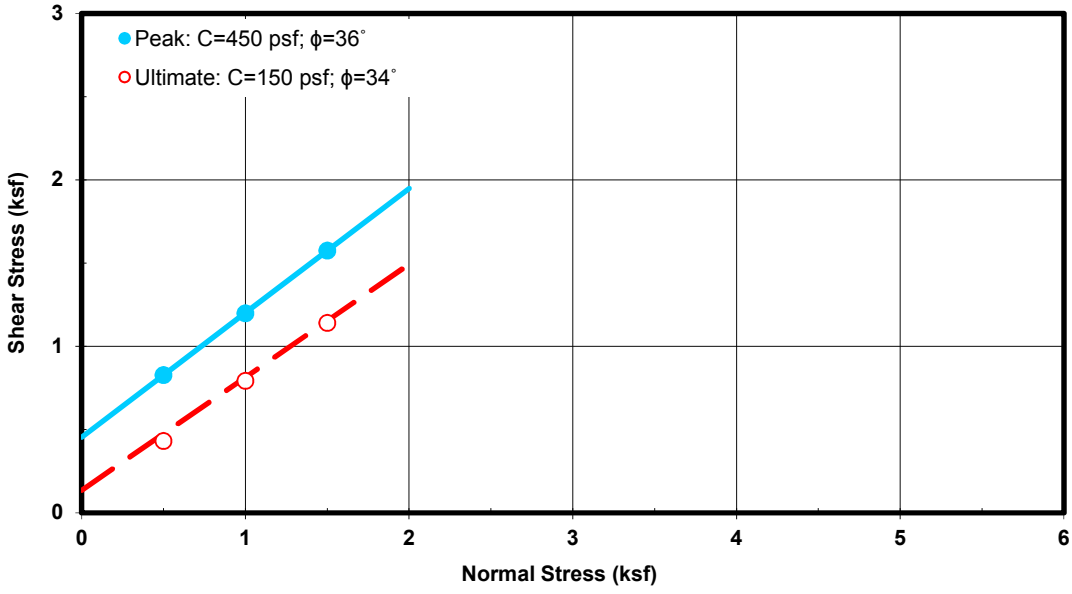
DIRECT SHEAR TEST RESULTS
ASTM D 3080

Project Name: Vista Grande Park
Project No.: BAS 19-142E
Boring No.: B-9
Sample No.: R-4 **Depth (ft):** 7.5-9
Sample Type: Mod. Cal.
Soil Description: Sandy Lean Clay
Test Condition: Inundated **Shear Type:** Regular

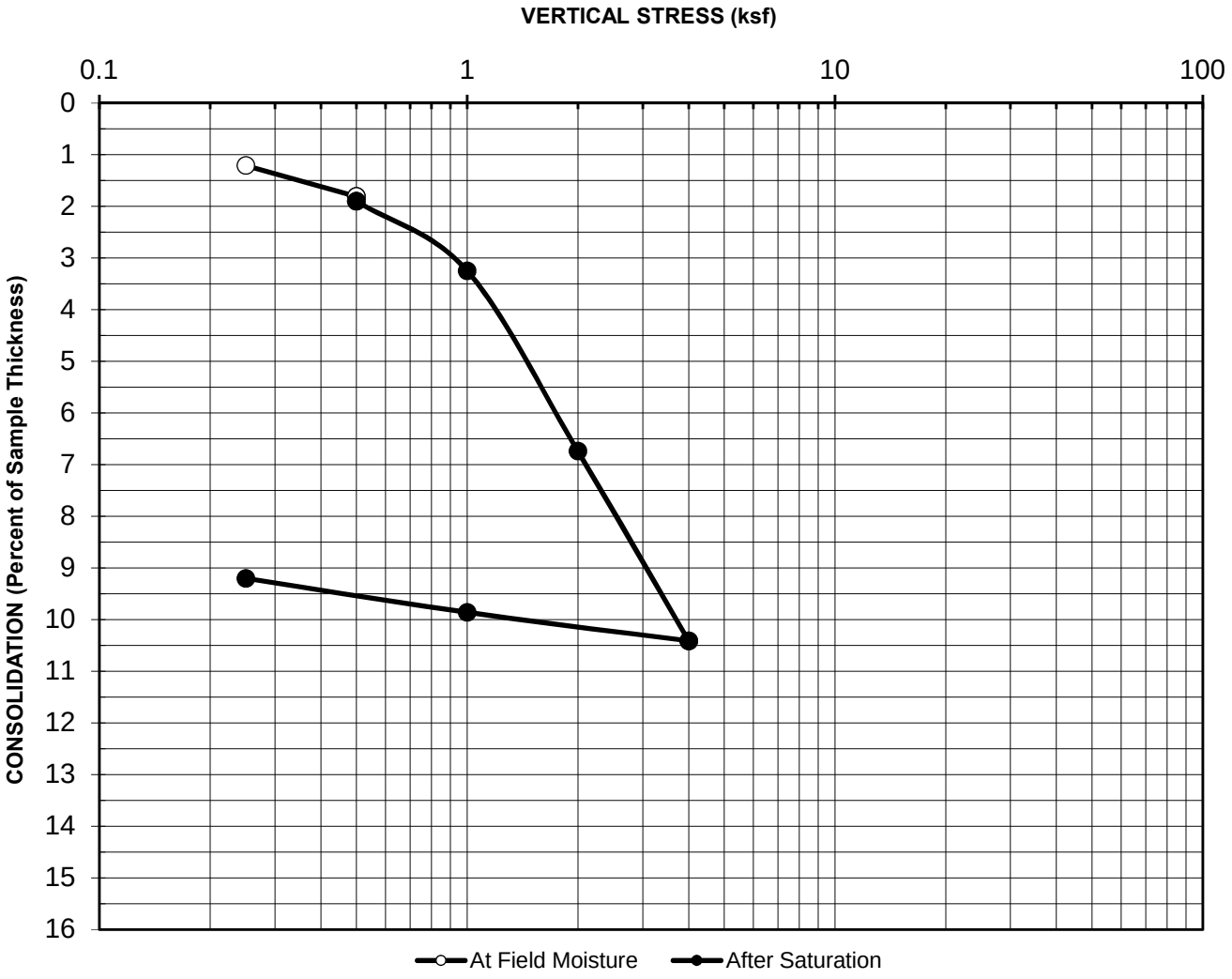
Tested By: LS **Date:** 09/09/19
Computed By: NR **Date:** 09/10/19
Checked by: AP **Date:** 09/12/19

Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Initial Moisture Content (%)	Final Moisture Content (%)	Initial Degree Saturation (%)	Final Degree Saturation (%)	Normal Stress (ksf)	Peak Shear Stress (ksf)	Ultimate Shear Stress (ksf)
127.4	110.3	15.5	19.5	79	100	0.5	0.828	0.432
						1	1.198	0.793
						1.5	1.575	1.140





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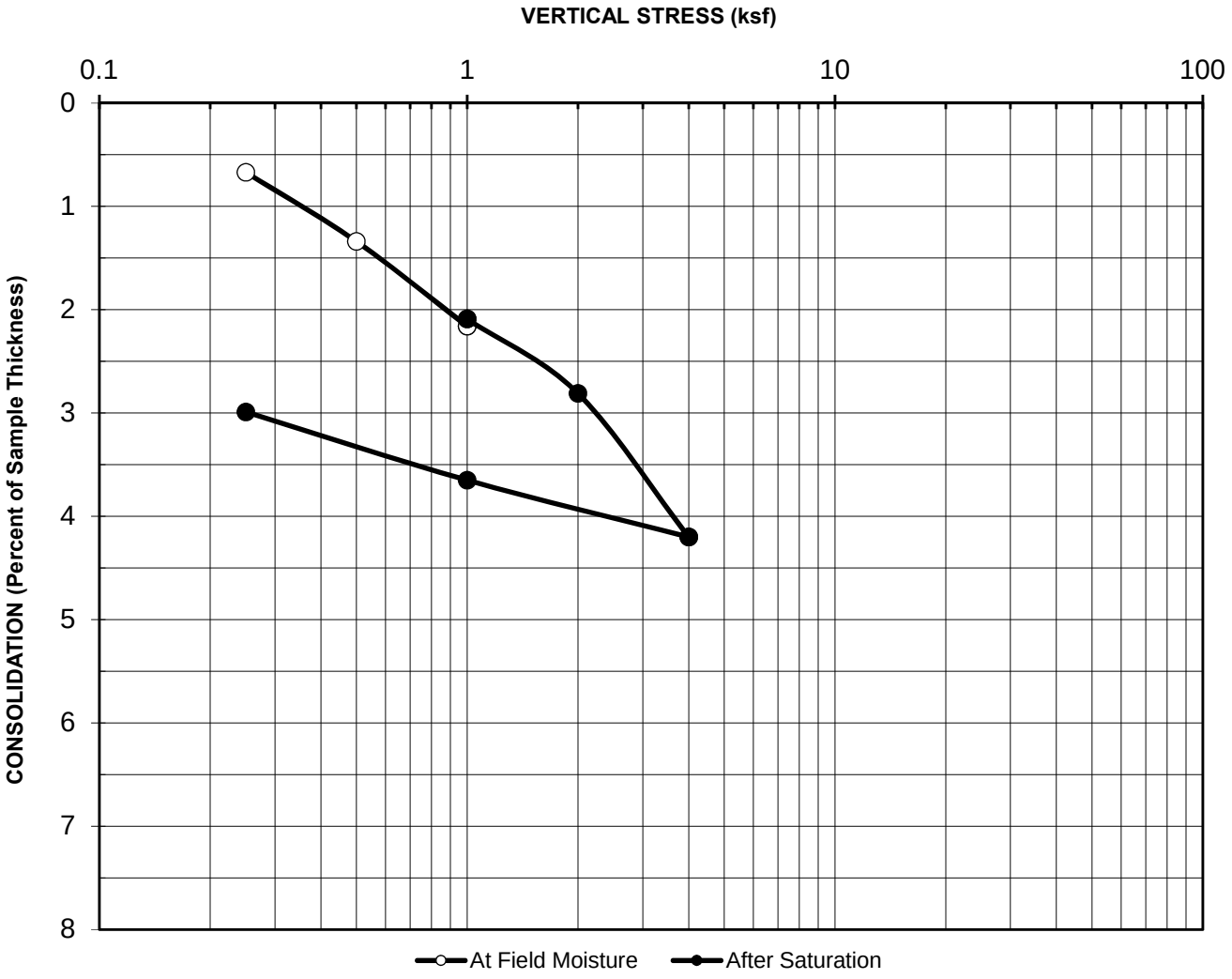


Boring No. :	B-6	Initial Dry Unit Weight (pcf):	93.6
Sample No.:	R-1	Initial Moisture Content (%):	13.1
Depth (feet):	2.5-4	Final Moisture Content (%):	23.2
Sample Type:	Mod Cal	Assumed Specific Gravity:	2.7
Soil Description:	Lean Clay w/sand	Initial Void Ratio:	0.80
Remarks:	Collapse= 0.09% upon inundation		

CONSOLIDATION CURVE
ASTM D 2435

Project Name:	Vista Grande Park
Project No.:	BAS 19-142E
Date:	9/11/2019
AP No:	19-0910 **Figure No:** 1

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Boring No. :	B-12	Initial Dry Unit Weight (pcf):	100.6
Sample No.:	R-4	Initial Moisture Content (%):	21.3
Depth (feet):	7.5-9	Final Moisture Content (%):	22.6
Sample Type:	Mod Cal	Assumed Specific Gravity:	2.7
Soil Description:	Lean Clay	Initial Void Ratio:	0.67
Remarks:	Swell= 0.07% upon inundation		

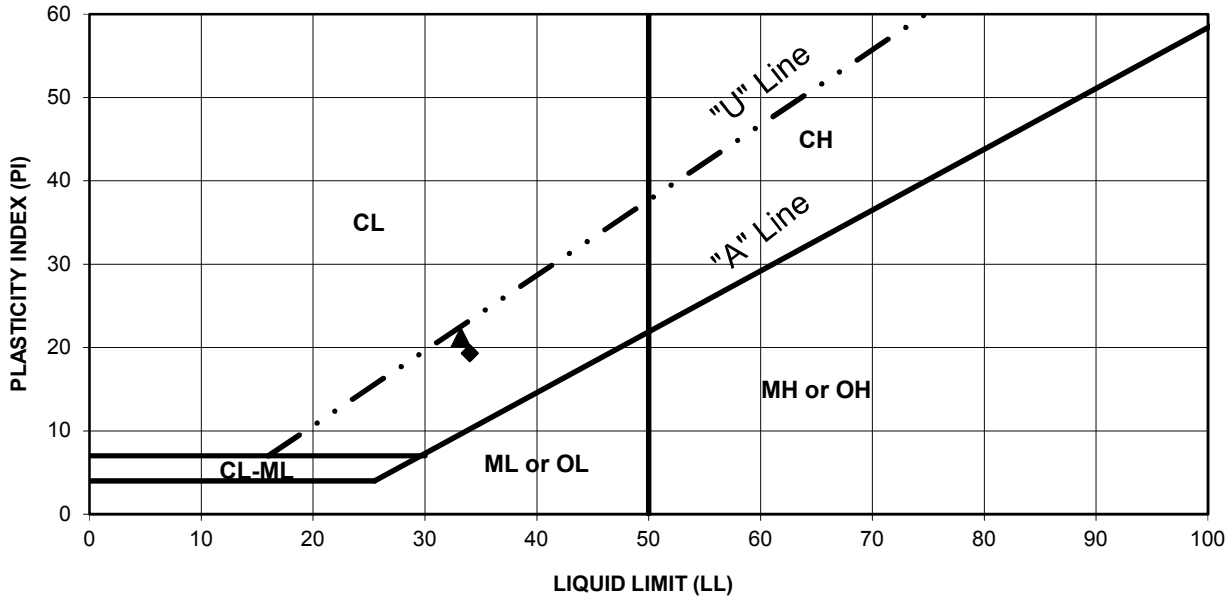
CONSOLIDATION CURVE
ASTM D 2435

Project Name:	Vista Grande Park
Project No.:	BAS 19-142E
Date:	9/6/2019
AP No:	19-0910 **Figure No:** 1

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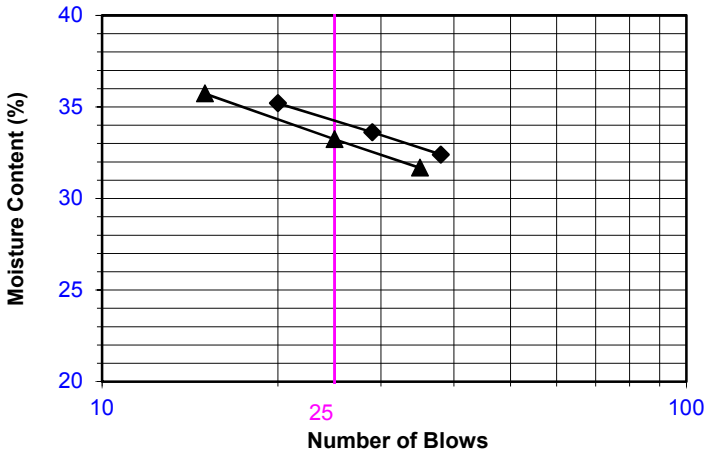
ATTERBERG LIMITS
ASTM D 4318

Client Name:	Tetra Tech	Tested By:	DK	Date:	09/10/19
Project Name:	Vista Grande Park	Computed By:	NR	Date:	09/12/19
Project No.:	BAS 19-142E	Checked By:	AP	Date:	09/12/19



PROCEDURE USED

- ☐ Wet Preparation
- ☒ Dry Preparation
- ☒ Procedure A Multipoint Test
- ☐ Procedure B One-point Test



Symbol	Boring Number	Sample Number	Depth (feet)	LL	PL	PI	Plasticity Chart Symbol
♦	B-6	R-1	2.5-4	34	15	19	CL
▲	B-9	R-4	7.5-9	33	12	21	CL

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FLEXIBLE WALL HYDRAULIC CONDUCTIVITY TEST
ASTM D5084 Method A-Constant Head

Client:	Tetra Tech		Tested by	ST	Date 02/25/20
Project Name:	Vista Grande Park		Calculated by	JP	Date 02/27/20
Project No.:	197-2019-0050 A2 GEO		Checked by	AP	Date 02/28/20
Boring No.:	B-101				
Sample No.:	R-2	Depth (ft.): 3.5-4.0			
Soil Description:	Clay w/sand				
Sample Type:	Mod Cal				

INITIAL CONDITION OF SPECIMEN

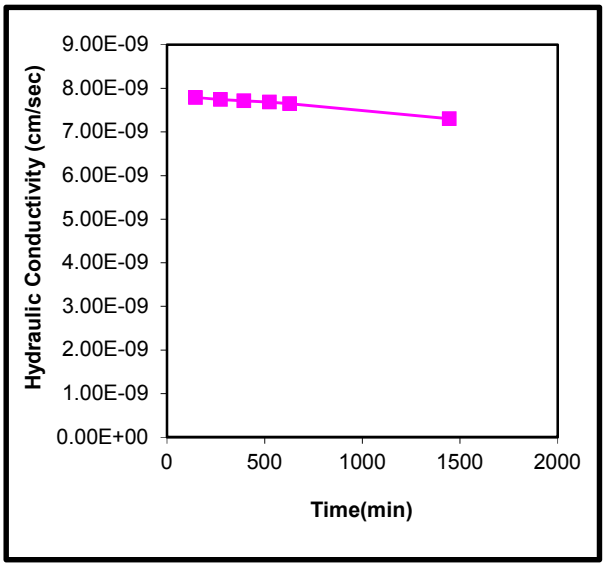
				Before	After
Diameter (d)	2.41	in			
Sample Area (A)	4.55	in²	Wt. Wet Soil+Container(gms)	43.87	810.41
Length (L)	3.04	in	Wt. Dry Soil+Container(gms)	36.65	723.79
Weight Before	458.87	g	Wt. Container (gms)	2.58	343.3
Wet Density	126.20	pcf	Moisture, (%)	21.19	22.77
Dry Density	104.13	pcf	Degree of Saturation	93	99
Confining Pressure	5	psi			

SATURATION AND CONSOLIDATION PHASES

B-value Check	Initial	Final	Diff	B-value
Cell Pressure,psi	35.0	40.0	5.0	0.97
Back Pressure,psi	30.0	34.9	4.9	

Consolidation Data					
		Volume Reading (cc)			
Date	Time	Bot	Top	Total	ΔV

FLOW DATA AND CALCULATIONS



Water Temp. °C, T_1= 19.9			Water Temp. °C, T_2= 19.9			
Δt (min)	Head (psi)	Burette Factor	ΔQ (cc)	Δh (cm)	Δh/L	k (cm/s)
0	3.0	0.082	0.0	205.6154	26.6	0
146.00	3.0	0.082	0.05	206.2654	26.7	7.79E-09
128.00	3.0	0.082	0.05	207.4854	26.9	7.75E-09
120.00	3.0	0.082	0.04	208.5904	27.0	7.71E-09
131.00	3.0	0.082	0.05	209.7104	27.1	7.69E-09
103.00	3.0	0.082	0.04	210.7554	27.3	7.65E-09
817.00	3.0	0.082	0.29	214.7654	27.8	7.30E-09

Hydraulic Conductivity, k_{20} (cm/sec): 7.67E-09

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FLEXIBLE WALL HYDRAULIC CONDUCTIVITY TEST
ASTM D5084 Method A-Constant Head

Client:	Tetra Tech		Tested by	ST	Date 02/25/20
Project Name:	Vista Grande Park		Calculated by	JP	Date 02/27/20
Project No.:	197-2019-0050 A2 GEO		Checked by	AP	Date 02/28/20
Boring No.:	B-102				
Sample No.:	R-2	Depth (ft.): 3.5-4.0			
Soil Description:	Clayey Sand				
Sample Type:	Mod Cal				

INITIAL CONDITION OF SPECIMEN

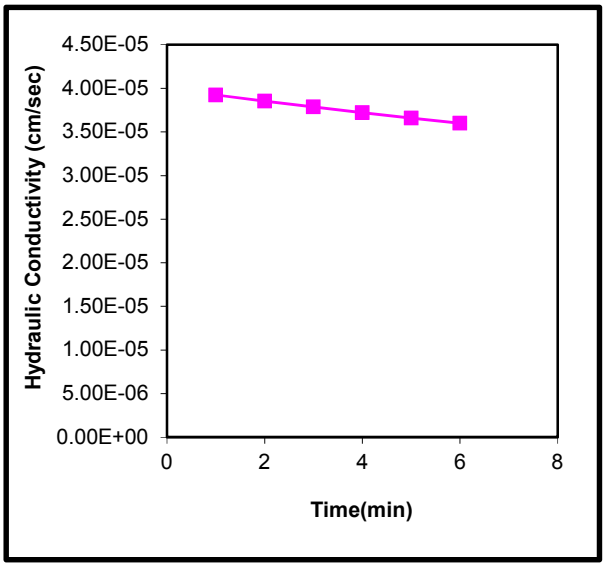
				Before	After
Diameter (d)	2.42	in			
Sample Area (A)	4.60	in²	Wt. Wet Soil+Container(gms)	44.56	605.68
Length (L)	3.05	in	Wt. Dry Soil+Container(gms)	42.03	527.29
Weight Before	427.53	g	Wt. Container (gms)	2.60	125.36
Wet Density	116.28	pcf	Moisture, (%)	6.42	19.50
Dry Density	109.27	pcf	Degree of Saturation	32	97
Confining Pressure	5	psi			

SATURATION AND CONSOLIDATION PHASES

B-value Check	Initial	Final	Diff	B-value
Cell Pressure,psi	35.0	40.0	5.0	0.96
Back Pressure,psi	30.0	34.8	4.8	

Consolidation Data					
		Volume Reading (cc)			
Date	Time	Bot	Top	Total	ΔV

FLOW DATA AND CALCULATIONS



Water Temp. °C, T_1= 19.2			Water Temp. °C, T_2= 19.2			
Δt (min)	Head (psi)	Burette Factor	ΔQ (cc)	Δh (cm)	Δh/L	k (cm/s)
0	1.0	1	0.0	63.43846	8.2	0
1.00	1.0	1	0.57	64.01346	8.3	3.92E-05
1.00	1.0	1	0.57	65.16346	8.4	3.85E-05
1.00	1.0	1	0.57	66.31346	8.6	3.79E-05
1.00	1.0	1	0.58	67.46346	8.7	3.72E-05
1.00	1.0	1	0.57	68.61346	8.9	3.66E-05
1.00	1.0	1	0.57	69.76346	9.0	3.60E-05

Hydraulic Conductivity, k_{20} (cm/sec): 3.83E-05

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FLEXIBLE WALL HYDRAULIC CONDUCTIVITY TEST
ASTM D5084 Method A-Constant Head

Project Name:	Vista Grande Park		Tested by	ST	Date 03/17/20
Project No.:	197-2019-0050 A2 GEO		Calculated by	JP	Date 03/18/20
Boring No.:	B-102		Checked by	AP	Date 03/19/20
Sample No.:	SK-1	Depth (ft.): 3.0-4.0			
Soil Description:	Clayey Sand				
Test Condition:	Remolded to 90% RC at 110% of OMC				
	Confining Pressure = 5 psi				
Remarks:					

INITIAL CONDITION OF SPECIMEN

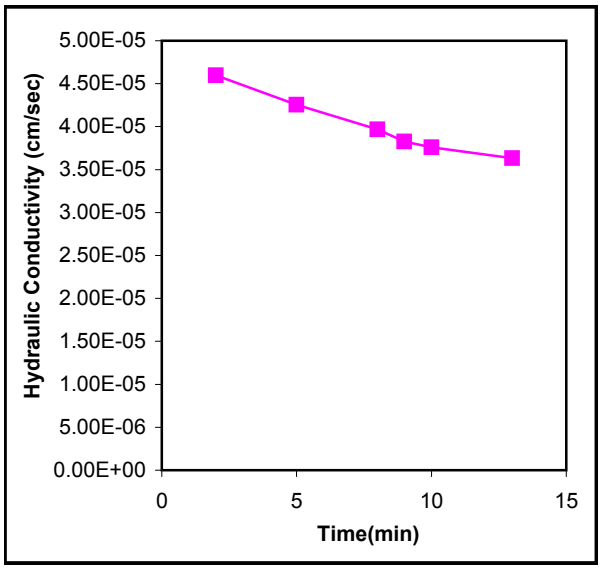
				Before	After
Diameter (d)	2.42	in			
Sample Area (A)	4.58	in²	Wt. Wet Soil+Container(gms)	264.52	608.06
Length (L)	3.00	in	Wt. Dry Soil+Container(gms)	258.30	516.62
Weight Before	430.96	g	Wt. Container (gms)	218.16	143.09
Wet Density	119.46	pcf	Moisture, (%)	15.50	24.48
Dry Density	103.43	pcf	Degree of Saturation	67	105

SATURATION AND CONSOLIDATION PHASES

B-value Check	Initial	Final	Diff	B-value
Cell Pressure,psi	35.0	40.0	5.0	0.96
Back Pressure,psi	30.0	34.8	4.8	

Consolidation Data					
		Volume Reading (cc)			
Date	Time	Bot	Top	Total	ΔV
					N/A

FLOW DATA AND CALCULATIONS



Water Temp. °C, T_1= 19.6			Water Temp. °C, T_2= 19.6			
Δt (min)	Head (psi)	Burette Factor	ΔQ (cc)	Δh (cm)	Δh/L	k (cm/s)
0	1.2	1	0.0	59.69262	7.8	0
2.00	1.2	1	1.30	60.99262	8.0	4.60E-05
3.00	1.2	1	1.90	64.19262	8.4	4.26E-05
3.00	1.2	1	1.88	67.96762	8.9	3.97E-05
1.00	1.2	1	0.63	70.46762	9.2	3.83E-05
1.00	1.2	1	0.62	71.71762	9.4	3.76E-05
3.00	1.2	1	1.88	74.21762	9.7	3.63E-05

Hydraulic Conductivity, k_{20} (cm/sec): 4.05E-05

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FLEXIBLE WALL HYDRAULIC CONDUCTIVITY TEST
ASTM D5084 Method A-Constant Head

Client:	Tetra Tech		Tested by	ST	Date 02/25/20
Project Name:	Vista Grande Park		Calculated by	JP	Date 02/27/20
Project No.:	197-2019-0050 A2 GEO		Checked by	AP	Date 02/28/20
Boring No.:	B-103				
Sample No.:	R-2	Depth (ft.): 4.0-4.5			
Soil Description:	Sandy Clay				
Sample Type:	Mod Cal				

INITIAL CONDITION OF SPECIMEN

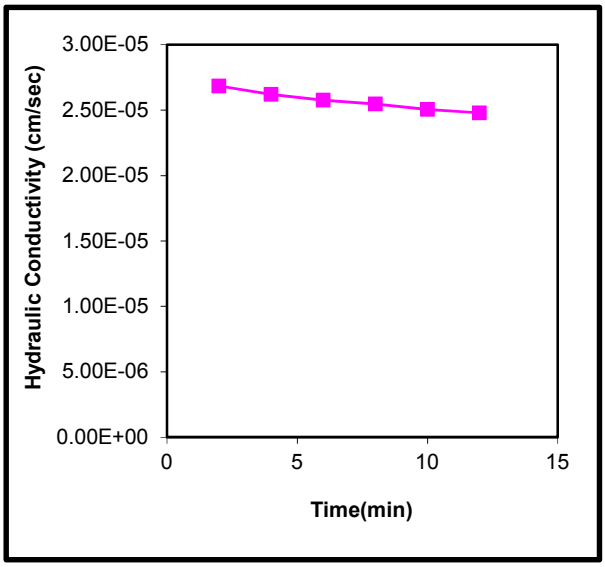
				Before	After
Diameter (d)	2.40	in			
Sample Area (A)	4.51	in²	Wt. Wet Soil+Container(gms)	20.77	679.05
Length (L)	3.04	in	Wt. Dry Soil+Container(gms)	18.68	587.58
Weight Before	402.48	g	Wt. Container (gms)	2.62	234.04
Wet Density	111.65	pcf	Moisture, (%)	13.01	25.87
Dry Density	98.79	pcf	Degree of Saturation	50	99
Confining Pressure	5	psi			

SATURATION AND CONSOLIDATION PHASES

B-value Check	Initial	Final	Diff	B-value
Cell Pressure,psi	35.0	40.0	5.0	0.97
Back Pressure,psi	30.0	34.9	4.9	

Consolidation Data					
		Volume Reading (cc)			
Date	Time	Bot	Top	Total	ΔV

FLOW DATA AND CALCULATIONS



Water Temp. °C, T_1= 19.8			Water Temp. °C, T_2= 19.8			
Δt (min)	Head (psi)	Burette Factor	ΔQ (cc)	Δh (cm)	Δh/L	k (cm/s)
0	1.0	1	0.0	67.05846	8.7	0
2.00	1.0	1	0.82	67.87846	8.8	2.68E-05
2.00	1.0	1	0.82	69.51846	9.0	2.62E-05
2.00	1.0	1	0.82	71.16346	9.2	2.58E-05
2.00	1.0	1	0.83	72.82346	9.4	2.55E-05
2.00	1.0	1	0.84	74.49846	9.6	2.51E-05
2.00	1.0	1	0.85	76.18846	9.9	2.48E-05

Hydraulic Conductivity, k_{20} (cm/sec): 2.58E-05

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FLEXIBLE WALL HYDRAULIC CONDUCTIVITY TEST
ASTM D5084 Method A-Constant Head

Client:	Tetra Tech		Tested by	ST	Date 02/25/20
Project Name:	Vista Grande Park		Calculated by	JP	Date 02/27/20
Project No.:	197-2019-0050 A2 GEO		Checked by	AP	Date 02/28/20
Boring No.:	B-104				
Sample No.:	R-2	Depth (ft.): 3.5-4.0			
Soil Description:	Sandy Clay				
Sample Type:	Mod Cal				

INITIAL CONDITION OF SPECIMEN

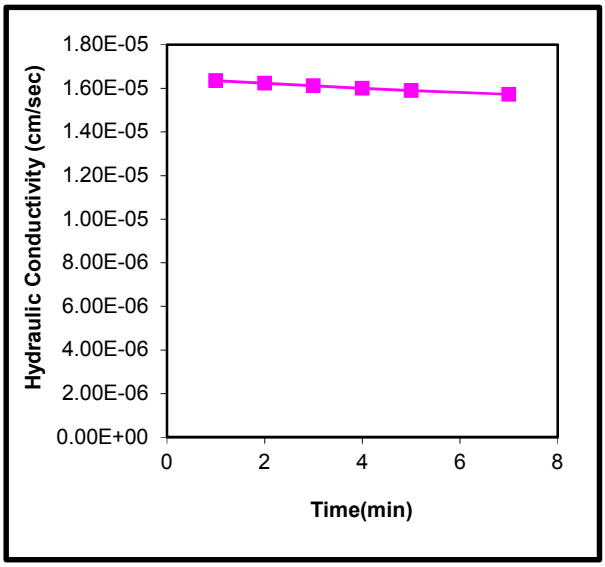
				Before	After
Diameter (d)	2.40	in			
Sample Area (A)	4.52	in²	Wt. Wet Soil+Container(gms)	21.95	601.82
Length (L)	3.09	in	Wt. Dry Soil+Container(gms)	20.30	516.13
Weight Before	413.26	g	Wt. Container (gms)	2.58	143.51
Wet Density	112.48	pcf	Moisture, (%)	9.31	23.00
Dry Density	102.90	pcf	Degree of Saturation	39	97
Confining Pressure	5	psi			

SATURATION AND CONSOLIDATION PHASES

B-value Check	Initial	Final	Diff	B-value
Cell Pressure,psi	35.0	40.0	5.0	0.96
Back Pressure,psi	30.0	34.8	4.8	

Consolidation Data					
		Volume Reading (cc)			
Date	Time	Bot	Top	Total	ΔV

FLOW DATA AND CALCULATIONS



Water Temp. °C, T_1= 20			Water Temp. °C, T_2= 20			
Δt (min)	Head (psi)	Burette Factor	ΔQ (cc)	Δh (cm)	Δh/L	k (cm/s)
0	2.0	1	0.0	130.4269	16.6	0
1.00	2.0	1	0.48	130.9019	16.7	1.64E-05
1.00	2.0	1	0.47	131.8519	16.8	1.62E-05
1.00	2.0	1	0.48	132.8019	16.9	1.61E-05
1.00	2.0	1	0.48	133.7519	17.0	1.60E-05
1.00	2.0	1	0.48	134.7019	17.1	1.59E-05
2.00	2.0	1	0.95	136.1269	17.3	1.57E-05

Hydraulic Conductivity, k_{20} (cm/sec): 1.61E-05

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FLEXIBLE WALL HYDRAULIC CONDUCTIVITY TEST
ASTM D5084 Method A-Constant Head

Project Name:	Vista Grande Park		Tested by	ST	Date 03/17/20
Project No.:	197-2019-0050 A2 GEO		Calculated by	JP	Date 03/18/20
Boring No.:	B-104		Checked by	AP	Date 03/19/20
Sample No.:	SK-1	Depth (ft.): 2.5-4.0			
Soil Description:	Sandy Clay				
Test Condition:	Remolded to 90% RC at 120% of OMC				
	Confining Pressure = 5 psi				
Remarks:					

INITIAL CONDITION OF SPECIMEN

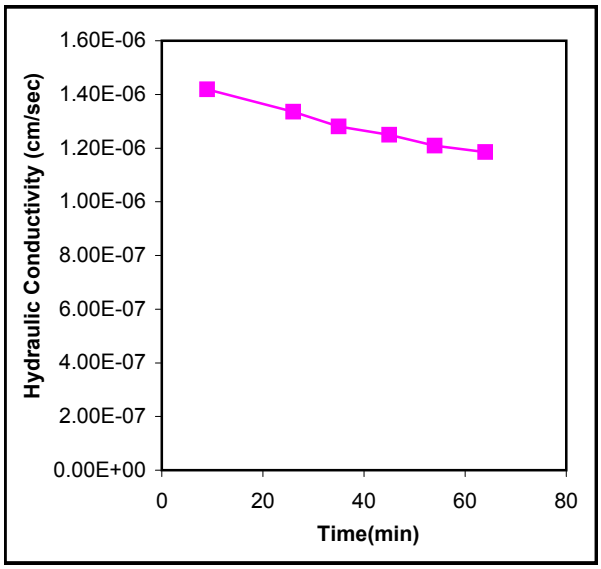
				Before	After
Diameter (d)	2.42	in			
Sample Area (A)	4.58	in²	Wt. Wet Soil+Container(gms)	288.28	611.77
Length (L)	3.00	in	Wt. Dry Soil+Container(gms)	278.02	523.1
Weight Before	441.20	g	Wt. Container (gms)	218.16	149.32
Wet Density	122.29	pcf	Moisture, (%)	17.14	23.72
Dry Density	104.40	pcf	Degree of Saturation	75	104

SATURATION AND CONSOLIDATION PHASES

B-value Check	Initial	Final	Diff	B-value
Cell Pressure,psi	35.0	40.0	5.0	0.98
Back Pressure,psi	30.0	34.9	4.9	

Consolidation Data					
		Volume Reading (cc)			
Date	Time	Bot	Top	Total	ΔV
					N/A

FLOW DATA AND CALCULATIONS



Water Temp. °C, T_1= 20			Water Temp. °C, T_2= 20			
Δt (min)	Head (psi)	Burette Factor	ΔQ (cc)	Δh (cm)	Δh/L	k (cm/s)
0	3.1	1	0.0	202.056	26.5	0
9.00	3.1	1	0.60	202.656	26.6	1.42E-06
17.00	3.1	1	1.08	204.331	26.8	1.34E-06
9.00	3.1	1	0.55	205.956	27.0	1.28E-06
10.00	3.1	1	0.60	207.106	27.2	1.25E-06
9.00	3.1	1	0.53	208.231	27.3	1.21E-06
10.00	3.1	1	0.57	209.331	27.5	1.19E-06

Hydraulic Conductivity, k_{20} (cm/sec): 1.28E-06

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FLEXIBLE WALL HYDRAULIC CONDUCTIVITY TEST
ASTM D5084 Method A-Constant Head

Client:	Tetra Tech		Tested by	ST	Date 02/25/20
Project Name:	Vista Grande Park		Calculated by	JP	Date 02/27/20
Project No.:	197-2019-0050 A2 GEO		Checked by	AP	Date 02/28/20
Boring No.:	B-105				
Sample No.:	R-2	Depth (ft.): 3.5-4.0			
Soil Description:	Sandy Clay				
Sample Type:	Mod Cal				

INITIAL CONDITION OF SPECIMEN

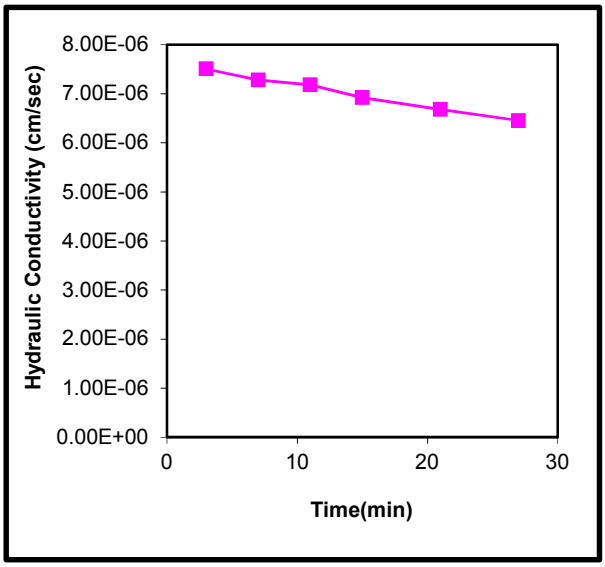
				Before	After
Diameter (d)	2.40	in			
Sample Area (A)	4.54	in²	Wt. Wet Soil+Container(gms)	37.55	606.58
Length (L)	3.03	in	Wt. Dry Soil+Container(gms)	33.68	524.59
Weight Before	429.56	g	Wt. Container (gms)	2.56	149.46
Wet Density	119.04	pcf	Moisture, (%)	12.44	21.86
Dry Density	105.88	pcf	Degree of Saturation	57	100
Confining Pressure	5	psi			

SATURATION AND CONSOLIDATION PHASES

B-value Check	Initial	Final	Diff	B-value
Cell Pressure,psi	35.0	40.0	5.0	0.98
Back Pressure,psi	30.0	34.9	4.9	

Consolidation Data					
		Volume Reading (cc)			
Date	Time	Bot	Top	Total	ΔV

FLOW DATA AND CALCULATIONS



Water Temp. °C, T_1= 19.3			Water Temp. °C, T_2= 19.3			
Δt (min)	Head (psi)	Burette Factor	ΔQ (cc)	Δh (cm)	Δh/L	k (cm/s)
0	1.0	1	0.0	63.18846	8.2	0
3.00	1.0	1	0.32	63.51346	8.3	7.51E-06
4.00	1.0	1	0.42	64.26346	8.3	7.28E-06
4.00	1.0	1	0.42	65.11346	8.5	7.18E-06
4.00	1.0	1	0.42	65.95346	8.6	6.92E-06
6.00	1.0	1	0.61	66.97846	8.7	6.68E-06
6.00	1.0	1	0.60	68.18846	8.9	6.46E-06

Hydraulic Conductivity, k_{20} (cm/sec): 7.13E-06

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

EXPANSION INDEX TEST RESULTS

ASTM D 4829

Client Name: Tetra Tech
Project Name: Vista Grande Park
Project No.: BAS 19-142E

AP Job No.: 19-0910
Date: 09/11/19

Boring No.	Sample No.	Depth (ft)	Soil Description	Molded Dry Density (pcf)	Molded Moisture Content (%)	Init. Degree Saturation (%)	Measured Expansion Index	Corrected Expansion Index
B-10	SK-1	0-5	Clayey Sand	104.5	11.8	51.8	66	68

ASTM EXPANSION CLASSIFICATION

Expansion Index	Classification
0-20	V. Low
21-50	Low
51-90	Medium
91-130	High
>130	V. High

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

CORROSION TEST RESULTS

Client Name: Tetra Tech
Project Name: Vista Grande Park
Project No.: BAS 19-142E

AP Job No.: 19-0910
Date: 09/11/19

Boring No.	Sample No.	Depth (feet)	Soil Type	Minimum Resistivity (ohm-cm)	pH	Sulfate Content (ppm)	Chloride Content (ppm)
B-9	SK-1	0-5	SC	2032	9.0	84	37

NOTES: Resistivity Test and pH: California Test Method 643
Sulfate Content : California Test Method 417
Chloride Content : California Test Method 422
ND = Not Detectable
NA = Not Sufficient Sample
NR = Not Requested

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

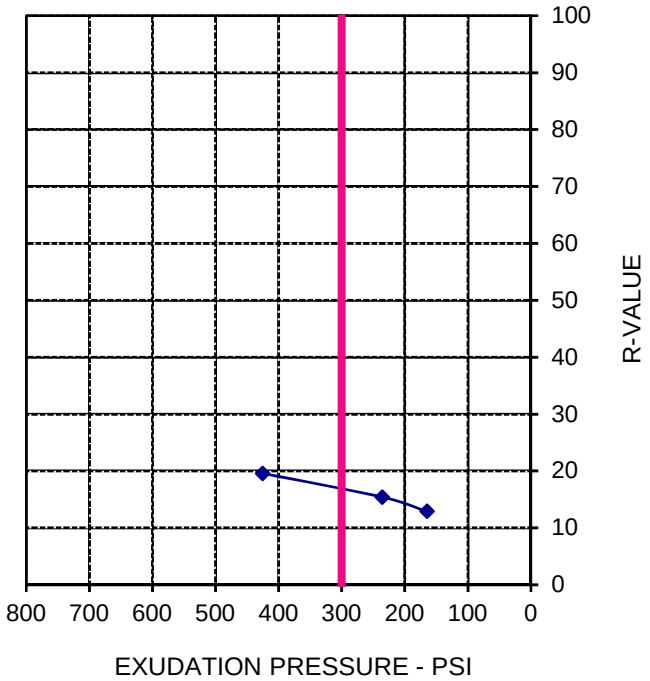
R-VALUE TEST DATA

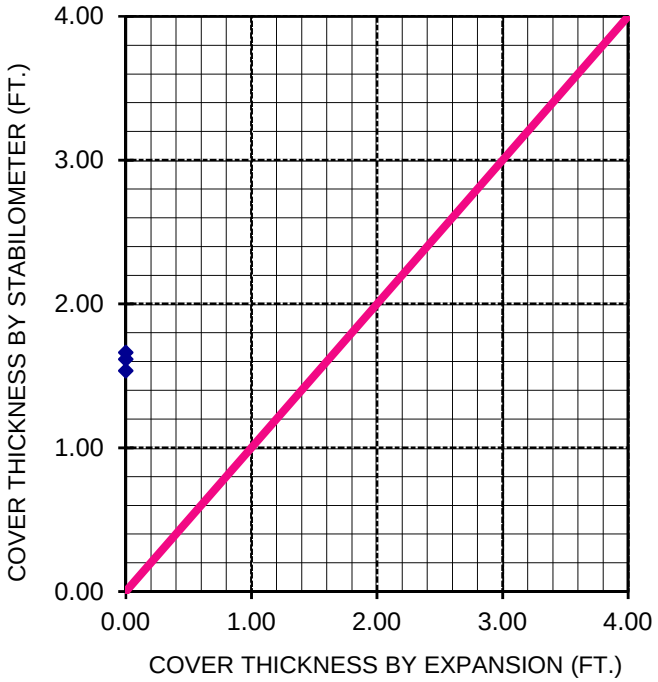
ASTM D2844

Project Name:	Vista Grande Park	Tested By:	ST	Date:	09/09/19
Project Number:	BAS 19-142E	Computed By:	KM	Date:	09/11/19
Boring No.:	B-10	Checked By:	AP	Date:	09/12/19
Sample No.:	SK-1	Depth (ft.):	0-5		
Location:	N/A				
Soil Description:	Clayey Sand				

Mold Number	A	B	C	
Water Added, g	39	19	0	
Compact Moisture(%)	20.6	18.2	16.0	
Compaction Gage Pressure, psi	60	70	160	
Exudation Pressure, psi	165	236	425	
Sample Height, Inches	2.5	2.5	2.3	
Gross Weight Mold, g	2978	2972	2960	
Tare Weight Mold, g	1967	1966	1968	
Net Sample Weight, g	1011	1006	993	
Expansion, inchesx10^{-4}	0	0	0	
Stability 2,000 (160 psi)	59/127	56/124	50/114	
Turns Displacement	4.38	3.98	3.53	
R-Value Uncorrected	13	15	22	
R-Value Corrected	13	15	20	
Dry Density, pcf	101.6	103.1	112.7	
Traffic Index	8.0	8.0	8.0	
G.E. by Stability	1.66	1.62	1.54	
G.E. by Expansion	0.00	0.00	0.00	

R-VALUE	By Exudation:	17
	By Expansion:	*N/A
	At Equilibrium: (by Exudation)	17
Remarks	Gf = 1.34, and 1.4 % Retained on the ¾" *Not Applicable	





Appendix B-2

Geotechnical Professionals, Inc.

Results of Laboratory Testing

APPENDIX C

LABORATORY TESTS

INTRODUCTION

Representative undisturbed soil samples and bulk samples were carefully packaged in the field and sealed to prevent moisture loss. The samples were then transported to our Cypress office for examination and testing assignments. Laboratory tests were performed on selected representative samples as an aid in classifying the soils and to evaluate the physical properties of the soils. Detailed descriptions of the laboratory tests are presented below under the appropriate test headings. Test results are presented in the figures that follow.

MOISTURE CONTENT AND DRY DENSITY

Moisture content and dry density were determined from a number of the ring samples. The samples were first trimmed to obtain volume and wet weight and then were dried in accordance with ASTM D 2216. After drying, the weight of each sample was measured, and moisture content and dry density were calculated. Moisture content and dry density values are presented on the boring logs in Appendix B.

POCKET PENETROMETER

Pocket Penetrometer tests were performed on select soils to determine the strength and consistency of the soil. Pocket Penetrometer values are presented on the boring logs in Appendix B.

GRAIN SIZE DISTRIBUTION

Two samples of the soil cover over the landfill were dried, weighed, soaked in water until individual soil particles were separated, and then washed on the No. 200 sieve. That portion of the material retained on the No. 200 sieve was oven-dried and weighed to determine the percentage of the material passing the No. 200 sieve. A summary of the percentages passing the No. 200 sieve is presented below.

BORING NO.	DEPTH (ft)	SOIL DESCRIPTION	PERCENT PASSING No. 200 SIEVE
B-1	2	Sandy Clay (CL)	55
B-2	2	Sandy Clay (CL)	75

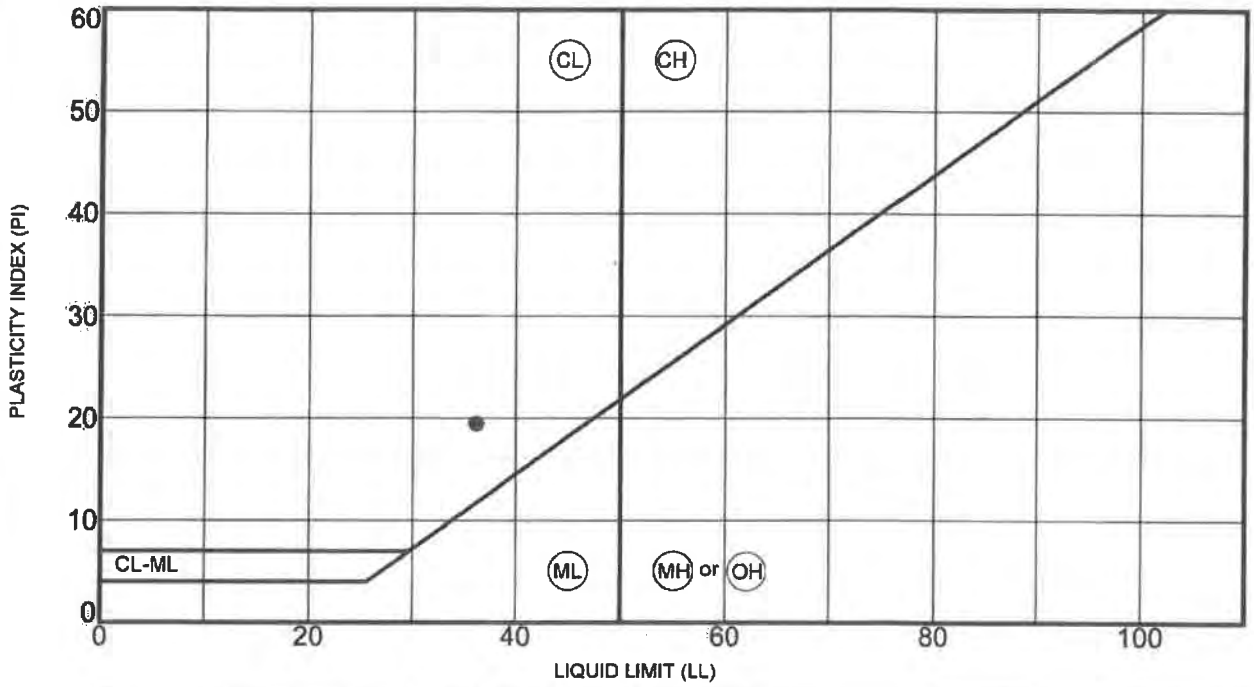
ATTERBERG LIMITS

The plasticity characteristics of the cohesive soil cover at the site were investigated by performing Liquid Limit and Plastic Limit tests in accordance with ASTM D 4318. The results of the Atterberg Limits tests are presented in Figure C-1.

COMPACTION TEST

The maximum density and optimum moisture of a representative sample of the surficial soils (landfill cover) was performed in accordance with ASTM D 1557. The test results are presented below:

BORING NO.	DEPTH (ft)	SOIL DESCRIPTION	MAXIMUM DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)
B-1	0-5	Sandy Clay (CL)	127	10.0



	SAMPLE LOCATION		LL	PL	PI	Fines, %	Classification
●	B-1	2.0	36	17	19	55	SANDY CLAY (CL)

PROJECT: VISTA GRANDE PARK PROJECT NO. 2724.I

GPI

ATTERBERG LIMITS TEST RESULTS

FIGURE C-1

Appendix C

Drilling Soil Waste
Environmental Characterization and Disposal Records

US ecology

WASTE/MATERIAL PROFILE FORM

☑ US Ecology Nevada(Beatty) 800-239-3943
☐ US Ecology Idaho (GrandView) 800-274-1516 **Ref. ID #:** 7-A29YZ
☐ US Ecology Texas (Robstown) 800-242-3209
☐ US Ecology Michigan (Detroit) 800-396-3265 **PROFILE #:**

A. GENERATOR INFORMATION

1. Generator: VISTA GRANDE PARK		☐ Billing Information is same. ☐ P.O required	
2. Facility Address: 1100 W. LAMBERT RD.		11. Customer	BELSHIRE ENVIRONMENTAL SERVICES
LA HABRA, CA 90631		12. Billing Company:	BELSHIRE ENVIRONMENTAL SERVICES
3. Mailing Address:	110 EAST LA HABRA BLVD.	13. Billing Address:	25971 TOWNE CENTER DR
4. City/State/Zip:	LA HABRA, CA,90633	14. City/State/Zip:	FOOTHILL RANCH, CA,92610-2462
5. Technical Contact:	.	15. Billing Contact:	LARRY MOOTHART
6. Phone: (909) 860-7777	7. Fax:	16. Phone: (949) 460-5200	17. Fax (949) 460-5210
8. Generator Status: ☐ VSQG/CESQG ☐ SQG ☐ LQG ☑ N/A		18. Email:	
9. EPA ID#:		19. State ID#:	

10. NAICS/SIC Codes:	71219					

B. SHIPPING INFORMATION

1. DOT Shipping Name: N/A, NON-DOT REGULATED WASTE MATERIAL, N/A, PG-N/A
Not Otherwise Specified (Waste or Chemical):

2. Primary / Secondary Haz Class : N/A /	3. UN/NA # : N/A	4. Packaging Group : N/A	5. RQ :

6. Container Type: ☐ Bulk ☐ Totes ☐ Pallet ☐ Boxes ☑ Drums ☐ Other, Desc

7. Frequency: ☐ Year ☐ Quarterly ☐ Monthly ☑ 1 Time ☐ Other, Desc

8. Shipment: Size: 55G Quantity: 1

9. Waste Import: ☐ Yes ☑ No
(If Yes, Complete Waste Import Supplement)

C. GENERAL MATERIAL & REGULATORY INFORMATION

1. Common name : NON-HAZARDOUS SOIL AND DEBRIS

2. Process generating : GEOTECHNICAL INVESTIGATION AT A CITY PARK WITH SOME REFUSE DEBRIS

3. Describe physical appearance : SOIL, GLASS, WOOD, DEBRIS

4. Odor : ☑ None ☐ Slight ☐ Strong

5. Physical State ☐ Liquid ☐ Sludge/Slurrry ☑ Solid

6. Describe Color VARIES

7. Liquid Phases: ☐ Single ☐ Double Layer ☐ Multi-Layer

8. Knowledge is from: ☑ Lab Analysis ☐ MSDS ☐ Process/Generator Knowledge

9. Waste/Material Type (US Ecology Texas Customers Only): ☑ N/A ☐ Industrial ☐ Non-Industrial

10. Restricted under EPA and Land disposal Restrictions (§268) ? ☐ Yes ☑ No

11. If LDR "Yes" : ☐ Wastewater ☐ Nonwastewater ☐ Debris

12. Alt. Standards for soil ☐ Yes ☑ No

13. Is the material RCRA hazardous waste containing benzene and originating at a Petroleum Refinery (SIC 2911), Chemical Manufacturing Plant (SIC 2800 thru 2899) or Coke by-Product Recovery Plant(SIC 2322)? *(If Yes complete Benzene Waste/Material Operations Supplement form and Thermal Supplement form):* ☐ Yes ☑ No

14. VO Conc (§264.1083): ☑ <500ppmw ☐ ≥ 500ppmw

15. Has it been treated after point of generation? ☐ Yes ☑ No

16. CERCLA Regulated (Superfund) Waste: ☐ Yes ☑ No

17. Butadiene waste regulated by §63 Subpart xx: ☐ Yes ☑ No

18. Waste contains UHC constituent(s) (§268.48) , above a treatment standard, other than those for which the waste exhibits a characteristic. (If yes, list all UHC's in Section D): ☐ Yes ☑ No

19. Waste exempt from definition of "solid waste" or "hazardous waste" (if Yes,list reference 40 CFR): ☐ Yes ☑ No

20. State Waste Codes:	NONE					
21. RCRA Waste Codes:	NONE					

22. Source code: G19 23. Form Code: W319

D. COMPOSITION *(use additional form if necessary)*

Values are: ☐ TCLP ☑ Totals

Constituents	Test Method	Units	Range Total>=100% Typical	Min	Max
SOIL	Totals	%	85.00	85.00	90.00
GLASS	Totals	%	5.00	5.00	10.00
WOOD	Totals	%	5.00	5.00	10.00
DEBRIS	Totals	%	5.00	5.00	10.00

E. CHARACTERISTICS

1. Oxidizer	☐ Yes	☑ No	9. Reactive Sulfides ppm	☐ Yes	☑ No
2. Explosive	☐ Yes	☑ No	10. Reactive Cyanides ppm	☐ Yes	☑ No
3. Organic Peroxide	☐ Yes	☑ No	11. Water/Air Reactive	☐ Yes	☑ No
4. Shock Sensitive	☐ Yes	☑ No	12. Thermally Unstable	☐ Yes	☑ No
5. Tires	☐ Yes	☑ No	13. TSCA regulated PCB waste *(Control sheet required with shipment)*	☐ Yes	☑ No
6. Pyrophoric	☐ Yes	☑ No	14. Medical/Infectious waste	☐ Yes	☑ No
7. Compressed Gas	☐ Yes	☑ No	15. Radioactive *(If yes, complete profile Supplement for Radioactive waste)*	☐ Yes	☑ No
8. Halogenated Organics	☐ Yes	☑ No			

16. Hazardous Secondary Material (HSM) ? ☐ Yes ☑ no

17. Possibility of incidental liquids from transportation ? ☐ Yes ☑ No

18. Is waste/material a solid using the paint filter test ? ☑ Yes ☐ No

19. **pH:** (If solid, what is pH if mixed with water?) *Range* ____ *To* ____ *Typical* ____

☐ ≤ 2 ☑ 2 < 12.5 ☐ ≥ 12.5

20. Flash Point : NA °F ☐ *<140°F*

21. Is the waste/material oil bearing from Petroleum Refining, Production or Transportation practices? ☑ N/A ☐ Yes ☑ No

F. GENERATOR'S CERTIFICATION

☑ Yes ☐ No **I certify this waste/material may be disposed without further treatment.**

☐ Yes ☑ N/A **I certify this waste/material meets all requirements of legitimate recycling of Hazardous Secondary Materials under 40 CFR 260.43 and/or I am complying with the conditions for generators using the verified recycler exclusion.**

I authorize US Ecology to correct inconsistencies on the waste/material profile form that impact management decisions with my oral or written authorization. US Ecology will require re-submittal of the waste/material profile information if substantial changes are determined necessary. I understand waste/material that does not conform to specifications described in this profile may be rejected by US Ecology unless other contractual arrangements have been agreed to by both parties. I certify, under penalty of law, that I am familiar with this waste/material stream through analysis and/or process knowledge, and that all information provided is true, accurate, representative and complete, that all known or suspected hazards have been disclosed, and that this form was completed in accordance with the instructions provided.

Print Name	Signature	Title	Date
Shawn Morrish		Geologist	9/23/19

Adelanto, CA Soil Recycling Facility	Soil Safe (Formerly TPST) SOIL DATA AND CERTIFCATION SHEET	DATE: 9/17/2019

Generator (propery owner):

City of La Habra
110 East La Habra Blvd.
La Habra, CA 90633

Consultant/Engineering Firm:

Belshire Environmental Services, Inc.
25971 Towne Centre Dr
Foothill Ranch CA 92610
Tel: (949) 460-5200
Fax: (949) 460-5210

X **Invoice BESI**
Invoice Generator
Invoice Consultant

Testing Laboratory:
Enthalpy

Sampling Procedures:
Composite Sample

Site History: Please list SITE NAME ADDRESS (including zip code), describe contamination type, contamination source, how contamination was stored, and past activities at site.-Attach additional documents)

Site Name & Address:
Vista Grande Park
1100 W. LAMBERT RD.
LA HABRA, CA 90631

BESI: 310934
Site No: 1100WLAM
~~**Site Contact:**~~
~~**Consultant:**~~
~~**Contact**~~

Source of contamination (ust, ast, etc...): No known source
(please list gas, diesel, combo, waste oil, etc...) Geotechnical Drilling

X **NON-HAZ** **HAZ**

ESTIMATED QUANTITY
Tons
3 Drums

Please check appropate box below and attach all required analytical reports. Unless otherwise noted, composite samples should be collected with the following frequency: 1sample for 100 cubic yards or less ; 3 samples for 500 cu yds or less ; 5 samples for 1000 cu yds 1 additional sample for each additional 500cu yds greater than 1000 cu yds

☐

I/we certify that the soil referenced herein is contaminated soley by Virgin petroleum products from leaking underground storage tank(s).

Attached is analytical data from state certified lab for the following

1) Total Petroleum Hydrocarbons (TPH, EPA 8015 Modified)

2) Benzene/Toluene/Ethylbenzene/xylene (BTEX, EPA 8020)

X

I/We certified that some or all of the contaminants in the soil referenced herein is waste oil, or some other non-virgin petroleum product, or virgin petroleum product from something other than a leaking underground storage tank.
Attached is analytical data from a state certified lab for the following:

1) Total metals concentration for a thru q below (TTLC test)

a) Antimony	g)Cobalt	m) Selenium
b) Arsenic	h)Copper	n) Silver
c) Barium	I) Lead	o) Thalium
d) Berylium	j) Mercury	p) Vanadium
e) Cadmium	k) Molybdenum	q) Zinc
f) Chromium	l) Nickel	

Note: If any item a thru q is greater than 10 times its Soluble Threshold Limit concentration (STLC) the soluble metal concentration must be determined by the Waste Extraction Test procedure.

2) TPH by:

EPA 418.1 or
EPA 8015 modified

3) BTEX/VOC by:

EPA 8020 EPA 8010
or EPA 8260(combines above)

4) PCB'S(waste oil only)
5) Additional analytical data as required.

No soils referenced herein may be delivered until the forgoing certificate is received and approved by the facility, and they issues manifests and assigns an approval number. If any soils delivered to the facility are found to be "Hazardous Waste" pursuant to federal or state regulations, the client shall be solely responsible for their removal. If the client fails to remove such soils, the facility, acting as client's agent, may arrange for such removal at client's expense. This is a complete and accurate description of the soil referenced herein; no deliberate or willful omissions have been made and all known or suspected hazards have been disclosed herein. I/We certify that the soil is not "hazardous" as defined by U.S. Department of Transportation (DOT), U.S. Environmental Protection Agency (EPA), State or local regulations. I/We further certify that the soils referenced herein contain no free liquids. All analysis reports attached.

Generator's Authorized Signatory: _____ **Date:** 9/23/19

Print Name: Shawn Mottish **Title:** Geologist

Environmental Firm Signatory: _____ **Date:** 9/17/2019

Print Name: Larry Moothart **Title:** Manager

Manifest

SOIL SAFE OF CA – TPST
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transport Truck #:	Facility #:	Approval Number:	Load #
/ /			A07		

Generator and/or Consultant

Generator's Name and Billing Address: CITY OF LA HABRA 110 EAST LA HABRA BLVD. LA HABRA, CA 90633	Generator's Phone #:	
	Person to Contact:	
	FAX#:	Customer Account Number
Consultant's Name and Billing Address:	Consultant's Phone #:	
	Person to Contact:	
	FAX#:	Customer Account Number
Generation Site (Transport from): *(name & address)* VISTA GRANDE PARK 1100 W. LAMBERT RD. LA HABRA, CA 90631	Site Phone #:	
	Person to Contact:	
	FAX#:	
Designated Facility (Transport to): *(name & address)* SOIL SAFE 12328 HIBISCUS AVENUE ADELANTO, CA 92301	Facility Phone #: (800) 862-8001	
	Person to Contact: JOE PROVANSAL	
	FAX#: (760) 246-8004	
Transporter Name and Mailing Address: BELSHIRE 26971 TOWNE CENTRE DRIVE FOOTHILL RANCH, CA 92610 BESI: 310934	Transporter's Phone #: 949-460-5200	CAR000183913
	Person to Contact: LARRY MOOTHART	450647
	FAX#: 949-460-5210	Customer Account Number

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ❑ Organic ❑ Clay ❑ Other ❑	0 - 10% ❑ 10 - 20% ❑ 20% - over ❑	Gas ❑ Diesel ❑ Other ❑	003 DM	Soil			
Sand ❑ Organic ❑ Clay ❑ Other ❑	0 - 10% ❑ 10 - 20% ❑ 20% - over ❑	Gas ❑ Diesel ❑ Other ❑					

List any exception to items listed above: Scale Ticket #

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils descried in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ❑ Consultant ❑	Signature and date:	Month	Day	Year
Shawn Morrill		9	23	19

Transporter

Transporter's certification: I/We acknowledge receipt of the soil referenced above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that the soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Thomas Buch		9	25	19

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
J. PROVANSAL / BILL BISHOP / BARRY MEEK	

Please print or type.

GENERATOR/CONSULTANTS COPY

NO. 754386

NON-HAZARDOUS WASTE DATA FORM

BESI # 310934

GENERATOR

Generator's Name and Mailing Address
CITY OF LA HABRA
110 EAST LA HABRA BLVD.
LA HABRA, CA 90633

Generator's Site Address (if different than mailing address)
VISTA GRANDE PARK
1100 W. LAMBERT RD.
LA HABRA, CA 90631

Generator's Phone:

Container type removed from site:
☒ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck
☐ Other

Quantity 001

Container type transported to receiving facility:
☒ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck
☐ Other

Quantity 1 Volume 350 LBS

WASTE DESCRIPTION NON-HAZARDOUS SOLID

GENERATING PROCESS GEOTECHNICAL DRILLING

	COMPONENTS OF WASTE	PPM	%
1.	SOIL		85-90%
2.	GLASS		5-10%
3.	WOOD		5-10%
4.	DEBRIS		5-10%

Waste Profile 07012 8043-15339 PROPERTIES: pH ____ ☐ SOLID ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER

HANDLING INSTRUCTIONS:

Generator Printed/Typed Name: Shawn Morrish | Signature | Month 9 | Day 23 | Year 19

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE | Phone# 949-460-5200

Transporter 1 Printed/Typed Name: Thomas Buck | Signature | Month 9 | Day 25 | Year 19

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name | Phone#

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
U.S. ECOLOGY, NEVADA OPERATIONS
HIGHWAY 95, 11 MILES S. OF BEATTY
BEATTY, NV 89003

Phone# 775-553-2203

Printed/Typed Name: Kenny Harrington | Signature | Month 10 | Day 16 | Year 19

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

1100WLAM
2154234

NO. 754386

NON-HAZARDOUS WASTE DATA FORM

BESI # 310934

GENERATOR

Generator's Name and Mailing Address
CITY OF LA HABRA
110 EAST LA HABRA BLVD.
LA HABRA, CA 90633

Generator's Site Address (if different than mailing address)
VISTA GRANDE PARK
1100 W. LAMBERT RD.
LA HABRA, CA 90631

Generator's Phone:

Container type removed from site:

XX ☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck

☐ Other _____

Quantity 001

Container type transported to receiving facility:

☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck

☐ Other _____

Quantity _____ Volume _____

WASTE DESCRIPTION NON-HAZARDOUS SOLID

GENERATING PROCESS GEOTECHNICAL DRILLING

COMPONENTS OF WASTE	PPM	%	COMPONENTS OF WASTE	PPM	%
1. SOIL		85-90%	3. WOOD		5-10%
2. GLASS		5-10%	4. DEBRIS		5-10%

Waste Profile _____ PROPERTIES: pH _____ ☐ SOLID ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER _____

HANDLING INSTRUCTIONS: _____

Generator Printed/Typed Name	Signature	Month	Day	Year
Shari Morris		9	25	19

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE — Phone#: 949-460-5200

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
Thomas Buck		9	25	19

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name: _____ Phone#: _____

Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
U.S. ECOLOGY, NEVADA OPERATIONS
HIGHWAY 95, 11 MILES S. OF BEATTY
BEATTY, NV 89003

Phone#: 775-553-2203

Printed/Typed Name	Signature	Month	Day	Year

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

WASTE/MATERIAL PROFILE FORM

☑ US Ecology Nevada(Beatty)	800-239-3943	
☐ US Ecology Idaho (GrandView)	800-274-1516	**Ref. ID #:** 7-A29YZ
☐ US Ecology Texas (Robstown)	800-242-3209	
☐ US Ecology Michigan (Detroit)	800-396-3265	**PROFILE #:**

A. GENERATOR INFORMATION

1. Generator: VISTA GRANDE PARK	☐ Billing Information is same. ☐ P.O required
2. Facility Address: 1100 W. LAMBERT RD.	**11. Customer** BELSHIRE ENVIRONMENTAL SERVICES
LA HABRA, CA 90631	**12. Billing Company:** BELSHIRE ENVIRONMENTAL SERVICES
3. Mailing Address: 110 EAST LA HABRA BLVD.	**13. Billing Address:** 25971 TOWNE CENTER DR
4. City/State/Zip: LA HABRA, CA,90633	**14. City/State/Zip:** FOOTHILL RANCH, CA,92610-2462
5. Technical Contact: .	**15. Billing Contact:** LARRY MOOTHART
6. Phone: (909) 860-7777 **7. Fax:**	**16. Phone:** (949) 460-5200 **17. Fax** (949) 460-5210
8. Generator Status: ☐ VSQG/CESQG ☐ SQG ☐ LQG ☑ N/A	**18. Email:**
9. EPA ID#:	**19. State ID#:**

10. NAICS/SIC Codes:	71219					

B. SHIPPING INFORMATION

1. DOT Shipping Name: N/A, NON-DOT REGULATED WASTE MATERIAL, N/A, PG-N/A

Not Otherwise Specified (Waste or Chemical):

2. Primary / Secondary Haz Class : N/A /	**3. UN/NA # :** N/A	**4. Packaging Group :** N/A	**5. RQ :**

6. Container Type: ☐ Bulk ☐ Totes ☐ Pallet ☐ Boxes ☑ Drums ☐ Other, Desc

7. Frequency: ☐ Year ☐ Quarterly ☐ Monthly ☑ 1 Time ☐ Other, Desc

8. Shipment: **Size:** 55G **Quantity:** 1

9. Waste Import: ☐ Yes ☑ No

(If Yes, Complete Waste Import Supplement)

C. GENERAL MATERIAL & REGULATORY INFORMATION

1. Common name : NON-HAZARDOUS SOIL AND DEBRIS

2. Process generating : GEOTECHNICAL INVESTIGATION AT A CITY PARK WITH SOME REFUSE DEBRIS

3. Describe physical appearance : SOIL, GLASS, WOOD, DEBRIS

4. Odor : ☑ None ☐ Slight ☐ Strong

5. Physical State ☐ Liquid ☐ Sludge/Slurrry ☑ Solid

6. Describe Color VARIES

7. Liquid Phases: ☐ Single ☐ Double Layer ☐ Multi-Layer

8. Knowledge is from: ☑ Lab Analysis ☐ MSDS ☐ Process/Generator Knowledge

9. Waste/Material Type (US Ecology Texas Customers Only): ☑ N/A ☐ Industrial ☐ Non-Industrial

10. Restricted under EPA and Land disposal Restrictions (§268) ? ☐ Yes ☑ No

11. If LDR "Yes" : ☐ Wastewater ☐ Nonwastewater ☐ Debris

12. Alt. Standards for soil ☐ Yes ☑ No

13. Is the material RCRA hazardous waste containing benzene and originating at a Petroleum Refinery (SIC 2911), Chemical Manufacturing Plant (SIC 2800 thru 2899) or Coke by-Product Recovery Plant(SIC 2322)? ☐ Yes ☑ No ***(If Yes complete Benzene Waste/Material Operations Supplement form and Thermal Supplement form):***

14. VO Conc (§264.1083): ☑ <500ppmw ☐ ≥ 500ppmw

15. Has it been treated after point of generation? ☐ Yes ☑ No

16. CERCLA Regulated (Superfund) Waste: ☐ Yes ☑ No

17. Butadiene waste regulated by §63 Subpart xx: ☐ Yes ☑ No

18. Waste contains UHC constituent(s) (§268.48) , above a treatment standard, other than those for which the waste exhibits a characteristic. (If yes, list all UHC's in Section D): ☐ Yes ☑ No

19. Waste exempt from definition of "solid waste" or "hazardous waste" (if Yes,list reference 40 CFR): ☐ Yes ☑ No

20. State Waste Codes:	NONE					
21. RCRA Waste Codes:	NONE					

22. Source code: G19 **23. Form Code:** W319

D. COMPOSITION *(use additional form if necessary)*

Values are: ☐ TCLP ☑ Totals — **Range Total>=100%**

Constituents	Test Method	Units	Typical	Min	Max
SOIL	Totals	%	85.00	85.00	90.00
GLASS	Totals	%	5.00	5.00	10.00
WOOD	Totals	%	5.00	5.00	10.00
DEBRIS	Totals	%	5.00	5.00	10.00

E. CHARACTERISTICS

1. Oxidizer	☐ Yes	☑ No	9. Reactive Sulfides	ppm	☐ Yes	☑ No
2. Explosive	☐ Yes	☑ No	10. Reactive Cyanides	ppm	☐ Yes	☑ No
3. Organic Peroxide	☐ Yes	☑ No	11. Water/Air Reactive		☐ Yes	☑ No
4. Shock Sensitive	☐ Yes	☑ No	12. Thermally Unstable		☐ Yes	☑ No
5. Tires	☐ Yes	☑ No	13. TSCA regulated PCB waste *(Control sheet required with shipment)*		☐ Yes	☑ No
6. Pyrophoric	☐ Yes	☑ No	14. Medical/Infectious waste		☐ Yes	☑ No
7. Compressed Gas	☐ Yes	☑ No	15. Radioactive *(If yes, complete profile*		☐ Yes	☑ No
8. Halogenated Organics	☐ Yes	☑ No	*Supplement for Radioactive waste)*			

16. Hazardous Secondary Material (HSM) ?	☐ Yes	☑ No	
17. Possibility of incidental liquids from transportation ?	☐ Yes	☑ No	
18. Is waste/material a solid using the paint filter test ?	☑ Yes	☐ No	

19. **pH:** (If solid, what is pH if mixed with water?) *Range* ____ *To* ____ *Typical* ____

☐ ≤ 2 ☑ 2 < 12.5 ☐ ≥ 12.5

20. **Flash Point :** NA °F ☐ *<140°F*

21. **Is the waste/material oil bearing from Petroleum Refining, Production or Transportation practices?** ☑ N/A ☐ Yes ☑ No

F. GENERATOR'S CERTIFICATION

☑ Yes ☐ No **I certify this waste/material may be disposed without further treatment.**

☐ Yes ☑ N/A **I certify this waste/material meets all requirements of legitimate recycling of Hazardous Secondary Materials under 40 CFR 260.43 and/or I am complying with the conditions for generators using the verified recycler exclusion.**

I authorize US Ecology to correct inconsistencies on the waste/material profile form that impact management decisions with my oral or written authorization. US Ecology will require re-submittal of the waste/material profile information if substantial changes are determined necessary. I understand waste/material that does not conform to specifications described in this profile may be rejected by US Ecology unless other contractual arrangements have been agreed to by both parties. I certify, under penalty of law, that I am familiar with this waste/material stream through analysis and/or process knowledge, and that all information provided is true, accurate, representative and complete, that all known or suspected hazards have been disclosed, and that this form was completed in accordance with the instructions provided.

Print Name	Signature	Title	Date

Enthalpy Analytical, LLC
931 W. Barkley Ave - Orange, CA 92868
Tel: (714)771-6900 Fax: (714)538-1209
www.enthalpy.com
info-sc@enthalpy.com

MONTROSE ENVIRONMENTAL

Client: Belshire Environmental Services, Inc.
Address: 25971 Towne Centre Drive
Foothill Ranch, CA 92610

Attn: Cindy Johnson

Comments: Vista Grande Park, 1100 W. Lambert Rd, La Habra
PO 310934

Lab Request: 419376
Report Date: 09/21/2019
Date Received: 09/13/2019
Client ID: 15318

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods. Methods accredited by NELAC are indicated on the report. This cover letter is an integral part of the final report.

Sample #	Client Sample ID
419376-001	Drum 1
419376-002	Drum 2
419376-003	Drum 3
419376-004	Composite (Drums 1-3)
419376-005	Drum 4

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

Report Review performed by: Patricia Mata, PM

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 45 days from date received.

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Matrix:	Solid	**Client:**	Belshire Environmental Services, Inc.	**Collector:**	Client
Sampled:	09/13/2019 07:15	**Site:**			
Sample #:	**419376-001**	**Client Sample #:**	Drum 1	**Sample Type:**	

Notes: Composite samples (3:1)

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method:	Prep Method:					QCBatchID:		
N/A	**N/A**	1						

Matrix:	Solid	**Client:**	Belshire Environmental Services, Inc.	**Collector:**	Client
Sampled:	09/13/2019 07:15	**Site:**			
Sample #:	**419376-002**	**Client Sample #:**	Drum 2	**Sample Type:**	

Notes: Composite samples (3:1)

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method:	Prep Method:					QCBatchID:		
N/A	**N/A**	1						

Matrix:	Solid	**Client:**	Belshire Environmental Services, Inc.	**Collector:**	Client
Sampled:	09/13/2019 07:15	**Site:**			
Sample #:	**419376-003**	**Client Sample #:**	Drum 3	**Sample Type:**	

Notes: Composite samples (3:1)

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method:	Prep Method:					QCBatchID:		
N/A	**N/A**	1						

Matrix:	Solid	**Client:**	Belshire Environmental Services, Inc.	**Collector:**	Client
Sampled:	09/13/2019 07:15	**Site:**			
Sample #:	**419376-004**	**Client Sample #:**	Composite (Drums 1-3)	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1206704		
Antimony	ND	1	3	mg/Kg		09/17/19	SBW	
Arsenic	**6.38**	1	1	mg/Kg		09/17/19	SBW	
Barium	**143**	1	1	mg/Kg		09/17/19	SBW	
Beryllium	ND	1	0.5	mg/Kg		09/17/19	SBW	
Cadmium	**1.29**	1	0.5	mg/Kg		09/17/19	SBW	
Chromium	**29.5**	1	1	mg/Kg		09/17/19	SBW	
Cobalt	**8.66**	1	0.5	mg/Kg		09/17/19	SBW	
Copper	**19.1**	1	1	mg/Kg		09/17/19	SBW	
Lead	**8.98**	1	1	mg/Kg		09/17/19	SBW	
Molybdenum	**2.72**	1	1	mg/Kg		09/17/19	SBW	
Nickel	**20.6**	1	1.5	mg/Kg		09/17/19	SBW	
Selenium	ND	1	3	mg/Kg		09/17/19	SBW	
Silver	ND	1	0.5	mg/Kg		09/17/19	SBW	
Thallium	ND	1	3	mg/Kg		09/17/19	SBW	
Vanadium	**49.7**	1	0.5	mg/Kg		09/17/19	SBW	
Zinc	**60.4**	1	5	mg/Kg		09/17/19	SBW	
Method: EPA 7471A *NELAC* Prep Method: EPA 7471A						QCBatchID: QC1206759		
Mercury	ND	1	0.14	mg/Kg	09/17/19	09/17/19	KLN	
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1206781		
TPH (C13 to C22)	ND	1	10	mg/Kg	09/18/19	09/19/19	TW	
TPH (C23 to C44)	**12**	1	10	mg/Kg	09/18/19	09/19/19	TW	
TPH (C6 to C12)	ND	1	10	mg/Kg	09/18/19	09/19/19	TW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*118*		*50-150*					
Method: EPA 8260B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1206685		
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,1,1-Trichloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,1,2-Trichloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,1-Dichloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,1-Dichloroethene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,1-Dichloropropene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,2,3-Trichloropropane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,2-Dibromoethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,2-Dichlorobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,2-Dichloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,2-Dichloropropane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,3-Dichlorobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,3-Dichloropropane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
1,4-Dichlorobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
2,2-Dichloropropane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
2-Butanone (MEK)	ND	1	100	ug/Kg		09/16/19	ZZ	P3
2-Chlorotoluene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
4-Chlorotoluene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
4-Isopropyltoluene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
4-Methyl-2-pentanone (MIBK)	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Acetone	ND	1	100	ug/Kg		09/16/19	ZZ	P3

Matrix:	Solid	**Client:**	Belshire Environmental Services, Inc.	**Collector:**	Client
Sampled:	09/13/2019 07:15	**Site:**			
Sample #:	**419376-004**	**Client Sample #:**	Composite (Drums 1-3)	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Allyl Chloride	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Benzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Bromobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Bromochloromethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Bromodichloromethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Bromoform	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Bromomethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Carbon Tetrachloride	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Chlorobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Chlorodibromomethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Chloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Chloroform	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Chloromethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
cis-1,2-Dichloroethene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
cis-1,3-dichloropropene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
cis-1,4-dichloro-2-butene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Dibromomethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Dichlorodifluoromethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Di-isopropyl ether (DIPE)	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Ethylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Ethyl-tertbutylether (ETBE)	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Hexachlorobutadiene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Isopropylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
m and p-Xylene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Methylene chloride	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Methyl-t-butyl Ether (MTBE)	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Naphthalene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
N-butylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
N-propylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
o-Xylene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Sec-butylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Styrene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
t-Butyl alcohol (TBA)	ND	1	10	ug/Kg		09/16/19	ZZ	P3
Tert-amylmethylether (TAME)	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Tert-butylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Tetrachloroethene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Toluene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
trans-1,2-dichloroethene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
trans-1,3-dichloropropene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
trans-1,4-dichloro-2-butene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Trichloroethene	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Trichlorofluoromethane	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Vinyl Chloride	ND	1	5	ug/Kg		09/16/19	ZZ	P3
Xylenes (Total)	ND	1	5	ug/Kg		09/16/19	ZZ	P3

Surrogate	*% Recovery*	*Limits*	*Notes*
1,2-Dichloroethane-d4 (SUR)	*99*	*70-145*	
4-Bromofluorobenzene (SUR)	*116*	*70-145*	
Dibromofluoromethane (SUR)	*104*	*70-145*	
Toluene-d8 (SUR)	*99*	*70-145*	

Matrix: Solid **Client:** Belshire Environmental Services, Inc. **Collector:** Client
Sampled: 09/13/2019 07:15 **Site:**
Sample #: 419376-005 **Client Sample #:** Drum 4 **Sample Type:**

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B NELAC Prep Method: EPA 3050B						QCBatchID: QC1206704		
Antimony	ND	1	3	mg/Kg		09/17/19	SBW	
Arsenic	**6.65**	1	1	mg/Kg		09/17/19	SBW	
Barium	**131**	1	1	mg/Kg		09/17/19	SBW	
Beryllium	ND	1	0.5	mg/Kg		09/17/19	SBW	
Cadmium	**1.11**	1	0.5	mg/Kg		09/17/19	SBW	
Chromium	**29.8**	1	1	mg/Kg		09/17/19	SBW	
Cobalt	**6.91**	1	0.5	mg/Kg		09/17/19	SBW	
Copper	**19.3**	1	1	mg/Kg		09/17/19	SBW	
Lead	**23.6**	1	1	mg/Kg		09/17/19	SBW	
Molybdenum	**2.60**	1	1	mg/Kg		09/17/19	SBW	
Nickel	**16.8**	1	1.5	mg/Kg		09/17/19	SBW	
Selenium	ND	1	3	mg/Kg		09/17/19	SBW	
Silver	ND	1	0.5	mg/Kg		09/17/19	SBW	
Thallium	ND	1	3	mg/Kg		09/17/19	SBW	
Vanadium	**40.5**	1	0.5	mg/Kg		09/17/19	SBW	
Zinc	**67.1**	1	5	mg/Kg		09/17/19	SBW	
Method: EPA 7471A NELAC Prep Method: EPA 7471A						QCBatchID: QC1206759		
Mercury	ND	1	0.14	mg/Kg	09/17/19	09/17/19	KLN	
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1206781		
TPH (C13 to C22)	**130**	1	10	mg/Kg	09/18/19	09/20/19	TW	
TPH (C23 to C44)	**410**	1	10	mg/Kg	09/18/19	09/20/19	TW	
TPH (C6 to C12)	ND	1	10	mg/Kg	09/18/19	09/20/19	TW	
Surrogate	*% Recovery*		*Limits*		*Notes*			
Triacontane (SUR)	*135*		*50-150*					
Method: EPA 8260B NELAC Prep Method: EPA 5030						QCBatchID: QC1206685		
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	
1,1,1-Trichloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	
1,1,2-Trichloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg		09/16/19	ZZ	
1,1-Dichloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	
1,1-Dichloroethene	ND	1	5	ug/Kg		09/16/19	ZZ	
1,1-Dichloropropene	ND	1	5	ug/Kg		09/16/19	ZZ	
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
1,2,3-Trichloropropane	ND	1	5	ug/Kg		09/16/19	ZZ	
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg		09/16/19	ZZ	
1,2-Dibromoethane	ND	1	5	ug/Kg		09/16/19	ZZ	
1,2-Dichlorobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
1,2-Dichloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	
1,2-Dichloropropane	ND	1	5	ug/Kg		09/16/19	ZZ	
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
1,3-Dichlorobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
1,3-Dichloropropane	ND	1	5	ug/Kg		09/16/19	ZZ	
1,4-Dichlorobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
2,2-Dichloropropane	ND	1	5	ug/Kg		09/16/19	ZZ	
2-Butanone (MEK)	ND	1	100	ug/Kg		09/16/19	ZZ	
2-Chlorotoluene	ND	1	5	ug/Kg		09/16/19	ZZ	
4-Chlorotoluene	ND	1	5	ug/Kg		09/16/19	ZZ	
4-Isopropyltoluene	ND	1	5	ug/Kg		09/16/19	ZZ	
4-Methyl-2-pentanone (MIBK)	ND	1	5	ug/Kg		09/16/19	ZZ	
Acetone	ND	1	100	ug/Kg		09/16/19	ZZ	

Matrix:	Solid	**Client:**	Belshire Environmental Services, Inc.	**Collector:**	Client
Sampled:	09/13/2019 07:15	**Site:**			
Sample #:	**419376-005**	**Client Sample #:**	Drum 4	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Allyl Chloride	ND	1	5	ug/Kg		09/16/19	ZZ	
Benzene	ND	1	5	ug/Kg		09/16/19	ZZ	
Bromobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
Bromochloromethane	ND	1	5	ug/Kg		09/16/19	ZZ	
Bromodichloromethane	ND	1	5	ug/Kg		09/16/19	ZZ	
Bromoform	ND	1	5	ug/Kg		09/16/19	ZZ	
Bromomethane	ND	1	5	ug/Kg		09/16/19	ZZ	
Carbon Tetrachloride	ND	1	5	ug/Kg		09/16/19	ZZ	
Chlorobenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
Chlorodibromomethane	ND	1	5	ug/Kg		09/16/19	ZZ	
Chloroethane	ND	1	5	ug/Kg		09/16/19	ZZ	
Chloroform	ND	1	5	ug/Kg		09/16/19	ZZ	
Chloromethane	ND	1	5	ug/Kg		09/16/19	ZZ	
cis-1,2-Dichloroethene	ND	1	5	ug/Kg		09/16/19	ZZ	
cis-1,3-dichloropropene	ND	1	5	ug/Kg		09/16/19	ZZ	
cis-1,4-dichloro-2-butene	ND	1	5	ug/Kg		09/16/19	ZZ	
Dibromomethane	ND	1	5	ug/Kg		09/16/19	ZZ	
Dichlorodifluoromethane	ND	1	5	ug/Kg		09/16/19	ZZ	
Di-isopropyl ether (DIPE)	ND	1	5	ug/Kg		09/16/19	ZZ	
Ethylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
Ethyl-tertbutylether (ETBE)	ND	1	5	ug/Kg		09/16/19	ZZ	
Hexachlorobutadiene	ND	1	5	ug/Kg		09/16/19	ZZ	
Isopropylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
m and p-Xylene	ND	1	5	ug/Kg		09/16/19	ZZ	
Methylene chloride	ND	1	5	ug/Kg		09/16/19	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1	5	ug/Kg		09/16/19	ZZ	
Naphthalene	ND	1	5	ug/Kg		09/16/19	ZZ	
N-butylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
N-propylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
o-Xylene	ND	1	5	ug/Kg		09/16/19	ZZ	
Sec-butylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
Styrene	ND	1	5	ug/Kg		09/16/19	ZZ	
t-Butyl alcohol (TBA)	ND	1	10	ug/Kg		09/16/19	ZZ	
Tert-amylmethylether (TAME)	ND	1	5	ug/Kg		09/16/19	ZZ	
Tert-butylbenzene	ND	1	5	ug/Kg		09/16/19	ZZ	
Tetrachloroethene	ND	1	5	ug/Kg		09/16/19	ZZ	
Toluene	ND	1	5	ug/Kg		09/16/19	ZZ	
trans-1,2-dichloroethene	ND	1	5	ug/Kg		09/16/19	ZZ	
trans-1,3-dichloropropene	ND	1	5	ug/Kg		09/16/19	ZZ	
trans-1,4-dichloro-2-butene	ND	1	5	ug/Kg		09/16/19	ZZ	
Trichloroethene	ND	1	5	ug/Kg		09/16/19	ZZ	
Trichlorofluoromethane	ND	1	5	ug/Kg		09/16/19	ZZ	
Vinyl Chloride	ND	1	5	ug/Kg		09/16/19	ZZ	
Xylenes (Total)	ND	1	5	ug/Kg		09/16/19	ZZ	

Surrogate	*% Recovery*	*Limits*	*Notes*
1,2-Dichloroethane-d4 (SUR)	*96*	*70-145*	
4-Bromofluorobenzene (SUR)	*117*	*70-145*	
Dibromofluoromethane (SUR)	*105*	*70-145*	
Toluene-d8 (SUR)	*99*	*70-145*	

QCBatchID: QC1206685	Analyst: nicollez	Method: EPA 8260B
Matrix: Solid	Analyzed: 09/16/2019	Instrument: VOA-MS (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes	
QC1206685MB1						
1,1,1,2-Tetrachloroethane	ND	ug/Kg		5		
1,1,1-Trichloroethane	ND	ug/Kg		5		
1,1,2,2-Tetrachloroethane	ND	ug/Kg		5		
1,1,2-Trichloroethane	ND	ug/Kg		5		
1,1,2-Trichlorotrifluoroethane	ND	ug/Kg		5		
1,1-Dichloroethane	ND	ug/Kg		5		
1,1-Dichloroethene	ND	ug/Kg		5		
1,1-Dichloropropene	ND	ug/Kg		5		
1,2,3-Trichlorobenzene	ND	ug/Kg		5		
1,2,3-Trichloropropane	ND	ug/Kg		5		
1,2,4-Trichlorobenzene	ND	ug/Kg		5		
1,2,4-Trimethylbenzene	ND	ug/Kg		5		
1,2-Dibromo-3-chloropropane	ND	ug/Kg		5		
1,2-Dibromoethane	ND	ug/Kg		5		
1,2-Dichlorobenzene	ND	ug/Kg		5		
1,2-Dichloroethane	ND	ug/Kg		5		
1,2-Dichloropropane	ND	ug/Kg		5		
1,3,5-Trimethylbenzene	ND	ug/Kg		5		
1,3-Dichlorobenzene	ND	ug/Kg		5		
1,3-Dichloropropane	ND	ug/Kg		5		
1,4-Dichlorobenzene	ND	ug/Kg		5		
2,2-Dichloropropane	ND	ug/Kg		5		
2-Butanone (MEK)	ND	ug/Kg		100		
2-Chlorotoluene	ND	ug/Kg		5		
4-Chlorotoluene	ND	ug/Kg		5		
4-Isopropyltoluene	ND	ug/Kg		5		
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg		5		
Acetone	ND	ug/Kg		100		
Allyl Chloride	ND	ug/Kg		5		
Benzene	ND	ug/Kg		5		
Bromobenzene	ND	ug/Kg		5		
Bromochloromethane	ND	ug/Kg		5		
Bromodichloromethane	ND	ug/Kg		5		
Bromoform	ND	ug/Kg		5		
Bromomethane	ND	ug/Kg		5		
Carbon Tetrachloride	ND	ug/Kg		5		
Chlorobenzene	ND	ug/Kg		5		
Chlorodibromomethane	ND	ug/Kg		5		
Chloroethane	ND	ug/Kg		5		
Chloroform	ND	ug/Kg		5		
Chloromethane	ND	ug/Kg		5		
cis-1,2-Dichloroethene	ND	ug/Kg		5		
cis-1,3-dichloropropene	ND	ug/Kg		5		
cis-1,4-dichloro-2-butene	ND	ug/Kg		5		
Dibromomethane	ND	ug/Kg		5		
Dichlorodifluoromethane	ND	ug/Kg		5		
Di-isopropyl ether (DIPE)	ND	ug/Kg		5		
Ethylbenzene	ND	ug/Kg		5		
Ethyl-tertbutylether (ETBE)	ND	ug/Kg		5		
Hexachlorobutadiene	ND	ug/Kg		5		
Isopropylbenzene	ND	ug/Kg		5		
m and p-Xylene	ND	ug/Kg		5		

QCBatchID: QC1206685 **Analyst:** nicollez **Method:** EPA 8260B

Matrix: Solid **Analyzed:** 09/16/2019 **Instrument:** VOA-MS (group)

Analyte	Blank Result	Units		RDL	Notes
QC1206685MB1					
Methylene chloride	ND	ug/Kg		5	
Methyl-t-butyl Ether (MTBE)	ND	ug/Kg		5	
Naphthalene	ND	ug/Kg		5	
N-butylbenzene	ND	ug/Kg		5	
N-propylbenzene	ND	ug/Kg		5	
o-Xylene	ND	ug/Kg		5	
Sec-butylbenzene	ND	ug/Kg		5	
Styrene	ND	ug/Kg		5	
t-Butyl alcohol (TBA)	ND	ug/Kg		10	
Tert-amylmethylether (TAME)	ND	ug/Kg		5	
Tert-butylbenzene	ND	ug/Kg		5	
Tetrachloroethene	ND	ug/Kg		5	
Toluene	ND	ug/Kg		5	
trans-1,2-dichloroethene	ND	ug/Kg		5	
trans-1,3-dichloropropene	ND	ug/Kg		5	
trans-1,4-dichloro-2-butene	ND	ug/Kg		5	
Trichloroethene	ND	ug/Kg		5	
Trichlorofluoromethane	ND	ug/Kg		5	
Vinyl Chloride	ND	ug/Kg		5	
Xylenes (Total)	ND	ug/Kg		5	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1206685LCS1											
1,1-Dichloroethene	50		57		ug/Kg	114			59-172		
Benzene	50		56		ug/Kg	112			62-137		
Chlorobenzene	50		52		ug/Kg	104			60-133		
Methyl-t-butyl Ether (MTBE)	50		48		ug/Kg	96			62-137		
Toluene	50		55		ug/Kg	110			59-139		
Trichloroethene	50		56		ug/Kg	112			66-142		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1206685MS1, QC1206685MSD1												**Source: 419376-005**
1,1-Dichloroethene	ND	50	50	55	53	ug/Kg	110	106	3.7	59-172	22	
Benzene	ND	50	50	53	52	ug/Kg	106	104	1.9	62-137	24	
Chlorobenzene	ND	50	50	48	47	ug/Kg	96	94	2.1	60-133	24	
Methyl-t-butyl Ether (MTBE)	ND	50	50	50	49	ug/Kg	100	98	2.0	62-137	21	
Toluene	ND	50	50	50	50	ug/Kg	100	100	0.0	59-139	21	
Trichloroethene	ND	50	50	52	52	ug/Kg	104	104	0.0	66-142	21	

QCBatchID: QC1206704 **Analyst:** kedy **Method:** EPA 6010B

Matrix: Solid **Analyzed:** 09/16/2019 **Instrument:** AAICP (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1206704MB1					
Antimony	ND	mg/Kg		3	
Arsenic	ND	mg/Kg		1	
Barium	ND	mg/Kg		1	
Beryllium	ND	mg/Kg		0.5	
Cadmium	ND	mg/Kg		0.5	
Chromium	ND	mg/Kg		1	
Cobalt	ND	mg/Kg		0.5	
Copper	ND	mg/Kg		1	
Lead	ND	mg/Kg		1	
Molybdenum	ND	mg/Kg		1	
Nickel	ND	mg/Kg		1.5	
Selenium	ND	mg/Kg		3	
Silicon, as Silica	ND	mg/Kg		107	
Silver	ND	mg/Kg		0.5	
Thallium	ND	mg/Kg		3	
Vanadium	ND	mg/Kg		0.5	
Zinc	ND	mg/Kg		5	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1206704LCS1											
Antimony	100		97.4		mg/Kg	97			80-120		
Arsenic	100		91.5		mg/Kg	92			80-120		
Barium	100		93.4		mg/Kg	93			80-120		
Beryllium	100		88.1		mg/Kg	88			80-120		
Cadmium	100		95.2		mg/Kg	95			80-120		
Chromium	100		98.8		mg/Kg	99			80-120		
Cobalt	100		94.8		mg/Kg	95			80-120		
Copper	100		94.0		mg/Kg	94			80-120		
Lead	100		93.6		mg/Kg	94			80-120		
Molybdenum	100		98.9		mg/Kg	99			80-120		
Nickel	100		93.0		mg/Kg	93			80-120		
Selenium	100		91.8		mg/Kg	92			80-120		
Silver	100		96.3		mg/Kg	96			80-120		
Thallium	100		92.8		mg/Kg	93			80-120		
Vanadium	100		97.8		mg/Kg	98			80-120		
Zinc	100		94.4		mg/Kg	94			80-120		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1206704MS1, QC1206704MSD1												**Source: 418433-001**
Antimony	ND	100	100	51.2	49.4	mg/Kg	51	49	3.6	75-125	20	M
Arsenic	4.18	100	100	98.1	99.5	mg/Kg	94	95	1.4	75-125	20	
Barium	384	100	100	691	1350	mg/Kg	307	966	64.6	75-125	20	M
Beryllium	ND	100	100	88.2	88.4	mg/Kg	88	88	0.2	75-125	20	
Cadmium	0.66	100	100	87.8	89.8	mg/Kg	87	89	2.3	75-125	20	
Chromium	19.1	100	100	110	112	mg/Kg	91	93	1.8	75-125	20	
Cobalt	6.04	100	100	95.8	98.3	mg/Kg	90	92	2.6	75-125	20	
Copper	10.2	100	100	99.4	103	mg/Kg	89	93	3.6	75-125	20	
Lead	4.21	100	100	92.3	99.4	mg/Kg	88	95	7.4	75-125	20	

QCBatchID: QC1206704	**Analyst:** kedy	**Method:** EPA 6010B	
Matrix: Solid	**Analyzed:** 09/16/2019	**Instrument:** AAICP (group)	

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1206704MS1, QC1206704MSD1												**Source: 418433-001**
Molybdenum	1.42	100	100	94.9	97.3	mg/Kg	93	96	2.5	75-125	20	
Nickel	10.9	100	100	92.6	96.6	mg/Kg	82	86	4.2	75-125	20	
Selenium	ND	100	100	89.4	91.8	mg/Kg	89	92	2.6	75-125	20	
Silver	ND	100	100	94.0	92.7	mg/Kg	94	93	1.4	75-125	20	
Thallium	2.54	100	100	84.2	88.9	mg/Kg	82	86	5.4	75-125	20	
Vanadium	32.5	100	100	128	132	mg/Kg	96	100	3.1	75-125	20	
Zinc	29.5	100	100	111	117	mg/Kg	82	88	5.3	75-125	20	

QCBatchID:	**QC1206759**	**Analyst:**	kedy	**Method:**	EPA 7471A
Matrix:	Solid	**Analyzed:**	09/17/2019	**Instrument:**	AAICP-HG1

Blank Summary

Analyte	Blank Result	Units		RDL	Notes	
QC1206759MB1						
Mercury	ND	mg/Kg		0.14		

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1206759LCS1											
Mercury	0.83		0.83		mg/Kg	100			80-120		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1206759MS1, QC1206759MSD1												**Source: 418433-001**
Mercury	ND	0.83	0.83	0.75	0.76	mg/Kg	90	92	1.3	75-125	20	

QCBatchID: QC1206781	Analyst: ssabir	Method: EPA 8015M
Matrix: Solid	Analyzed: 09/18/2019	Instrument: SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1206781MB1					
TPH (C10 to C28)	ND	mg/Kg		10	
TPH (C10 to C28)	ND	mg/Kg		10	
TPH (C13 to C22)	ND	mg/Kg		10	
TPH (C13 to C22)	ND	mg/Kg		10	
TPH (C23 to C44)	ND	mg/Kg		10	
TPH (C23 to C44)	ND	mg/Kg		20	
TPH (C6 to C12)	ND	mg/Kg		10	
TPH (C6 to C12)	ND	mg/Kg		10	
TPH Diesel	ND	mg/Kg		10	
TPH Diesel	ND	mg/Kg		10	
TPH Motor Oil	ND	mg/Kg		10	
TPH Motor Oil	ND	mg/Kg		20	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
	LCS	LCSD	LCS	LCSD		LCS	LCSD		%Rec	RPD	
QC1206781LCS1											
TPH (C10 to C28)	250		240		mg/Kg	96			60-133		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
		MS	MSD	MS	MSD		MS	MSD		%Rec	RPD	
QC1206781MS1, QC1206781MSD1												**Source: 419498-001**
TPH (C10 to C28)	ND	250	250	240	240	mg/Kg	96	96	0.0	70-130	20	

Data Qualifiers and Definitions

Qualifiers

A	See Report Comments.
B	Analyte was present in an associated method blank.
B1	Analyte was present in a sample and associated method blank greater than MDL but less than RDL.
BQ1	No valid test replicates. Sample Toxicity is possible. Best result was reported.
BQ2	No valid test replicates.
BQ3	No valid test replicates. Final DO is less than 1.0 mg/L. Result may be greater.
BQ4	Minor Dissolved Oxygen loss was observed in the blank water check, however, the LCS was within criteria, validating the batch.
BQ5	Minor Dissolved Oxygen loss was observed in the blank water check.
C	Possible laboratory contamination.
D	RPD was not within control limits. The sample data was reported without further clarification.
D1	Lesser amount of sample was used due to insufficient amount of sample supplied.
D2	Reporting limit is elevated due to sample matrix. Target analyte was not detected above the elevated reporting limit.
D3	Insufficient sample was supplied for TCLP. Client was notified. TCLP was performed per the Client's instructions.
DW	Sample result is calculated on a dry weigh basis.
E	Concentration is estimated because it exceeds the quantification limits of the method.
I	The sample was read outside of the method required incubation period.
IR	Inconclusive Result. Legionella is present, however, there is possible non-specific agglutination preventing specific identification.
J	Reported value is estimated
L	The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample data was reported with qualifier.
L2	LCS did not meet recovery criteria, however, the MS and/or MSD met LCS recovery criteria, validating the batch.
M	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits due to matrix interference. The associated LCS and/or LCSD was within control limits and the sample data was reported without further clarification.
M1	The matrix spike (MS) or matrix spike duplicate (MSD) is not within control limits due to matrix interference.
M2	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits. The associated LCS and/or LCSD was not within control limits. Sample result is estimated.
N1	Sample chromatography does not match the specified TPH standard pattern.
NC	The analyte concentration in the sample exceeded the spike level by a factor of four or greater, spike recovery and limits do not apply.
P	Sample was received without proper preservation according to EPA guidelines.
P1	Temperature of sample storage refrigerator was out of acceptance limits.
P2	The sample was preserved within 24 hours of collection in accordance with EPA 218.6.
P3	Per Client request, sample was composited for volatile analysis. Sample compositing for volatile analysis is not recommended due to potential loss of target analytes. Results may be biased low.
Q1	Analyte Calibration Verification exceeds criteria. The result is estimated.
Q2	Analyte calibration was not verified and the result was estimated.
Q3	Analyte initial calibration was not available or exceeds criteria. The result was estimated.
S	The surrogate recovery was out of control limits due to matrix interference. The associated method blank surrogate recovery was within control limits and the sample data was reported without further clarification.
S1	The associated surrogate recovery was out of control limits; result is estimated.
S2	The surrogate was diluted out due to the presence of high concentrations of target and/or non-target compounds. Surrogate recoveries in the associated batch QC met recovery criteria.
S3	Internal Standard did not meet recovery limits. Analyte concentration is estimated.
T	Sample was extracted/analyzed past the holding time.
T1	Reanalysis was reported past hold time due to failing replicates in the original analysis (BOD only).
T2	Sample was analyzed ASAP but received and analyzed past the 15 minute holding time.
T3	Sample received and analyzed out of hold time per client's request.
T4	Sample was analyzed out of hold time per client's request.
T5	Reanalysis was reported past hold time. The original analysis was within hold time, but not reportable.
T6	Hold time is indeterminable due to unspecified sampling time.
T7	Sample was analyzed past hold time due to insufficient time remaining at time of receipt.

Definitions

DF	Dilution Factor
MDL	Method Detection Limit. Result is reported ND when it is less than or equal to MDL.
ND	Analyte was not detected or was less than the detection limit.
NR	Not Reported. See Report Comments.
RDL	Reporting Detection Limit
TIC	Tentatively Identified Compounds

ENTHALPY ANALYTICAL, INC.		Chain of Custody Record	Turn Around Time (Rush by advanced notice only)
806 N. Batavia St., Orange, CA 92868	ENTHALPY analytical, inc.	Lab No: 419376	Standard: ✔ 4 Day: 3 Day:
Phone: (714) 771-6900 Fax: (714)771-9933		Page: of	2 Day: 1 Day: Same Day:
Billing: Enthalpy - SoCal		Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other	Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other
c/o Montrose Environmental Group			
1 Park Plaza, Suite 1000, Irvine, CA 92614			

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Belshire Environmental Services	Name:	Vista Grande Park
Report To:	Cindy Johnson	Number:	
Email:	cindy@belshire.com	P.O. #:	310934
Address:	25971 Towne Centre Dr.	Address:	1100 W. Lambert Rd.
	Foothill Ranch, CA 92610		La Habra
Phone:	949-460-5200	Global ID:	
Fax:		Sampled By:	Abelino Garcia

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	Full VOCs by 8260	TPH Carbon Chain	Title 22 Metals	Sample on Hold	Test Instructions / Comments
1	Drum 1	9-13-19	7:15	soil	1 x 4 oz.	none				✔	Composite samples (3:1) prior to analysis for Drums 1, 2, 3
2	Drum 2	"	7:15	soil	1 x 4 oz.	none				✔	
3	Drum 3	"	7:15	soil	1 x 4 oz.	none				✔	
4	Composite (Drums, 1, 2, 3)	"					✔	✔	✔		Composite (3:1) prior to analysis
5	Drum 4	"	7:15	soil	2 x 8 oz.	none	✔	✔	✔		Drum 4 - no composite needed (providing 2 x 8 oz. jars)
6											
7											
8											
9											
10											

	Signature	Print Name	Company / Title	Date / Time
[1] Relinquished By:		Abelino Garcia	Belshire	9-13-19 8:20 AM
[1] Received By:		ZAIN PADILLA	EA/GL	9/13/19 0820 AM
[2] Relinquished By:				
[2] Received By:				
[3] Relinquished By:				
[3] Received By:				

4.2°C / 17.8°C

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Belshire Environmental Services Project: Vista Grande Park

Date Received: 9/12/19 Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2) Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 17.8 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 4.2 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?	✓		
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	✓		
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?			✓
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 9/13/19

Appendix D

Historical Aerial Photographs (1994 – 2022)



US Geological Survey Image (Google Earth Source)
Image Date: 5-31-1994



US Geological Survey Image (Google Earth Source)
Image Date: 11-30-2003



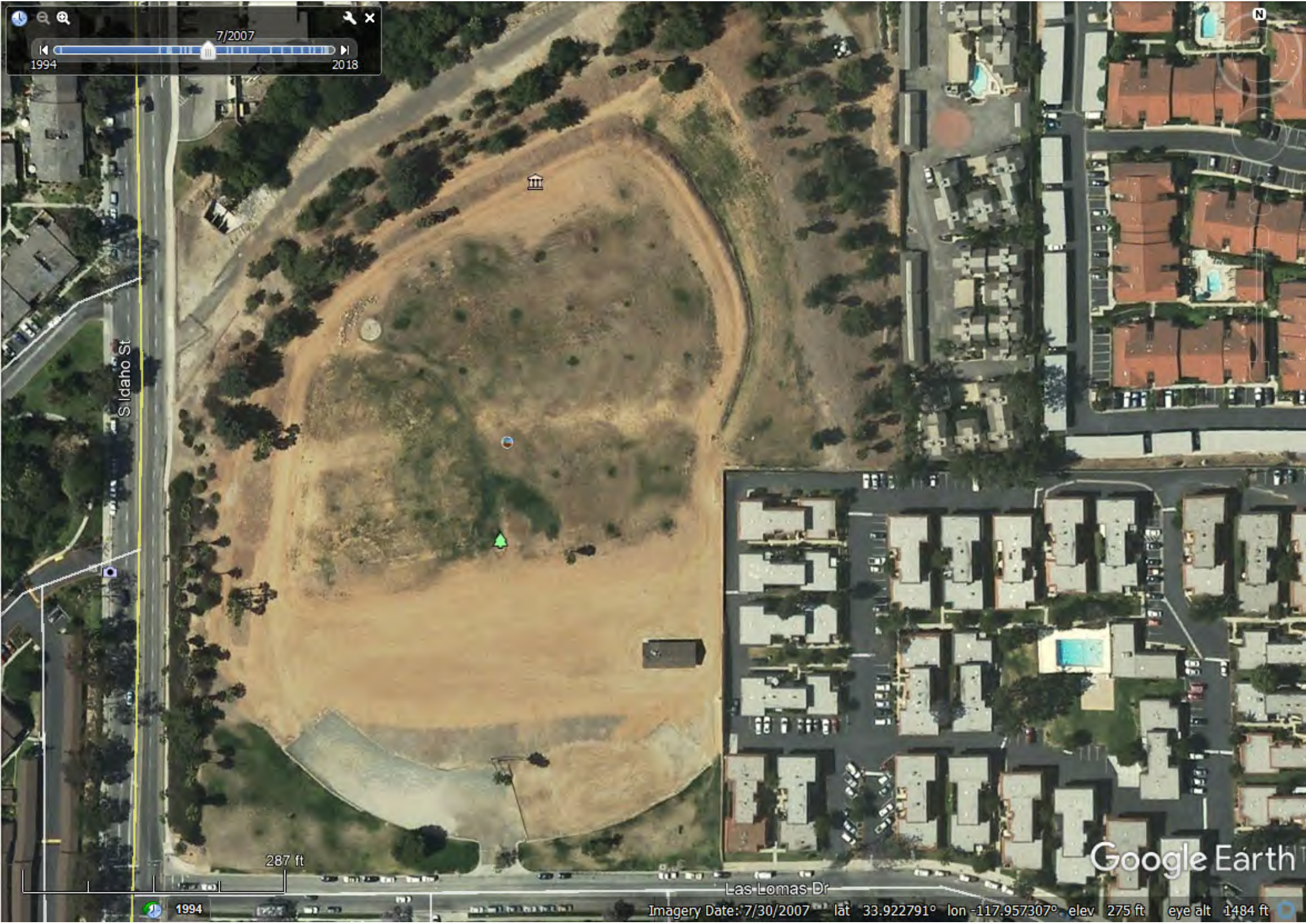
DigitalGlobe Image (Google Earth Source)
Image Date: 3-14-2005



DigitalGlobe Image (Google Earth Source)
Image Date: 3-27-2005



DigitalGlobe Image (Google Earth Source)
Image Date: 12-31-2005



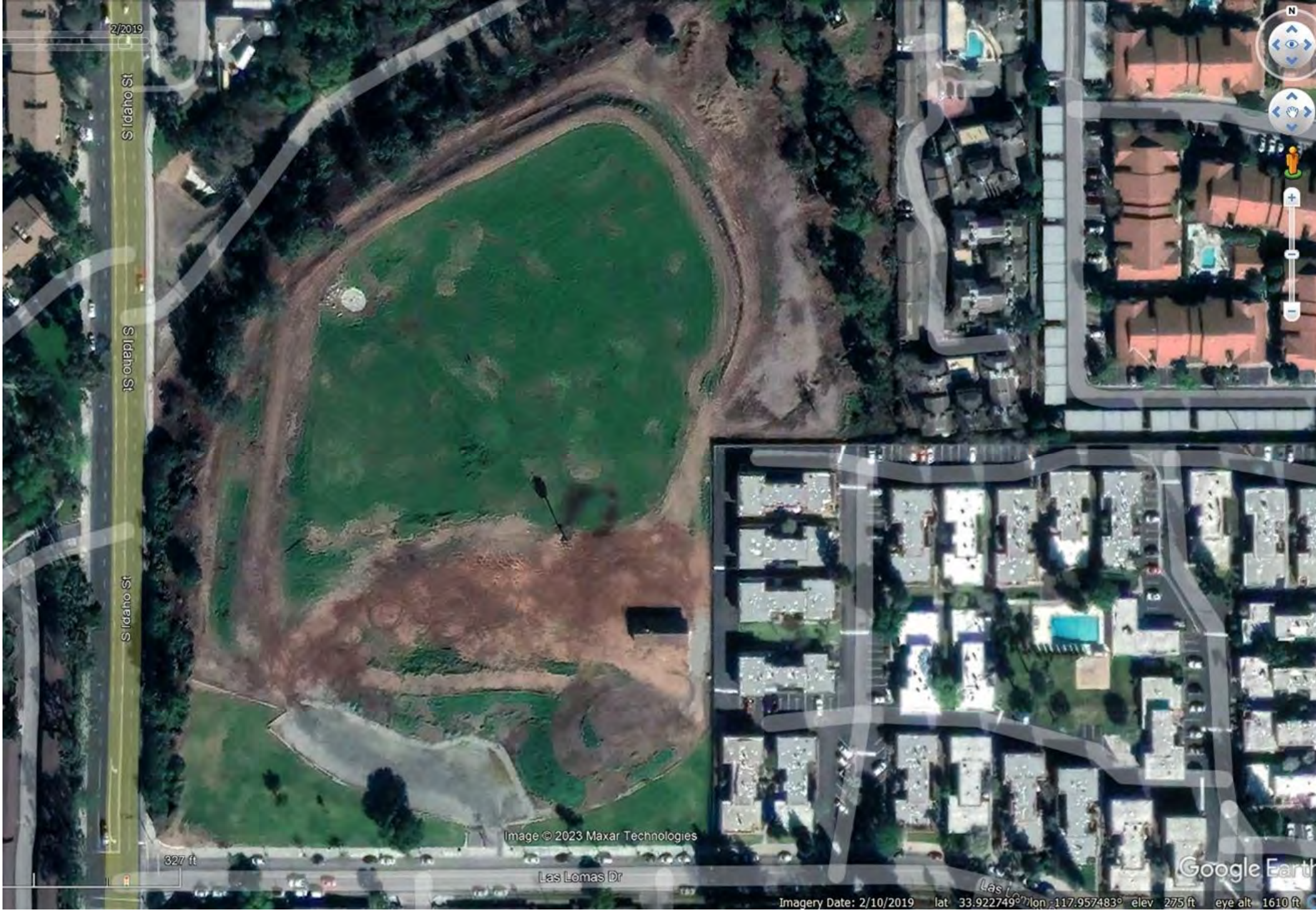
Google Earth Source
Image Date: 7-30-2007



Google Earth Source
Image Date: 4-23-2014



Google Earth Source
Image Date: 6-8-2018



Google Earth Source
Image Date: 2-10-2019



Google Earth Source
Image Date: 10-30-2020



Google Earth Source
Image Date: 4-22-2022

APPENDIX "C"

SAMPLE PROJECT CONSTRUCTION SIGN

APPENDIX "C"

84 in

48 in

VISTA GRANDE PARK IMPROVEMENTS

PROJECT FUNDED BY

STATE OF CALIFORNIA PROP 68 PARKS AND WATER BOND
LA HABRA GENERAL FUND, INCLUDING MEASURE T, REFUSE FUND,
CAL RECYCLE AND WATER ENTERPRISE FUNDS

STATE OF CALIFORNIA

GAVIN NEWSOM, GOVERNOR
Wade Crowfoot, Secretary of Natural Resources
Armando Quintero, Director, California Department of Parks and Recreation

LA HABRA CITY COUNCIL

JAMES GOMEZ, MAYOR
DAREN NIGSARIAN, MAYOR PRO TEM
STEVE SIMONIAN, COUNCIL MEMBER
ROSE ESPINOZA, COUNCIL MEMBER
JOSE MEDRANO, COUNCIL MEMBER

EXHIBIT B
INSURANCE REQUIREMENTS

Contractor shall maintain and shall require all of its subcontractors, consultants, and other agents to maintain the insurance listed below. Any requirement for insurance to be maintained after completion of the work shall survive this agreement.

CITY reserves the right to review any and all of the required insurance policies and/or endorsements, but has no obligation to do so. Failure to demand evidence of full compliance with the insurance requirements set forth in this agreement or failure to identify any insurance deficiency shall not relieve Contractor from, nor be construed or deemed a waiver of, its obligation to maintain the required insurance at all times during the performance of this agreement.

A. Workers Compensation & Employers Liability Insurance

- Workers Compensation insurance with statutory limits as required by the Labor Code of the State of California.
- Employers Liability with limits of $1,000,000 per Accident; $1,000,000 Disease per employee; $1,000,000 Disease per policy.
- The policy shall include a written waiver of the insurer's right to subrogate against CITY.
- Required Evidence Of Coverage:
    1. Subrogation waiver endorsement; and
    2. Properly completed Certificate of Insurance.

B. General Liability Insurance

- Commercial General Liability Insurance no less broad than Insurance Services Office (ISO) form CG 00 01.
- Coverage shall be on a standard occurrence form. Claims-Made forms are not acceptable without prior written consent. Modified, limited or restricted Occurrence forms are not acceptable without prior written consent.
- Minimum Limits: $5,000,000 per Occurrence; $10,000,000 General Aggregate; $10,000,000 Products/Completed Operations Aggregate. The General Aggregate shall apply separately to each project. The required limits may be provided by a combination of General Liability Insurance and Commercial Excess or Umbrella Liability Insurance. If contractor maintains higher limits than the specified minimum limits, CITY requires and shall be entitled to coverage for the higher limits maintained by contractor.
- Any deductible or self-insured retention shall be shown on the Certificate of Insurance. If the deductible or self-insured retention exceeds $25,000 it must be approved in advance by CITY. Contractor is responsible for any deductible or self-insured retention and shall fund it upon CITY'S written request, regardless of whether Contractor has a claim against the insurance or is named as a party in any action involving CITY.
- Coverage shall be continued for one (1) year after completion of the work.
- CITY shall be endorsed as an additional insured for liability arising out of ongoing and completed operations by or on behalf of the contractor. CITY shall continue to be an additional insured for completed operations for (1) year after completion of the work.
- The policy definition of "insured contract" shall include assumptions of liability

arising out of both ongoing operations and the products-completed operations hazard ("f" definition of insured contract in ISO form CG 00 01, or equivalent).

- The insurance provided to the additional insureds shall be primary to, and non-contributory with, any insurance or self-insurance program maintained by them.
- The policy shall cover inter-insured suits and include a "Separation of Insureds" or "severability" clause which treats each insured separately.
- The policy shall be endorsed to include a written waiver of the insurer's right to subrogate against all persons or entities that are, or are required to be, additional insureds.
- The policy shall not contain a Contractors' Warranty or other similar language which eliminates or restricts insurance because of a subcontractor's failure to carry specific insurance or to supply evidence of such insurance.
- Required Evidence of Coverage:
    1. Copy of the additional insured endorsement or policy language granting additional insured status;
    2. Copy of the endorsement or policy language indicating that coverage applicable to the additional insureds is primary and non-contributory;
    3. Properly completed Certificate of Insurance; and
    4. Completed and signed Agent/Broker Questionnaire with supporting documentation as required.

C. Automobile Liability Insurance

- Minimum Limit: $5,000,000 combined single limit per accident.
- Coverage shall apply to all owned, hired and non-owned vehicles.
- CITY shall qualify as an insured.
- Required Evidence of Coverage:
    1. Copy of the endorsement or policy language indicating that CITY is an insured; and
    2. Properly completed Certificate of Insurance.

D. Contractors Pollution Liability Insurance

- Minimum Limits: $5,000,000 per Pollution Incident; $10,000,000 Aggregate;
- Coverage shall apply to pollution incidents at or from any location at which Contractor is performing work under this agreement.
- Any deductible or self-insured retention shall be shown on the Certificate of Insurance. If the deductible or self-insured retention exceeds $25,000 it shall be approved in advance by CITY. Contractor is responsible for any deductible or self-insured retention and shall fund it upon CITY written request, regardless of whether Contractor has a claim against the insurance or is named as a party in any action involving CITY.
- CITY shall be endorsed as an additional insured for liability arising out of ongoing and completed operations by or on behalf of the Contractor. Additional insured status shall continue for one (1) year after completion of the work.
- The insurance provided to the additional insureds shall apply on a primary and non-contributory basis with respect to any insurance or self-insurance program maintained by them.

- If the insurance is on a Claims-Made basis, the retroactive date shall be no later than the commencement of work.
- The insurance shall be continued for one (1) year after completion of the work. If the insurance is on a Claims-Made basis, the continuation coverage may be provided by: (a) renewal of the existing policy; (b) an extended reporting period endorsement; or (c) replacement insurance with a retroactive date no later than the commencement of the work.
- Required Evidence of Coverage:
    1. Copy of the additional insured endorsement or policy language granting additional insured status;
    2. Copy of the endorsement or policy language indicating that coverage for the additional insureds is primary and non-contributory;
    3. Properly completed Certificate of Insurance.

E. Surety Bonds

- Bid bond.
- Performance and payment bonds for the entire contract price.
- The surety must be authorized to issue these bonds in the State of California.

F. Standards for Insurance Companies

- Insurers, other than the California State Compensation Insurance Fund, shall have an A.M. Best's rating of at least A:VII.

G. Documentation

- The Certificate of Insurance shall include the following reference: [_____]
- The name and address for Additional Insured endorsements and Certificates of Insurance is: City of La Habra
- Contractor shall provide immediate written notice if: (1) any of the required insurance policies is terminated; (2) the limits of any of the required policies are reduced; or (3) the deductible or self-insured retention is increased.
- Current Evidence of Coverage shall be provided for the entire required period of insurance.
- Upon written request, certified copies of required insurance policies shall be provided within thirty (30) days.

EXHIBIT C

CERTIFICATES OF INSURANCE AND ENDORSEMENTS

EXHIBIT D

CLAIMS PROCEDURE

SUMMARY OF PUBLIC CONTRACT CODE § 9204

The following procedure will apply to any claims by the Contractor on the City:

A "claim" is a separate demand on the City by a contractor on a public works project and sent by registered mail or certified mail with return receipt requested, for one or more of the following:

- A time extension, including relief from penalties for delay
- Payment by the City of money damages under the terms of the contract
- Payment of an amount that is disputed by the City

Initial Review

The claim must be supported by appropriate documentation. The City has 45 days within which to review the claim and provide the contractor with a written statement identifying the disputed and undisputed portions of the claim. If the City does not issue a written statement, the claim is deemed rejected in its entirety. The City will pay any undisputed portion of the claim within 60 days of issuing the statement.

Meet & Confer

If the contractor disputes the City's written response, or if the City does not issue one, the contractor may request in writing an informal conference to meet and confer for possible settlement of the claim. The City will schedule the meet and confer conference within 30 days of this request and provide a written statement identifying the remaining disputed and undisputed portions of the claim within 10 business days of the meet and confer. The City will pay the undisputed portion within 60 days of issuing this statement.

Mediation

With respect to any disputed portion remaining after the meet and confer, the City and contractor will submit the matter to nonbinding mediation, agree to a mediator within 10 business days after issuing the written statement, and share mediation costs equally. If mediation is unsuccessful, then the terms of the public works agreement and applicable law will govern resolution of the dispute.

Miscellaneous Provisions

Amounts not paid by the City in a timely manner bear interest at 7% per annum. Subcontractors may submit claims via this procedure through the general contractor. The City and contractor may waive the requirement to mediate, but cannot otherwise waive these claim procedures.